

Initial Study/Mitigated Negative Declaration Appendices

Granada Trunk Line Replacement Project

Lead Agency:



Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, California 90012

May 2026

APPENDIX A

Air Quality Study



Technical Memorandum

TO: Cristina Lowery
Michael Baker International

FROM: Terry A. Hayes Associates Inc.

DATE: September 26, 2025

RE: **Granada Trunk Line Replacement Project – Air Quality Study**

Introduction

Terry A. Hayes Associates Inc. (TAHA) has completed an Air Quality Study (Study) for the Los Angeles Department of Water and Power (LADWP) Granada Trunk Line (GTL) Replacement Project (proposed project) in accordance with the provisions of the California Environmental Quality Act (CEQA) Statute and Guidelines. This Study is organized as follows:

- Introduction
- Project Description
- Air Quality Topical Background
- Existing Setting
- Regulatory and Policy Framework
- Significance Thresholds
- Methodology
- Impact Assessment
- References

Project Description

The LADWP proposes replacing Units 1 and 2 of the GTL to increase safety and reliability; to allow for greater operational flexibility for the West Valley area of the City and the De Soto Reservoir; and to convey future local water supplies while reducing dependence on imported water. The proposed project would include the replacement of an approximately 13,228-foot portion of the GTL within the Rinaldi Street right-of-way (ROW) between Balboa Boulevard and Yolanda Avenue (Unit 1), and an approximately 13,183-foot portion of the GTL between Yolanda Avenue and the De Soto Reservoir Regulator Station (Unit 2), with a new 48-inch diameter Earthquake Resistant Ductile Iron Pipe. The replacement pipe would be installed within the Rinaldi Street ROW, generally parallel to the existing trunk line approximately 900 feet north of the existing alignment. At its eastern terminus, the GTL would tie into the existing GTL at Balboa Avenue and Rinaldi Street. At its western terminus, the proposed GTL replacement would tie into the existing De Soto Reservoir Regulator Station, located near the intersection of De Soto Avenue and Rinaldi Street. The existing GTL would be abandoned in place.



The proposed project is located within the Granada Hills – Knollwood and Chatsworth – Porter Ranch community plan areas, specifically within the Granada Hills and Porter Ranch neighborhoods, within the City of Los Angeles. The eastern terminus of the replacement pipe is located approximately 21 miles northwest of downtown Los Angeles. The replacement pipe would extend along Rinaldi Street, within the public ROW, from Balboa Boulevard in Granada Hills to approximately 500 feet east of De Soto Avenue, at the De Soto Reservoir, in Porter Ranch. **Figure 1** shows the regional vicinity and **Figure 2** shows the project location. **Figures 3 and 4** show the project alignment.

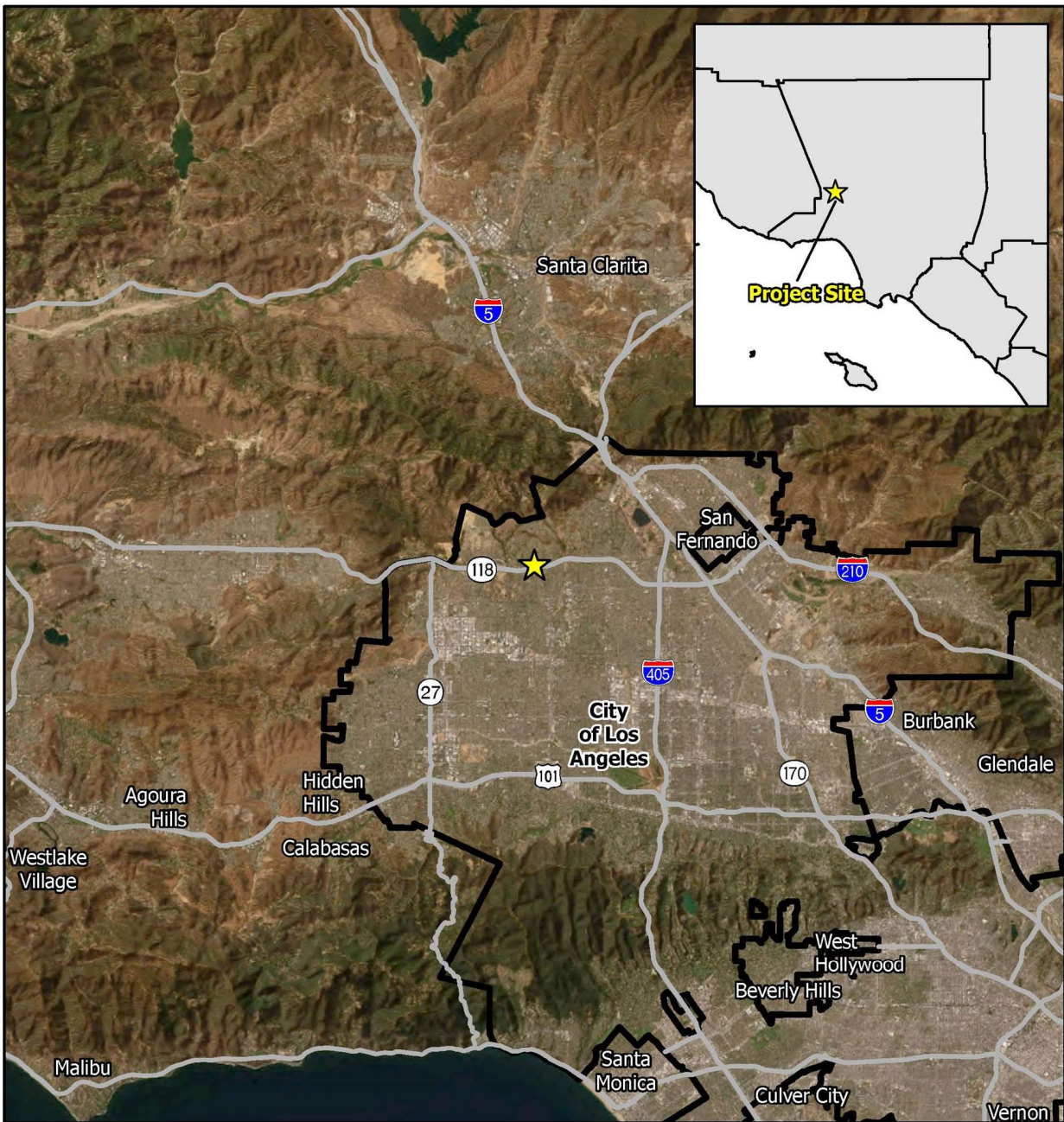
CONSTRUCTION

Construction of Unit 1 is planned to commence in July 2028 and conclude in July 2036. Construction of Unit 2 is planned to commence in September 2030 and conclude in March 2038. Construction would occur between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday. Nighttime work may be needed during construction that requires crossing a major street. This would require a permit to extend construction activities beyond regular daytime hours. The open trench construction would progress along the alignment at a rate of approximately 40 linear feet of pipeline installation per day, with a maximum of 500 feet of open trench along the roadway at any time. Pipe jacking would progress along the pipe jacking locations at a rate of approximately 9 to 10 linear feet per day after the pits are constructed. The existing trunk line would be abandoned and left in place; however, it would remain in service during construction. As such, interruptions in water service would not occur during the construction process.

Construction would typically involve two crews of approximately eight workers each. Approximately 800,000 square feet of roadway would be excavated and repaved. The total estimated amount of excavation would be approximately 75,000 cubic yards, and the total export would be approximately 100,000 cubic yards. A total of approximately 75,000 cubic yards of slurry would be imported throughout the construction process for use as backfill. Daily vehicular trips throughout construction would include a maximum of 10 round trips per day for transportation of construction equipment to and from the work areas; approximately 25 round trips per day for transportation of construction workers to and from the work areas (two crews); and 20 round trips per day for haul trucks transporting materials including the import of cement-slurry (i.e., dump trucks). Partial lane closures would be necessary for installing the new pipeline and its appurtenances. Construction equipment and materials may be stored at off-site staging areas; however, staging areas would be located adjacent or near the construction areas.

OPERATIONS

The replacement pipeline is anticipated to have an operational life of 100 years, and the replacement valves are anticipated to have an operational life of 70 years. The entire trunk line would be located underground and would not be visible during operations. The GTL would remain pressurized at all times to supply water to the surrounding service area. Connections to various trunk lines would be opened as necessary to support the water transmission system. These functions would not require any additional supplies from the City's drinking water system. Operational activities would be limited to scheduled maintenance and emergency repair. Maintenance activities would be minimal and would be similar to those that occur under existing conditions, including exercising valves and replacing or repairing worn appurtenances to ensure proper performance over the life of the facilities. No permanent workers would be required to operate or maintain the GTL.

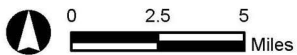


Legend

- ★ Project Site
- ▬ City of Los Angeles Boundary

GRANADA TRUNK LINE REPLACEMENT PROJECT

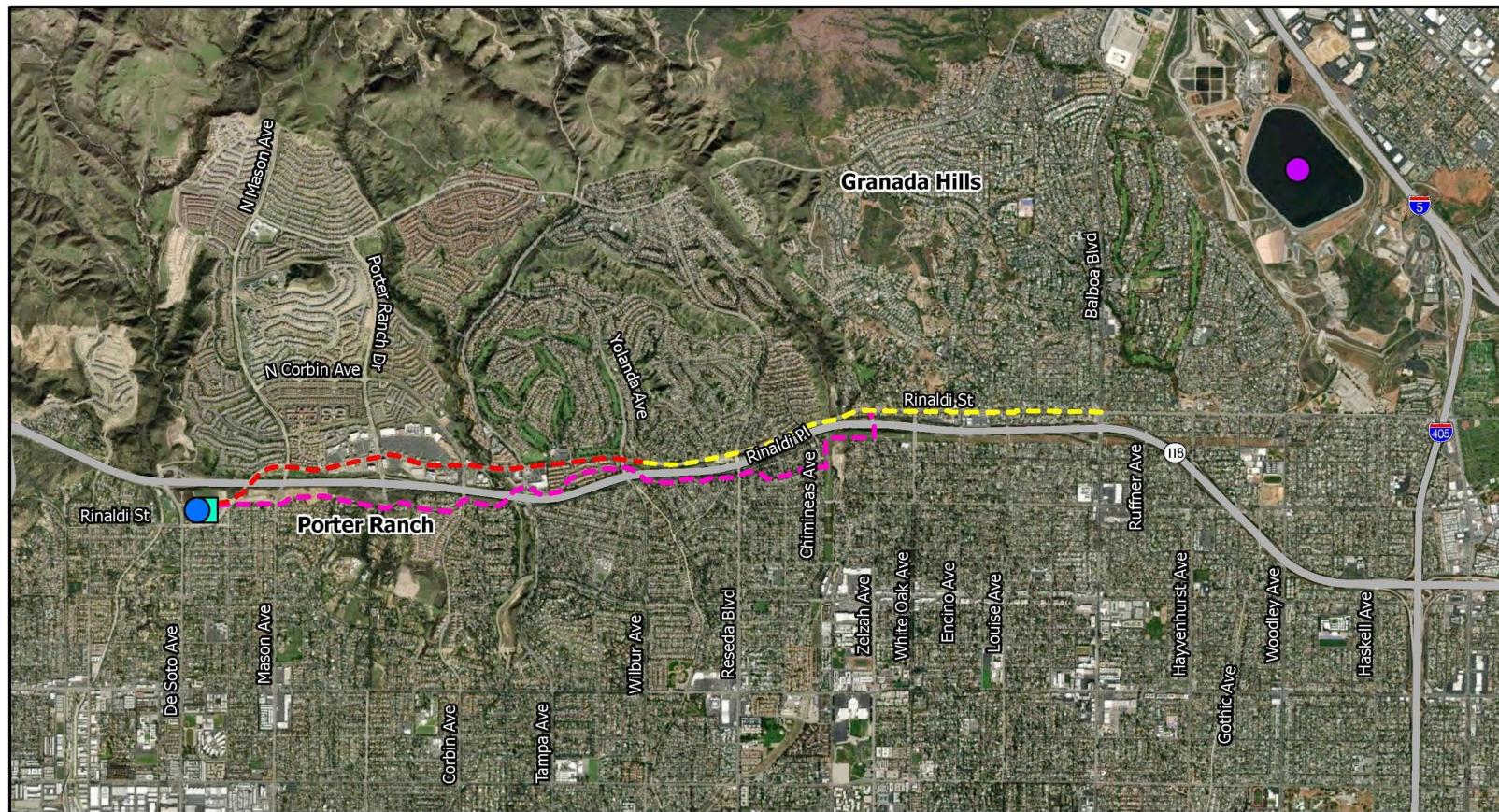
Michael Baker
INTERNATIONAL



Source: Esri, ArcGIS Online, County of Los Angeles

Regional Vicinity Map

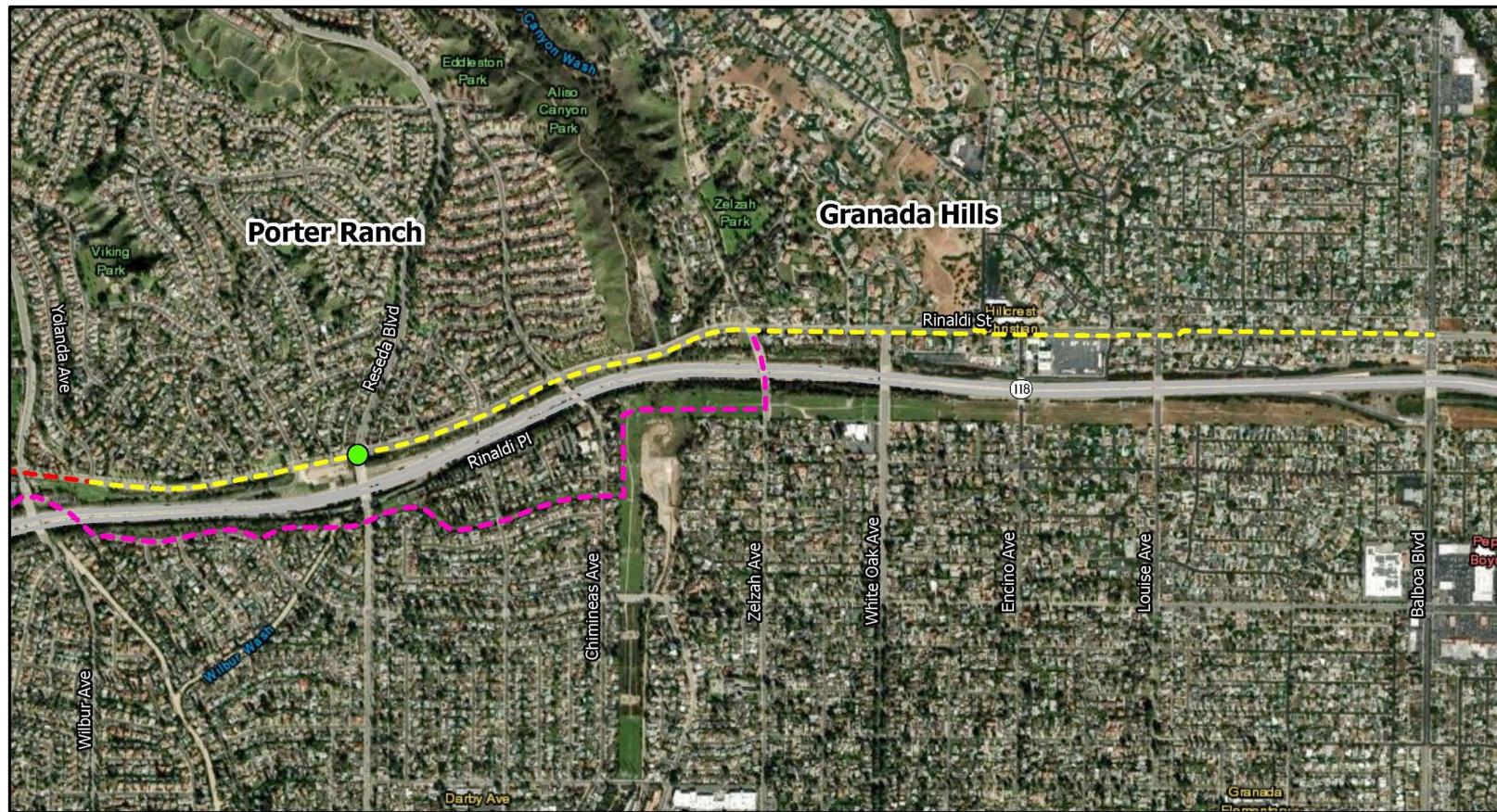
Figure 1

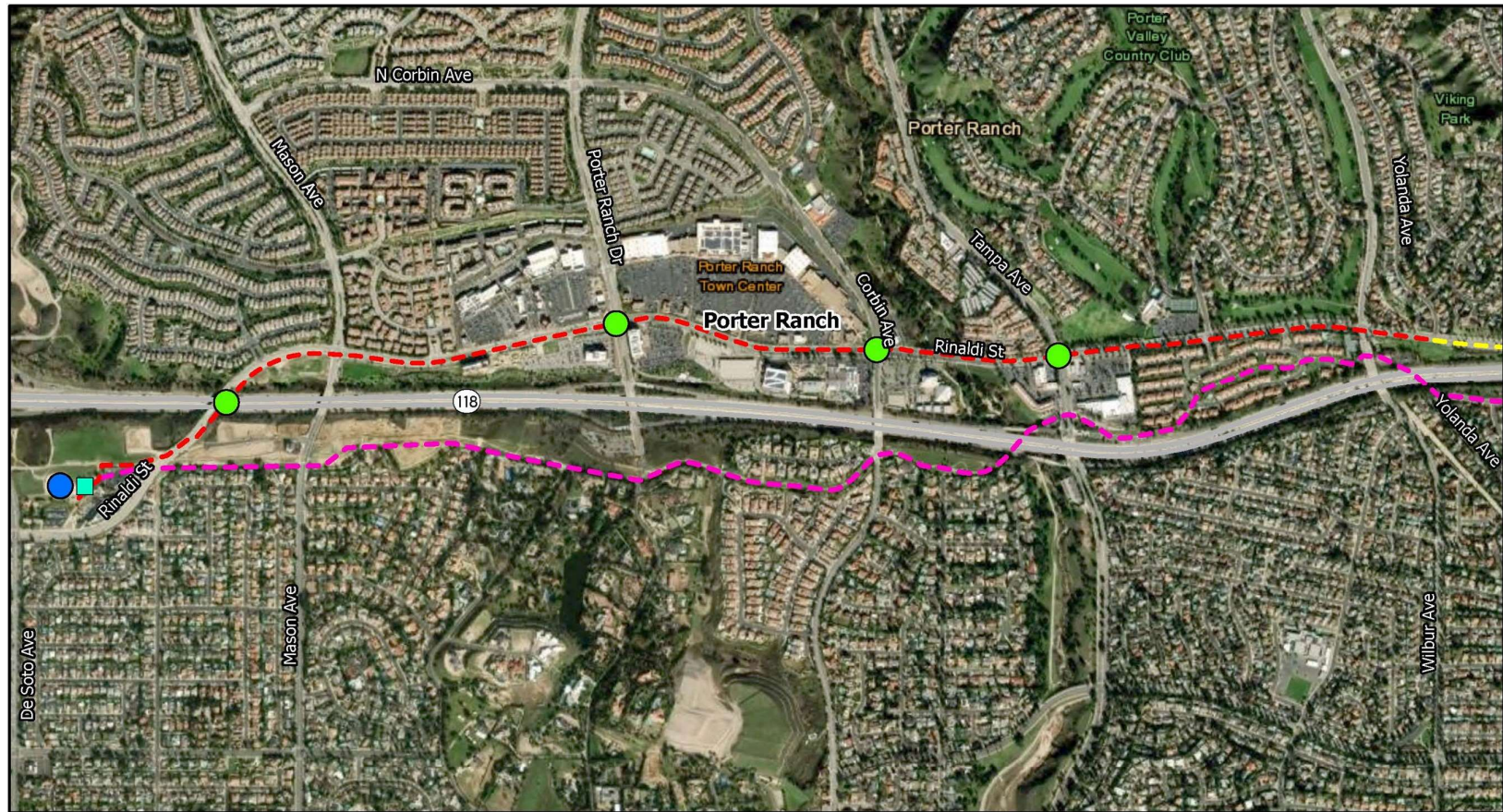


Legend

- | | |
|---|---|
|  Van Norman Reservoir (existing) |  Proposed Unit 1: 13,228 feet From Balboa Blvd. to Yolanda Ave. on Rinaldi St. |
|  De Soto Reservoir (existing) |  Proposed Unit 2: 13,183 feet From Yolanda Ave. to De Soto Reservoir RS on Rinaldi St. |
|  De Soto Pump Station (existing) |  Existing Granada Trunk Line - to be abandoned in place |







Legend

- De Soto Pump Station (existing)
- De Soto Reservoir (existing)
- Proposed Pipe Jacking Locations: Rinaldi St. and Porter Ranch Dr., Rinaldi St. and Corbin Ave., Rinaldi St. and Tampa Ave., Rinaldi St. and SR-118

- Proposed Unit 1 Alignment
- Proposed Unit 2 Alignment
- Existing Granada Trunk Line - to be abandoned in place

Air Quality Topical Background

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Air quality is commonly characterized by ambient air concentrations of seven specific pollutants identified by the United States Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the general public. These specific pollutants, known as criteria air pollutants, are pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Federal criteria air pollutants include ground-level ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM)—subdivided into particulates ten microns or less in diameter (PM₁₀) and fine particulate matter 2.5 microns or less in diameter (PM_{2.5})—and lead (Pb). These pollutants are common byproducts of human activities and have been documented through scientific research to cause adverse health effects. The federal ambient concentration criteria are known as the National Ambient Air Quality Standards (NAAQS), and the California ambient concentration criteria are referred to as the California Ambient Air Quality Standards (CAAQS).

The NAAQS and CAAQS have been set at levels considered safe to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly with a margin of safety, and to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.^{1,2} As the scientific methods for the study of air pollution health effects have progressed over the past decades, adverse effects have been shown to occur at lower levels of exposure. New findings over time have, in turn, led to the revision and lowering of NAAQS which, in the judgment of the USEPA, are necessary to protect public health. The NAAQS and CAAQS are listed in **Table 1** on the following page.

Air toxics are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. Air toxics are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Air toxics include, but are not limited to, diesel PM, metals, gases absorbed by particles, and certain vapors from fuels and other sources.

Existing Setting

LOCAL CLIMATE AND METEOROLOGICAL PATTERNS

The City of Los Angeles is located within the South Coast Air Basin (SCAB), which is an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east; and San Diego County to the south. The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the Coachella Valley area in Riverside County. The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the SCAB is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, heavy vehicular traffic, and industry. The SCAB is subject to high levels of air pollution due to the immense magnitude of emissions sources and the combination of topography, low mean atmospheric mixing height, and abundant sunshine.

¹USEPA, *NAAQS Table*, <https://www.epa.gov/criteria-air-pollutants/naaqs-table>. accessed March 4, 2025.

²CARB, *Common Air Pollutants*, <https://ww2.arb.ca.gov/resources/common-air-pollutants>. accessed March 4, 2025.

TABLE 1: AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS DESIGNATIONS					
Pollutant	Averaging Period	California		Federal	
		Standards (CAAQS)	Attainment Status	Standards (NAAQS)	Attainment Status
Ozone (O ₃)	1-Hour Average	0.09 ppm (180 µg/m³)	Nonattainment	--	--
	8-Hour Average	0.070 ppm (137 µg/m³)	Nonattainment	0.070 ppm (137 µg/m³)	Nonattainment (Extreme)
Carbon Monoxide (CO)	1-Hour Average	20 ppm (23 mg/m³)	Attainment	35.0 ppm (40 mg/m³)	Attainment (Maintenance)
	8-Hour Average	9.0 ppm (10 mg/m³)	Attainment	9.0 ppm (10 mg/m³)	Attainment (Maintenance)
Nitrogen Dioxide (NO ₂)	1-Hour Average	0.18 ppm (338 µg/m³)	Attainment	0.10 ppm (188 µg/m³)	Unclassifiable/Attainment
	Annual Arithmetic Mean	0.03 ppm (57 µg/m³)	Attainment	0.053 ppm (100 µg/m³)	Attainment
Sulfur Dioxide (SO ₂)	1-Hour Average	0.25 ppm (655 µg/m³)	Attainment	0.075 ppm (196 µg/m³)	Unclassifiable/Attainment
	24-Hour Average	0.04 ppm (105 µg/m³)	Attainment	0.14 ppm (365 µg/m³)	Unclassifiable/Attainment
	Annual Arithmetic Mean	--	--	0.030 ppm (80 µg/m³)	Unclassifiable/Attainment
Respirable Particulate Matter (PM ₁₀)	24-Hour Average	50 µg/m³	Nonattainment	150 µg/m³	Attainment (Maintenance)
	Annual Arithmetic Mean	20 µg/m³	Nonattainment	--	--
Fine Particulate Matter (PM _{2.5})	24-Hour Average	--	--	35 µg/m³	Nonattainment (Serious)
	Annual Arithmetic Mean	12 µg/m³	Nonattainment	9.0 µg/m³	Nonattainment (Moderate)
Lead (Pb)	30-day Average	1.5 µg/m³	Attainment	--	--
	Calendar Quarter	--	--	1.5 µg/m³	Attainment
	Rolling 3-Month Average	--	--	0.15 µg/m³	Attainment
Sulfates (-SO ₄ ²⁻)	24-Hour Average	25 µg/m³	Attainment	No Federal Standards Established	
Hydrogen Sulfide (H ₂ S)	1-Hour Average	0.03 ppm (42 µg/m³)	Attainment		
Vinyl Chloride	24-Hour Average	0.01 ppm (26 µg/m³)	Attainment		
CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppm = parts per million concentration; µg/m³ = micrograms per cubic meter concentration. SOURCE: CARB, <i>Ambient Air Quality Standards Designation Tool</i> ; CARB, <i>Ambient Air Quality Standards Table</i> , July 2024; USEPA, <i>Green Book for Criteria Pollutants</i> , Updated 2024.					

The mountains and hills surrounding the SCAB contribute to the variation of rainfall, temperature, and winds throughout the region. During the spring and early summer, pollution produced during any one day is typically blown out of the SCAB through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. Although the SCAB has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer and persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problem is the accumulation of CO and nitrogen oxides (NO_x) due to low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_x to form photochemical smog.

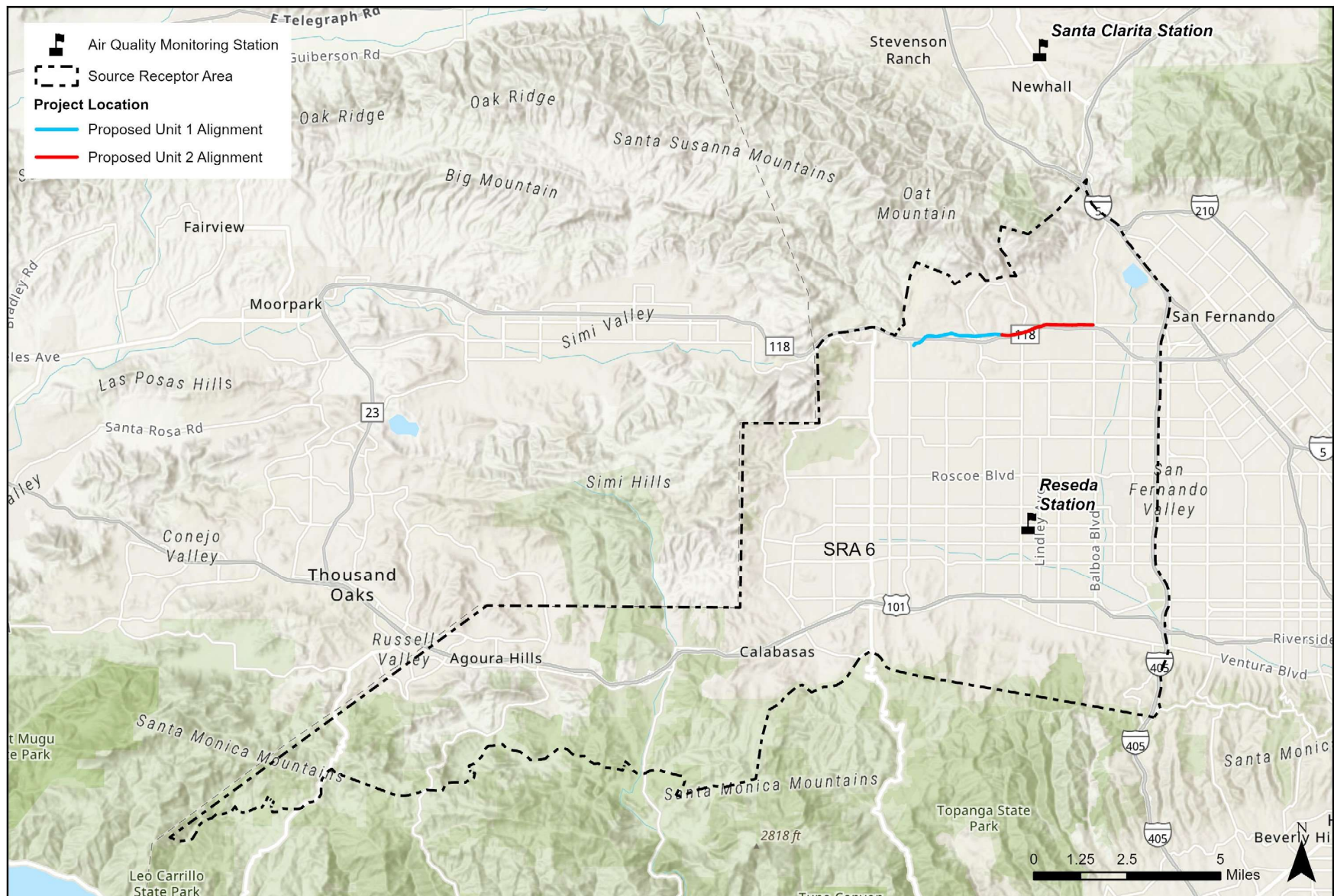
MONITORED POLLUTANT CONCENTRATIONS

Air quality within the SCAB region is characterized by concentrations of air pollutants measured at 34 active monitoring stations located throughout the South Coast Air Quality Management District (SCAQMD) jurisdiction.³ The SCAB is divided geographically into 38 source receptor areas (SRAs) that each contain—with the exception of four SRAs—a monitoring site where ambient pollutant concentrations are measured and recorded. The SRA boundaries were drawn based on regional modeling considering proximity to the nearest air monitoring site and wind patterns, the local emission inventories, and surrounding topography. As shown in **Figure 5**, the project site is located in SRA 6 (West San Fernando Valley). The monitoring site within SRA 6 is the Reseda Monitoring Site, which is located approximately 5.3 miles south of the project site and measures ambient concentrations of CO, O₃, NO₂, and PM_{2.5}.⁴ The nearest monitoring site that measures PM₁₀ concentrations is the Santa Clarita Valley (SRA 13) Santa Clarita Site, which is located approximately 7.2 miles north of the project site. The SCAQMD has discontinued permanent monitoring activities for SO₂ concentrations at most stations following an extended trend of concentrations decreasing and remaining well below established ambient air quality standards.

Table 2 displays concentrations of air pollutants measured at the monitoring sites between 2020 and 2024. Consistent with the federal and State nonattainment designations, concentrations of O₃, PM₁₀, and PM_{2.5} exceeded applicable federal and California air quality standards on numerous occasions during the five-year period. The nonattainment statuses for these pollutants represent ongoing cumulatively considerable air quality conditions pertaining to public health. Emissions of NO_x and fine particles contribute to the formation of O₃ in the atmosphere and are therefore given special consideration for projects under CEQA. Concentrations of NO₂ remained substantially below applicable standards throughout the monitoring period, demonstrating the continued attainment of the air quality standards. Ambient concentrations and emissions magnitudes of SO_x and CO have been reduced considerably through effective regulation and control strategies over the past several decades, and no instances of their concentrations exceeding the air quality standards have been measured in the SCAB in over 10 years.

³SCAQMD, *2025 Annual Air Quality Monitoring Network Plan*, July 1, 2025.

⁴*Ibid.*



Source: ESRI, 2025. Michael Baker International, Inc., 2025. TAHA, 2025.

TABLE 2: AMBIENT AIR QUALITY DATA						
Pollutant	Air Quality Metrics	Maximum Concentrations and Frequencies of Exceeded Standards by Year				
		2020	2021	2022	2023	2024
Carbon Monoxide (CO)	Maximum 1-hr. Concentration (ppm)	2.0	2.6	2.2	2.3	2.2
	# Days > 20 ppm (NAAQS/CAAQS)	0	0	0	0	0
	Maximum 8-hr. Concentration (ppm)	1.7	1.9	1.8	1.7	1.8
	# Days > 9 ppm (NAAQS/CAAQS)	0	0	0	0	0
Ozone (O ₃)	Maximum 1-hr. Concentration (ppm)	0.142	0.110	0.110	0.104	0.132
	# Days > 0.09 ppm (CAAQS)	14	4	7	10	14
	Maximum 8-hr. Concentration (ppm)	0.115	0.083	0.096	0.096	0.097
	# Days > 0.07 ppm (NAAQS/CAAQS)	49	33	24	30	49
Nitrogen Dioxide (NO ₂)	Maximum 1-hr. Concentration (ppm)	0.057	0.054	0.055	0.048	0.055
	# Days > 0.180 ppm (CAAQS)	0	0	0	0	0
	# Days > 0.100 ppm (NAAQS)	0	0	0	0	0
Fine Particulate Matter (PM _{2.5})	Maximum 24-hr. Concentration (µg/m ³)	27.6	55.5	20.5	21.9	43.1
	# Days > 35 µg/m ³ (NAAQS)	0	3	0	0	2
	Annual Concentration (µg/m ³)	10.13	10.06	8.81	8.81	9.87
	Exceed 12.0 µg/m ³ (CAAQS)?	No	No	No	No	No
	Exceed 9.0 µg/m ³ (NAAQS)?	Yes	No	No	No	Yes
Respirable Particulate Matter (PM ₁₀)	Maximum 24-hr. Concentration (µg/m ³)	48	47	36	41	70
	# Days > 50 µg/m ³ (CAAQS)	0	0	0	0	1
	# Days > 150 µg/m ³ (NAAQS)	0	0	0	0	0
	Annual Concentration (µg/m ³)	22.5	19.9	18.5	18.1	22.7
	Exceed 20 µg/m ³ (CAAQS)?	Yes	No	No	No	Yes
SRA = Source Receptor Area; NAAQS = National Ambient Air Quality Standard; CAAQS = California Ambient Air Quality Standard; ppm = parts per million concentration; µg/m ³ = micrograms per cubic meter concentration. SOURCE: SCAQMD, <i>Historical Data By Year (2020, 2021, 2022, 2023, 2024 Air Quality Data Tables)</i> , accessed August 20, 2025.						

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The California Air Resources Board (CARB) has identified the following groups who are most likely to experience adverse health effects due to exposure to air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, land uses that constitute sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The SCAQMD recommends that air quality assessments consider the potential localized impacts to sensitive receptors at distances up to 500 meters (1,640 feet) from the project site, depending on the proximity of sensitive land uses. The project area is primarily residential with some commercial and institutional land uses. Sensitive receptors nearest to the project site include:

- Residences along Rinaldi Street
- Sierra Canyon School
- Shepard Daycare
- Limekiln Canyon Park

- Porter Valley Country Club
- Aliso Canyon Park
- Inspire Learning Center
- Granada Hills Kindercare
- Serenity Kids Academy
- Rinaldi Adult Center
- Heritage Christian School

These receptors—depicted on **Figure 6** and **Figure 7**, below—represent land uses most likely to be affected by air pollutant emissions generated by construction and future operation of the proposed project and are not a comprehensive list of all sensitive land uses within 500 feet of the project site. Concentrations of pollutants are typically highest near emission sources and dissipate with distance, therefore the closest sensitive receptors in each direction are considered.

Regulatory and Policy Framework

FEDERAL

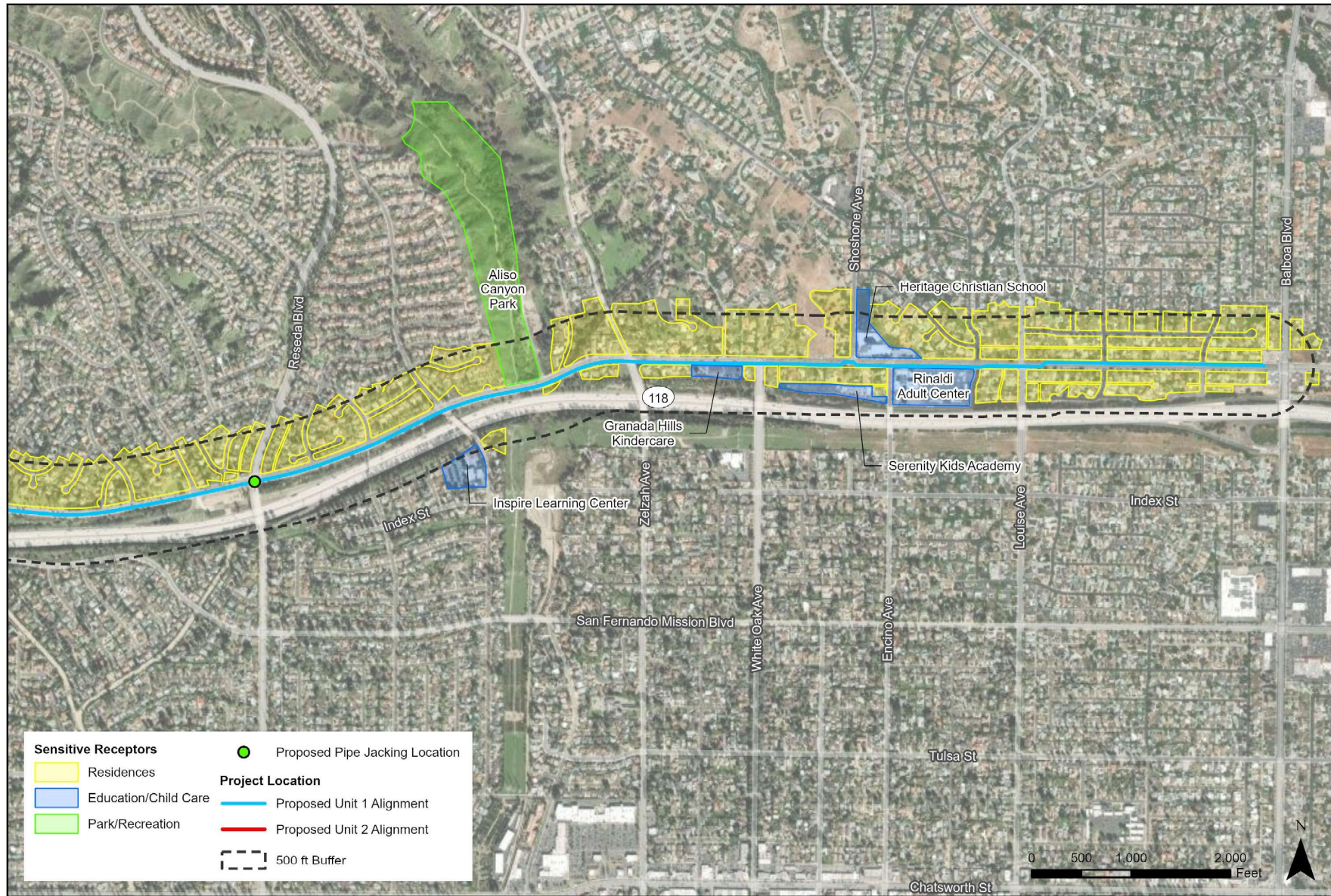
Federal Clean Air Act. The federal Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions in order to protect public health and welfare.⁵ The USEPA is responsible for the implementation and enforcement of the CAA, which establishes the NAAQS, specifies future dates for achieving compliance, and requires the USEPA to designate areas as attainment, nonattainment, or maintenance. The CAA also mandates that each state submit and implement a State Implementation Plan (SIP) for each criteria pollutant for which the state has not achieved the applicable NAAQS. The SIP includes pollution control measures that demonstrate how the standards for those pollutants will be met. **Table 1**, *Ambient Air Quality Standards*, shows the NAAQS currently in effect for each criteria pollutant. The SCAB, where the proposed project is located, does not meet the NAAQS for O₃ and PM_{2.5}.

STATE

California Clean Air Act. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practicable date. The CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both state and federal air pollution control programs within California. In this capacity, CARB conducts research, sets the CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. **Table 1** includes the CAAQS currently in effect for each of the federal criteria pollutants, as well as other pollutants regulated by the State standards. As shown in **Table 1**, the CAAQS generally include more stringent standards than the NAAQS, with the exception of the recently adopted 2024 annual average PM_{2.5} NAAQS. The Los Angeles County portion of the SCAB, where the proposed project is located, currently does not meet the CAAQS for O₃, PM_{2.5}, and PM₁₀.

California Code of Regulations. The California Code of Regulations (CCR) includes regulations that pertain to air quality emissions. Specifically, Section 2485 in Title 13 of the CCR states that the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to five minutes at any location. In addition, Section 93115 in Title 17 of the CCR states that operations of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emissions standards.

⁵USEPA, *Clean Air Act*, 1963.



Source: ESRI, 2025. Michael Baker International, Inc., 2025. TAHA, 2025.



Source: ESRI, 2025. Michael Baker International, Inc., 2025. TAHA, 2025.

State Programs for Toxic Air Contaminants. CARB has promulgated a number of Airborne Toxic Control Measures (ATCMs), both for stationary and mobile sources, including On-Road and Off-Road Vehicle Rules. These ATCMs include measures, such as limits on heavy-duty diesel motor vehicle idling and emission standards for off-road diesel construction equipment, in order to reduce public exposure to diesel particle matters and other toxic air contaminants. These actions are also supplemented by the Assembly Bill 2588 Air Toxics “Hot Spots” program and Senate Bill 1731, which require facilities to report their air toxics emissions, assess health risks, notify nearby residents and workers of significant risks if present, and reduce their risk through implementation of a risk management plan.

CARB identified particulate emissions from diesel-fueled engines as toxic air contaminants (TACs) in August 1998. Following the identification process, CARB was required by law to determine if there was a need for further control, which constituted the risk management phase of the program. CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and the Vehicles and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. The Diesel Advisory Committee approved these documents on September 28, 2000, paving the way for the next step in the regulatory process: the control measure phase. During the control measure phase, specific statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles have and continue to be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

REGIONAL AND LOCAL

South Coast Air Quality Management District. The SCAQMD was created to coordinate air quality planning efforts in non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, the Riverside County portion of the Salton Sea and Mojave Desert Air Basins, and Orange County. To meet the NAAQS and CAAQS, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs), which serve as a regional blueprint to develop and implement an emission reduction strategy that will bring the area into attainment with the standards in a timely manner. The most recent publication is the 2022 AQMP, which is intended to serve as a regional blueprint for achieving the federal air quality standards and healthful air. The 2022 AQMP includes strategies to ensure that rapidly approaching attainment deadlines for O₃ and PM_{2.5} are met, and that public health is protected to the maximum extent feasible. The AQMP is updated every four years to evaluate the effectiveness of the adopted programs and policies and to forecast attainment dates for nonattainment pollutants to support the SIP based on measured regional air quality and anticipated implementation of new technologies and emissions reductions.

The AQMP also includes an element that is related to transportation and sustainable communities planning. Pursuant to California Health and Safety Code Section 40450, the Southern California Association of Governments (SCAG) has the responsibility of preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. The analysis incorporated into the 2022 AQMP is based on the forecasts contained within the SCAG 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (2020 RTP/SCS). SCAG adopted the 2024 RTP/SCS in April 2024; however, these growth projections have not been incorporated by SCAQMD into the current AQMP. Thus, the growth projections from the SCAG 2020–2045 RTP/SCS are referenced in this Study. The SCAQMD has also established various rules to manage and improve air quality in the SCAB. The proposed project would be required to comply with all applicable SCAQMD rules and regulations pertaining to construction activities, including, but not limited to:

SCAQMD Regulation IV – Prohibitions sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events, including the following rules directly applicable to the proposed project:

- Rule 401 (Visible Emissions) states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three

minutes in any one hour which is as dark or darker in shade as that designated No 1. on the Ringelmann Chart or of such opacity as to obscure an observer's view.

- Rule 402 (Nuisance) states that a person should not emit air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- Rule 403 (Fugitive Dust) controls fugitive dust through various requirements including, but not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, limiting vehicle speeds on unpaved roads to 15 miles per hour, and maintaining effective cover over exposed areas. Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage piles, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.

SCAQMD Regulation XI – Source Specific Standards sets emissions standards for specific types of sources. The following is a list of rules which may apply to the proposed project:

- Rule 1113 (Architectural Coatings) requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (i.e., building envelope coatings, roof coatings, and traffic coatings).

City of Los Angeles. Local jurisdictions, such as the City, have the authority and responsibility to reduce air pollution through their land use decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. In general, the City of Los Angeles' General Plan (including the Framework, Air Quality, Mobility Plan 2035, and Plan for a Healthy Los Angeles) and the City of Los Angeles' Green New Deal (Sustainable pLAn 2019) contain policies and programs for the protection of the environment and health through improved air quality. These serve to provide additional critical guidance for the betterment of public health for the region and City. The most directly-related of those plans, the City's General Plan Air Quality Element, was adopted on November 24, 1992, and sets forth the goals, objectives, and policies which guide the City in its implementation of its air quality improvement programs and strategies. A number of these goals, objectives, and policies are relevant to land use development, and relate to traffic mobility, minimizing particulate emissions from construction activities, discouraging single-occupancy vehicle trips, managing traffic congestion during peak hours, and increasing energy efficiency in City facilities and private developments. The Air Quality Element establishes six goals:

- Good air quality in an environment of continued population growth and healthy economic structure;
- Less reliance on single-occupant vehicles with fewer commute and non-work trips;
- Efficient management of transportation facilities and system infrastructure using cost-effective system management and innovative demand-management techniques;
- Minimal impacts of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation and air quality;
- Energy efficiency through land use and transportation planning, the use of renewable resources and less-polluting fuels and the implementation of conservation measures including passive measures such as site orientation and tree planting; and,
- Citizen awareness of the linkages between personal behavior and air pollution and participation in efforts to reduce air pollution.

Significance Thresholds

CEQA STATUTE AND GUIDELINES

This Study was undertaken to determine whether construction or operation of the proposed project would have the potential to result in significant environmental impacts related to air quality in the context of the Appendix G Environmental Checklist criteria of the CEQA Statute and Guidelines. Implementation of the proposed project may result in a significant impact related to air quality if it would:

- a) Conflict with or obstruct implementation of the applicable air quality plan;
- b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- c) Expose sensitive receptors to substantial pollutant concentrations; and/or,
- d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

To assist in addressing the Appendix G Environmental Checklist questions, the SCAQMD published the *CEQA Air Quality Handbook* to guide air quality assessments for CEQA projects within its jurisdiction as ordained by the CEQA Statute and Guidelines.^{6,7} The SCAQMD promulgates that air pollutant emissions that would be generated by proposed CEQA projects should be analyzed at both regional and local scales as part of fully addressing the Environmental Checklist criteria. Regional emissions refer to all emissions that would be associated with construction and operation of a project (i.e., including remote or on-road mobile source emissions), while localized emissions refer to only those emissions that would be produced by sources located on the project site (i.e., exhaust stack emissions from off-road equipment and on-site trucks, and fugitive dust). To guide the assessment of air quality impacts, the SCAQMD established maximum daily threshold screening values for air pollutant emissions from construction and operation of CEQA projects within the SCAB, which are summarized with the other SCAQMD Air Quality Significance Thresholds in **Table 3**, below.⁸

The mass daily thresholds in the top portion of the table were established at levels to screen out the potential occurrence of air quality violations that would obstruct implementation of the AQMP and hinder efforts to improve regional air quality.⁹ SCAQMD guidance conveys that if emissions for individual projects remain below the Mass Daily Thresholds shown in **Table 3**, those emissions would be considered less than significant at the project level and would not be cumulatively considerable. If maximum daily emissions from sources involved in implementing the proposed project would reach levels exceeding applicable threshold values during construction or operations, opportunities to mitigate those emissions are required to be explored and implemented as feasible.

⁶SCAQMD, *CEQA Air Quality Handbook (Version 3)*, revised November 2001.

⁷AEP, *2024 CEQA Statute & Guidelines*, January 2024.

⁸SCAQMD, *South Coast AQMD Air Quality Significance Thresholds*, March 2023.

⁹SCAQMD, *CEQA Air Quality Handbook (Version 3)*, revised November 2001.

TABLE 3: SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS		
MASS DAILY THRESHOLDS ^{/a/}		
Pollutant	Construction (lbs/day) ^{/b/}	Operation (lbs/day)
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NO _x)	100	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SO _x)	150	150
Particulates (PM ₁₀)	150	150
Fine Particulates (PM _{2.5})	55	55
Lead (Pb)	3	3
TOXIC AIR CONTAMINANTS (TACs) AND ODOR THRESHOLDS		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million (1 x 10 ⁻⁵) Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million (1 x 10 ⁻⁴) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS ^{/c/}		
<u>NO₂</u> 1-hour average Annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
<u>PM₁₀</u> 24-hour average Annual arithmetic mean	10.4 µg/m ³ (construction) ^{/d/} & 2.5 µg/m ³ (operation) 1.0 µg/m ³	
<u>PM_{2.5}</u> 24-hour average	10.4 µg/m ³ (construction) ^{/e/} & 2.5 µg/m ³ (operation)	
<u>SO₂</u> 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 th percentile) 0.04 ppm (state)	
<u>Sulfate</u> 24-hour average	25 µg/m ³ (state)	
<u>CO</u> 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
<u>Lead</u> 30-day average Rolling 3-month average	1.5 µg/m ³ (state) 0.15 µg/m ³ (federal)	
lbs/day = pounds per day; ppm = parts per million; µg/m ³ = micrograms per cubic meter; MT/yr. = metric tons per year /a/ SCAQMD, <i>CEQA Air Quality Handbook</i> (SCAQMD, 2001). /b/ Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins). /c/ Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated. /d/ Ambient air quality threshold based on SCAQMD Rule 403.		
SOURCE: SCAQMD, 2023.		

The concentration-based screening thresholds are primarily applicable to localized emissions generated by sources on the project site(s), as on-road mobile source emissions are distributed throughout the regional roadway network. To apply the concentration-based localized significance thresholds (LSTs) for criteria pollutants in the bottom third of **Table 3**, the SCAQMD utilized measured air pollutant concentrations at its monitoring sites in conjunction with emissions dispersion modeling to derive LST screening values for estimated daily emissions from on-site sources

specific to the project site size, the distance to the nearest sensitive receptor, and the SRA in which it is located.¹⁰ The SCAQMD formulated the LST methodology to preclude the need for complex dispersion modeling from on-site sources for every CEQA project, which is a resource-intensive endeavor. The LST screening values were established at levels that would not produce localized concentrations exceeding the thresholds in **Table 3** based on generic project emissions modeling results combined with the existing ambient pollutant concentrations. **Table 4** presents the SCAQMD LST screening values for localized (on-site) emissions of NO_x, CO, PM₁₀, and PM_{2.5} during construction and operation of projects located in SRA 6 on a site of one acre in size within 25 meters (82 feet) of sensitive receptors.^{11,12}

TABLE 4: SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS – LST SCREENING VALUES				
Pollutant	NO_x	CO	PM₁₀	PM_{2.5}
Localized Construction Threshold (lbs/day)	103	426	4	3
Localized Operations Threshold (lbs/day)	103	426	1	1
Note: Construction LST values selected for a one-acre daily disturbance based on equipment inventory and 25-meter receptor distance in SRA 6.				
SOURCE: SCAQMD, 2024; SCAQMD, 2009.				

In addition to the mass daily thresholds for criteria pollutants and O₃ precursors, SCAQMD has established CEQA significance thresholds related to TACs and odorous emissions. As a diverse class of pollutants, TACs include many different pollutants with varying degrees of toxicity and that affect human health in different ways. Within the field of health risk assessments (HRAs), carcinogenic risk and non-carcinogenic hazards can be determined based on multipollutant exposures. According to SCAQMD methodology, health effects from carcinogenic air toxics are described in terms of excess incremental individual cancer risk. “Individual Cancer Risk” is the likelihood that a person continuously exposed to TAC concentrations over a 70-year lifetime will contract cancer based on the use of standard risk assessment methodology. SCAQMD established a project-specific TAC carcinogenic exposure threshold of an incremental excess cancer risk of 10 cases per million. For non-carcinogenic TACs, the acute and chronic exposures should not exceed a combined calculated Hazard Index value of 1.0, based on pollutant-specific reference-exposure levels (RELs).

Furthermore, construction and operation of certain land use development projects may have the potential to create public nuisances related to visible dust plumes and odors, depending on the nature of the land use and sensitive receptors in its vicinity. The SCAQMD air quality significance thresholds address odorous emissions by invoking compliance with SCAQMD Rule 402. A project may have a significant air quality impact if construction or operation of that project creates a public nuisance condition in violation of SCAQMD Rule 402. Visible dust plumes are controlled through the enforcement of SCAQMD Rule 401 and SCAQMD Rule 403.

Methodology

CONSTRUCTION

Construction of Unit 1 of the proposed project is anticipated to commence in July 2028 and conclude in July 2036. Construction of Unit 2 of the proposed project would be anticipated to commence in September 2030 and conclude in March 2038. Construction methods would include open trench and pipe jacking installations. Both open trench pipe installations and pipe jacking installations would occur concurrently over approximately 120 months. LADWP’s project team provided equipment and vehicle activity inventories for each method of construction, which can be found in the **Appendix**. The construction details were used to produce estimates of daily pollutant emissions

¹⁰SCAQMD, *Final Localized Significance Threshold Methodology*, July 2008.

¹¹SCAQMD, *Final Localized Significance Threshold Methodology Appendix C Mass Rate Lookup Tables*, October 21, 2009.

¹²SCAQMD, *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*, February 2011.

that would occur during construction of the proposed project and identify periods during which the maximum daily emissions would be expected based on activities conducted simultaneously.

Criteria Pollutant and Ozone Precursor Emissions

Construction activities would generate emissions from off-road equipment usage, on-road vehicle travel (truck hauling, vendor deliveries, and workers commuting), and paving. Construction emissions were calculated using the SCAQMD recommended California Emissions Estimator Model (CalEEMod, Version 2022.1.1.30). CalEEMod is based on outputs from Off-Road Emissions Inventory Program model (OFFROAD) and Emission FACTor model (EMFAC), which are emissions estimation models developed by CARB, and used to calculate emissions from construction activities, including off- and on-road vehicles, respectively. CalEEMod also relies upon known emissions data associated with certain activities or equipment (often referred to as “default” data, values or factors) that can be used if site-specific information is not available. **Table 5** provides an overview of the sources of air pollutant emissions that are accounted for in CalEEMod during construction. CalEEMod default values were used for equipment and vehicle emission factors, equipment load factors, and vehicle trip lengths. Daily on-road vehicle and off-road equipment activity inventories were populated in CalEEMod to characterize reasonably conservative estimates of maximum daily emissions that would occur during each type of GTL component construction. Detailed construction modeling data can be found in the **Appendix**.

TABLE 5: CONSTRUCTION EMISSIONS SOURCES			
Phase Type(s)	Activity	Source(s)	Pollutants
All Phases	Off-Road Equipment Use	Engine Exhaust	VOC, NO _x , CO, SO _x , PM ₁₀ , PM _{2.5}
All Phases	On-Road Vehicle Trips	Engine Exhaust	VOC, NO _x , CO, SO _x , PM ₁₀ , PM _{2.5}
All Phases	On-Road Vehicle Trips	Engine Evaporative Losses	VOC
All Phases	On-Road Vehicle Trips	Brake & Tire Wear	PM ₁₀ , PM _{2.5}
All Phases	On-Road Vehicle Trips	Re-Entrained Road Dust	PM ₁₀ , PM _{2.5}
Site Clearing, Grading	Truck Loading	Fugitive Dust	PM ₁₀ , PM _{2.5}
Site Clearing, Grading	Ground Disturbance	Fugitive Dust (Dozers/Graders)	PM ₁₀ , PM _{2.5}
Building Construction	Paving	Off-Gassing (Evaporation)	VOC
SOURCE: CAPCOA, 2022.			

Toxic Air Contaminant Emissions

In addition to criteria pollutants and O₃ precursors, this Study evaluates the potential exposures of sensitive receptors surrounding the project site to TAC emissions that would be generated during construction of the proposed project. The SCAQMD has not established a mass daily screening threshold for TAC emissions as they did for NO_x, CO, PM₁₀, and PM_{2.5}. However, a project could result in a potentially significant air quality impact if TAC emissions resulted in carcinogenic or non-carcinogenic exposures to sensitive receptors that met or exceeded an incremental increase of 10 excess cancers per million or a Hazard Index (HI) of 1.0, respectively, as identified in **Table 3**. Construction of the proposed project would produce TAC emissions from exhaust of diesel-fueled engines that power heavy-duty off-road equipment and on-road material hauling trucks, predominantly in the form of diesel PM.

OPERATIONS

The entire GTL would be located underground and would not be visible during operation. Operational activities would be limited to scheduled maintenance and emergency repair. Maintenance activities would be minimal and would be similar to those that occur under existing conditions. No additional permanent workers would be required to operate or maintain the GTL. Implementation of the proposed project would not introduce a new substantial

source of permanent emissions to the project site or surrounding area. Therefore, air quality impacts associated with the future operation of the proposed project are addressed qualitatively.

Impact Assessment

a) Would the proposed project conflict with or obstruct implementation of the applicable air quality plan? (Less-Than-Significant Impact)

In accordance with the procedures established in the SCAQMD *CEQA Air Quality Handbook*, the impact discussion addresses the following criteria to determine whether the proposed project is consistent with applicable SCAQMD and SCAG planning objectives:

- 1) Would the proposed project create any impacts related to air quality violations, such as:
 - An increase in the frequency or severity of existing air quality violations;
 - Causing or contributing to new air quality violations; or
 - Delaying timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
- 2) Would the proposed project exceed the assumptions utilized in preparing the AQMP:
 - Is the proposed project consistent with the population and employment growth projections upon which AQMP forecasted emission levels are based;
 - Does the proposed project incorporate mitigation measures to reduce potentially significant impacts; and/or
 - To what extent is proposed project development consistent with the AQMP land use policies and control measures?

Air quality violations occur when facilities are out of compliance with the applicable SCAQMD rule requirements, permit conditions or legal requirements, or with applicable state or federal air pollution regulations. The regional and localized air quality significance thresholds were designed as screening tools to avoid the potential occurrence and exacerbation of air quality violations resulting from construction and operation of individual CEQA projects based on the designation of emissions sources warranting advanced permitting and regulation. The second indicator of AQMP consistency is assessed by determining potential effects of permanent facility operations on population, housing, and employment assumptions that were used in the development of the AQMP and the RTP/SCS. If implementation of the proposed project would render the assumptions invalid by introducing growth within the SCAQMD jurisdiction that exceeds projections incorporated into the AQMP, a significant air quality impact may occur.

Construction

The first indicator is related to air quality violations, which are determined by a SCAQMD Air Quality Inspector when a business is out of compliance with applicable SCAQMD rule requirements, permit conditions or legal requirements, or with applicable state or federal air pollution regulations. Air quality violations typically involve large industrial facilities that emit vast quantities of highly regulated pollutants and are not common among typical land use development projects. Construction of the proposed project would be conducted in accordance with the best management practices provided in SCAQMD Regulation IV, Rule 401 (Visible Emissions) and Rule 403 (Fugitive Dust). Based on fugitive dust experiments conducted in real-world conditions, CalEEMod documentation indicates that the application of water as a dust suppressant to material stockpiles and disturbed ground areas would reduce fugitive dust emissions during construction activities by approximately 61 percent.¹³ Furthermore, all

¹³Countess Environmental, *Western Regional Air Partnership (WRAP) Fugitive Dust Handbook*, September 2006.

construction equipment and vehicles would be maintained and operated within manufacturer specifications to limit unnecessary emissions during use, and any vehicles traveling on unpaved surfaces would be required to limit their speed to 15 miles per hour or less. Idling of any off-road equipment or on-road vehicles would be constrained to no more than five minutes in any one location in accordance with the Section 2485 in Title 13 of the CCR.

Estimates of maximum daily air pollutant emissions that would be generated by construction activities can be used to demonstrate that the proposed project would not conflict with or obstruct implementation of the 2022 AQMP with regards to increasing the frequency or severity of existing air quality violations. The SCAQMD devised its mass daily thresholds of significance as a screening tool for determining the potential significance of air pollutant emissions from CEQA projects. **Table 6** and **Table 7** present the maximum daily regional emissions that would be generated during construction of each proposed project component attributed to a single work zone.

Table 6 presents the maximum daily emissions that would be generated during open-trench construction of the GTL by a single crew at a particular site. Daily emissions of O₃ precursors and criteria pollutants would remain well below the applicable SCAQMD regional thresholds and SRA 6 LST screening values at a single open trench worksite.

Table 7 presents the maximum daily emissions that would be generated during pipe-jacking construction of the GTL. The primary differences between the open-trench construction and the pipe-jacking construction would be the size of the active work zone (approximately 1,000 feet long for open trench and approximately 250 feet long for the jacking and receiving pits for pipe jacking) and the width and depth of the trenches. Daily emissions during construction of a single pipe-jacking work zone would be substantially less than the SCAQMD regional mass daily thresholds and LST screening values for SRA 6.

Throughout the construction period, multiple crews would be working on different components of the GTL project simultaneously. On the day of maximum anticipated construction activities, two crews would be required for the open-trench construction activities, and one crew would be required for pipe-jacking activities. **Table 8** presents the regional and localized emissions analyses of potentially overlapping activities. The overlapping construction analyses determined that construction of the proposed project would not generate emissions exceeding any applicable SCAQMD regional or localized threshold, even when assuming maximum possible emissions at each individual site. Construction of the proposed project would not have the potential to obstruct or conflict with implementation of the AQMP in the context of SCAQMD rule requirements. Therefore, the proposed project would result in a less-than-significant construction impact related to air quality violations.

Considering the second criterion related to assumptions utilized in the AQMP emissions inventory and forecast, construction activity would not affect forecasted growth assumptions for the City or the Los Angeles County portion of the SCAB. Construction contractors would be hired locally, and it is reasonably assumed that construction crews would be sourced from the local workforce. Construction of the proposed project would not involve the relocation of workers and would not result in increases in population, housing, or employment within the City or Los Angeles County. The AQMP accounts for emissions from the construction industry, and construction of the proposed project would not render the assumptions used to estimate emissions inaccurate or invalid. Therefore, the proposed project would result in a less-than-significant impact in the context of AQMP assumptions during construction.

TABLE 6: ESTIMATED DAILY EMISSIONS – OPEN TRENCH CONSTRUCTION (SINGLE SITE)

Phase and Source Location	Daily Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
SITE PREPARATION						
On-Site Emissions	0.3	2.6	3.9	<0.1	1.2	0.2
Off-Site Emissions	0.1	2.3	2.6	<0.1	1.0	0.3
Total	0.4	4.9	6.5	<0.1	2.2	0.5
EXCAVATION AND SHORING						
On-Site Emissions	0.2	2.4	3.9	<0.1	0.1	0.1
Off-Site Emissions	0.2	3.8	3.2	<0.1	1.4	0.4
Total	0.4	6.2	7.1	<0.1	1.5	0.5
PIPE INSTALLATION						
On-Site Emissions	0.8	6.7	7.9	<0.1	0.3	0.2
Off-Site Emissions	0.1	0.4	1.9	<0.1	0.5	0.2
Total	0.9	7.1	9.8	<0.1	0.8	0.4
BACKFILL						
On-Site Emissions	0.2	2.4	3.9	<0.1	0.1	0.1
Off-Site Emissions	0.2	3.8	3.2	<0.1	1.4	0.4
Total	0.4	6.2	7.1	<0.1	1.5	0.5
ROADWAY RESTORATION						
On-Site Emissions	0.9	3.9	5.6	<0.1	0.1	0.1
Off-Site Emissions	0.1	0.7	2.0	<0.1	0.7	0.3
Total	1.0	4.6	7.6	<0.1	0.8	0.4
REGIONAL IMPACT ANALYSIS						
Maximum Daily Emissions	1.0	7.1	9.8	<0.1	2.1	0.5
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No
LOCALIZED IMPACT ANALYSIS						
Maximum Daily Emissions	-	6.7	7.9	-	1.2	0.2
Localized Significance Threshold	-	103	426	-	4	3
Exceed Threshold?	-	No	No	-	No	No
Note: Emissions modeling files can be found in the Appendix.						
SOURCE: TAHA, 2025.						

TABLE 7: ESTIMATED DAILY EMISSIONS – JACK & BORE CONSTRUCTION (SINGLE SITE)

Phase and Source Location	Daily Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
SITE PREPARATION						
On-Site Emissions	0.6	5.0	8.5	<0.1	1.0	0.2
Off-Site Emissions	0.2	1.2	2.2	<0.1	0.7	0.2
Total	0.8	6.2	10.7	<0.1	1.6	0.4
EXCAVATION AND SHORING						
On-Site Emissions	1.2	10.2	15.6	<0.1	0.7	0.4
Off-Site Emissions	0.1	1.2	2.1	<0.1	0.7	0.2
Total	1.4	11.4	17.8	<0.1	1.4	0.6
PIPE INSTALLATION						
On-Site Emissions	1.1	11.2	13.2	<0.1	0.3	0.2
Off-Site Emissions	0.1	0.4	1.8	<0.1	0.5	0.1
Total	1.2	11.6	15.0	<0.1	0.7	0.3
BACKFILL						
On-Site Emissions	1.0	8.3	12.4	<0.1	0.7	0.3
Off-Site Emissions	0.1	1.2	2.1	<0.1	0.7	0.2
Total	1.1	9.5	14.6	<0.1	1.3	0.5
ROADWAY RESTORATION						
On-Site Emissions	0.6	4.8	7.6	<0.1	0.5	0.2
Off-Site Emissions	0.1	1.0	2.1	<0.1	0.6	0.2
Total	0.7	5.8	9.6	<0.1	1.2	0.4
REGIONAL IMPACT ANALYSIS						
Maximum Daily Emissions	1.4	11.6	17.8	<0.1	1.6	0.6
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No
LOCALIZED IMPACT ANALYSIS						
Maximum Daily Emissions	-	11.2	15.6	-	1.0	0.4
Localized Significance Threshold	-	103	426	-	4	3
Exceed Threshold?	-	No	No	-	No	No

Note: Emissions modeling files can be found in the **Appendix**.
SOURCE: TAHA, 2025.

TABLE 8: ESTIMATED DAILY EMISSIONS – MULTIPLE CONCURRENT CONSTRUCTION CREWS						
Phase and Site Type	Daily Emissions (lbs/day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
REGIONAL IMPACT ANALYSIS						
2 x Open Trench Sites	2.1	14.2	19.5	<0.1	4.3	1.0
1 x Pipe-Jacking Site	1.4	11.6	17.8	<0.1	1.6	0.6
Total Regional Emissions	3.4	25.8	37.3	0.1	5.9	1.6
Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No
LOCALIZED IMPACT ANALYSIS						
2 x Open Trench Sites	-	13.4	15.8	-	2.4	0.5
1 x Pipe-Jacking Site	-	11.2	15.6	-	1.0	0.4
Total Localized Emissions	-	24.6	31.5	-	3.4	0.9
Localized Significance Threshold	-	103	426	-	4	3
Exceed Threshold?	-	No	No	-	No	No
Note: Emissions modeling files can be found in the Appendix . SOURCE: TAHA, 2025.						

Operations

The potential to interfere with the attainment of State and federal air quality standards is related to permanent sources of emissions from the proposed project. The entire GTL would be located underground and would not be visible during operation. Future operation of the proposed project would not introduce a new substantial stationary source of air pollutant emissions that could potentially cause air quality violations directly, and the nature of the site would not materially change from existing conditions in regard to sources of air pollutant emissions. It is anticipated that occasionally, personnel would access the proposed facilities for scheduled maintenance and emergency repair. However, maintenance activities would be minimal and would be similar to those that occur under existing conditions. Therefore, operation of the proposed project would result in a less-than-significant impact related to the causation or contribution to the frequency of air quality violations within the SCAB region.

With regards to the AQMP growth projections, operation of the proposed project would not result in an increase in housing and would not generate new employment opportunities. Proposed project operations would not result directly or indirectly in an increase in regional vehicle miles traveled. Therefore, the proposed project would result in a less-than-significant operational impact related to regional growth projections accounted for in the AQMP.

- b) Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? (Less-Than-Significant Impact)***

Construction

The SCAB is designated as nonattainment of the CAAQS and/or NAAQS for O₃, PM₁₀, and PM_{2.5}. Therefore, there is an ongoing cumulative regional impact associated with these air pollutants. As discussed above, the SCAQMD relies on the mass daily thresholds as a screening tool for evaluating potential cumulative impacts. Projects with daily emissions that exceed applicable SCAQMD thresholds during construction or operation would be considered potentially significant on both the project and cumulative scales. Conversely, the SCAQMD advises that projects with maximum daily emissions remaining below the project-specific mass daily thresholds would also not be considered cumulatively significant even with the ongoing cumulative condition related to the nonattainment

designations. As shown in **Table 8**, construction of the proposed project would not produce daily emissions of particulate matter or O₃ precursors in excess of the applicable SCAQMD thresholds. Therefore, the proposed project would result in a less-than-significant construction impact related to cumulatively considerable increases of nonattainment pollutants or their atmospheric precursors.

Operations

Following the completion of construction activities, all major components of the proposed project would be located underground and would not generate emissions of air pollutants. Implementation of the proposed project would not introduce any land use developments or LADWP facilities that would generate new vehicle trips or install new stationary sources of emissions. Therefore, the proposed project would result in a less-than-significant operational impact related to cumulatively considerable increases of nonattainment pollutants or their atmospheric precursors.

c) Would the proposed project expose sensitive receptors to substantial pollutant concentrations? (Less-Than-Significant Impact with Mitigation Incorporated)

Construction

The sensitive receptors near the project site may be exposed to pollutant concentrations from emissions sources involved in construction activities. The SCAQMD established its LST methodology to determine the likelihood of substantial criteria pollutant concentrations reaching sensitive receptor locations. Mobile source emissions on the roadway network are spread across long distances and do not directly affect receptors in close proximity to the project site. The LST methodology involves screening values for daily emissions of NO_x, CO, PM₁₀, and PM_{2.5} that are generated exclusively by sources located on project sites. The LST values were determined using emissions modeling based on ambient air quality measured throughout the SCAB. If maximum daily emissions remain below the LST values during construction activities, it is highly unlikely that air pollutant concentrations in ambient air would reach substantial levels sufficient to create public health concerns for sensitive receptors. As shown in **Table 8**, maximum daily emissions of criteria pollutants and O₃ precursors would not exceed any applicable LST value. Therefore, construction of the proposed project would result in a less-than-significant impact related to the exposure of sensitive receptors to substantial concentrations of criteria pollutants.

With regards to TAC emissions, off-road equipment exhaust would contain diesel particulate matter, which is the most prevalent air toxic in the greater Los Angeles region. However, each individual piece of equipment would only be in operation for a portion of the workdays. Carcinogenic risks are typically assessed on timescales of several years to multiple decades, as the risk accumulates over extended periods of exposure. Given that construction activities would mainly be occurring during the daytime when the atmospheric inversion layer is at its highest and the greatest amount of pollutant dispersion occurs, there is little potential for TAC concentrations to reach levels that would be hazardous for nearby sensitive receptors. Construction of the proposed project would not result in exposure of sensitive receptors to substantial concentrations of air pollution. Therefore, construction of the proposed project would result in a less-than-significant impact related to TAC emissions.

Operations

Operation of the proposed project would not introduce a new substantial source of criteria pollutants, O₃ precursors, or TAC emissions to the project area. There would be no potential for sensitive receptors located along the project corridor to be exposed to substantial pollutant concentrations resulting from sources associated with the proposed project. Therefore, future operation of the proposed project would result in a less-than-significant impact related to substantial pollutant concentrations at sensitive receptor locations.

d) Would the proposed project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (Less-Than-Significant Impact)

Construction

The only source of potentially impactful construction emissions other than criteria pollutants, O₃ precursors, and TACs would be emissions leading to odors. Potential sources that may produce objectionable odors during construction activities include equipment exhaust, application of architectural sealants or coatings, and other interior and exterior finishes. Odors from these sources would be localized and generally confined to the immediate area surrounding the proposed project site, would be temporary in nature, and would not persist beyond the termination of construction activities. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. In addition, as construction-related emissions dissipate away from the construction area, the odors associated with these emissions would also decrease and would be quickly diluted. Construction of the proposed project would comply with the provisions of SCAQMD Rule 401 and Rule 403 to prevent the occurrence of visible dust plumes. Therefore, construction impacts related to the emissions of odors and other potential nuisance conditions would be less-than-significant.

Operations

According to the SCAQMD *CEQA Air Quality Handbook*, land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The proposed project would not include any land uses typically associated with odor impacts. Operations would not materially change from existing conditions. Therefore, operation of the proposed project would result in no impact related to the emissions of odors and other potential nuisance conditions would occur.

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Granada Trunk Line (Open Trench) Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Granada Trunk Line (Open Trench)
Construction Start Date	7/3/2028
Lead Agency	LADWP
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	0.60
Location	34.2755301724864, -118.54776201979837
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3727
EDFZ	17
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.30

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
Road Widening	4.51	Mile	4.37	0.00	0.00	—	—	Area/length for total open trench.

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-9	Use Dust Suppressants

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	1.17	1.04	7.11	9.76	0.03	0.25	2.04	2.13	0.23	0.41	0.50	—	4,196	4,196	0.18	0.52	7.91	4,364
Mit.	1.17	1.04	7.11	9.76	0.03	0.25	2.04	2.13	0.23	0.41	0.50	—	4,196	4,196	0.18	0.52	7.91	4,364
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.08	0.10	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	42.8	42.8	< 0.005	< 0.005	0.03	44.1
Mit.	0.01	0.01	0.08	0.10	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	42.8	42.8	< 0.005	< 0.005	0.03	44.1
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.08	7.08	< 0.005	< 0.005	0.01	7.30
Mit.	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.08	7.08	< 0.005	< 0.005	0.01	7.30
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	55.0	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	No	—	—	—	—	—	—	—	Yes
Mit.	—	No	No	No	No	—	—	No	—	No	—	—	—	—	—	—	—	Yes
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	150	—	—	150	—	55.0	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	No	—	—	—	—	—	—	—	Yes
Mit.	—	No	No	No	No	—	—	No	—	No	—	—	—	—	—	—	—	Yes
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	No
Mit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	No

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.17	1.04	7.11	9.76	0.03	0.25	2.04	2.13	0.23	0.41	0.50	—	4,196	4,196	0.18	0.52	7.91	4,364
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2028	0.01	0.01	0.08	0.10	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	42.8	42.8	< 0.005	< 0.005	0.03	44.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.08	7.08	< 0.005	< 0.005	0.01	7.30

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.17	1.04	7.11	9.76	0.03	0.25	2.04	2.13	0.23	0.41	0.50	—	4,196	4,196	0.18	0.52	7.91	4,364
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.01	0.01	0.08	0.10	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	42.8	42.8	< 0.005	< 0.005	0.03	44.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.08	7.08	< 0.005	< 0.005	0.01	7.30

3. Construction Emissions Details

3.1. Demo/Site Prep (2028) - 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 Equipm	0.36	0.30	2.57	3.87	0.01	0.07	—	0.07	0.07	—	0.07	—	546	546	0.02	< 0.005	—	548
Demolition	—	—	—	—	—	—	1.11	1.11	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.50
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.25	0.25	< 0.005	< 0.005	—	0.25
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624

Hauling	0.09	0.02	1.53	0.61	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,304	1,304	0.07	0.21	2.64	1,370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	< 0.005	3.75
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.62

3.2. Demo/Site Prep (2028) - 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	0.36	0.30	2.57	3.87	0.01	0.07	—	0.07	0.07	—	0.07	—	546	546	0.02	< 0.005	—	548
Demolition	—	—	—	—	—	—	1.11	1.11	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.50
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.25	0.25	< 0.005	< 0.005	—	0.25
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.09	0.02	1.53	0.61	0.01	0.02	0.37	0.39	0.02	0.10	0.12	—	1,304	1,304	0.07	0.21	2.64	1,370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.57	3.57	< 0.005	< 0.005	< 0.005	3.75

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.62

3.3. Excavation & Shoring (2028) - 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	0.28	0.23	2.36	3.88	0.01	0.07	—	0.07	0.07	—	0.07	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.63	1.63	< 0.005	< 0.005	—	1.64
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.18	0.04	3.06	1.22	0.02	0.04	0.74	0.78	0.04	0.20	0.24	—	2,607	2,607	0.13	0.42	5.27	2,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.14	7.14	< 0.005	< 0.005	0.01	7.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.24

3.4. Excavation & Shoring (2028) - 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	0.28	0.23	2.36	3.88	0.01	0.07	—	0.07	0.07	—	0.07	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.63	1.63	< 0.005	< 0.005	—	1.64
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.18	0.04	3.06	1.22	0.02	0.04	0.74	0.78	0.04	0.20	0.24	—	2,607	2,607	0.13	0.42	5.27	2,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.14	7.14	< 0.005	< 0.005	0.01	7.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.24

3.5. Pipe Installation (2028) - 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	0.92	0.77	6.69	7.92	0.02	0.25	—	0.25	0.23	—	0.23	—	1,965	1,965	0.08	0.02	—	1,972
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	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.38	5.38	< 0.005	< 0.005	—	5.40
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	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.89	0.89	< 0.005	< 0.005	—	0.89
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	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.02	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312

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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
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. Pipe Installation (2028) - 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	0.92	0.77	6.69	7.92	0.02	0.25	—	0.25	0.23	—	0.23	—	1,965	1,965	0.08	0.02	—	1,972
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	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.38	5.38	< 0.005	< 0.005	—	5.40
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	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.89	0.89	< 0.005	< 0.005	—	0.89
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	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.02	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
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. Work Site Restoration (2028) - 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 Equipm ent	0.55	0.46	3.86	5.58	0.01	0.12	—	0.12	0.11	—	0.11	—	801	801	0.03	0.01	—	804
Architect ural Coating s	0.46	0.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.20	2.20	< 0.005	< 0.005	—	2.20
Architect ural Coating s	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36

Architect ural	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
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. Work Site Restoration (2028) - 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	0.55	0.46	3.86	5.58	0.01	0.12	—	0.12	0.11	—	0.11	—	801	801	0.03	0.01	—	804
Architectural Coatings	0.46	0.46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.20	2.20	< 0.005	< 0.005	—	2.20
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
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. Backfill (2028) - 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	0.28	0.23	2.36	3.88	0.01	0.07	—	0.07	0.07	—	0.07	—	596	596	0.02	< 0.005	—	598

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.63	1.63	< 0.005	< 0.005	—	1.64
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397

Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.18	0.04	3.06	1.22	0.02	0.04	0.74	0.78	0.04	0.20	0.24	—	2,607	2,607	0.13	0.42	5.27	2,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.14	7.14	< 0.005	< 0.005	0.01	7.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.24

3.10. Backfill (2028) - 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 Equipm ent	0.28	0.23	2.36	3.88	0.01	0.07	—	0.07	0.07	—	0.07	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.63	1.63	< 0.005	< 0.005	—	1.64
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipm ent	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.27	0.27	< 0.005	< 0.005	—	0.27
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.04	0.01	0.63	0.30	< 0.005	< 0.005	0.17	0.18	< 0.005	0.05	0.05	—	597	597	0.02	0.08	1.51	624
Hauling	0.18	0.04	3.06	1.22	0.02	0.04	0.74	0.78	0.04	0.20	0.24	—	2,607	2,607	0.13	0.42	5.27	2,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.14	7.14	< 0.005	< 0.005	0.01	7.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.18	1.18	< 0.005	< 0.005	< 0.005	1.24

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demo/Site Prep	Linear, Grubbing & Land Clearing	7/3/2028	7/3/2028	5.00	1.00	—
Excavation & Shoring	Linear, Grading & Excavation	7/4/2028	7/4/2028	5.00	1.00	—
Pipe Installation	Linear, Drainage, Utilities, & Sub-Grade	7/5/2028	7/5/2028	5.00	1.00	—
Work Site Restoration	Linear, Paving	7/7/2028	7/7/2028	5.00	1.00	—
Backfill	Linear, Trenching	7/6/2028	7/6/2028	5.00	1.00	—

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
Demo/Site Prep	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
Demo/Site Prep	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Demo/Site Prep	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Demo/Site Prep	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Demo/Site Prep	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Excavation & Shoring	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
Excavation & Shoring	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Excavation & Shoring	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
Excavation & Shoring	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Excavation & Shoring	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Pipe Installation	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Pipe Installation	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Pipe Installation	Welders	Diesel	Average	1.00	6.00	46.0	0.45

Pipe Installation	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Pipe Installation	Cranes	Diesel	Average	2.00	6.00	367	0.29
Work Site Restoration	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Work Site Restoration	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Work Site Restoration	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Work Site Restoration	Rollers	Diesel	Average	1.00	4.00	36.0	0.38
Work Site Restoration	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Work Site Restoration	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Work Site Restoration	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Backfill	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
Backfill	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Backfill	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
Backfill	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Backfill	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demo/Site Prep	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
Demo/Site Prep	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Demo/Site Prep	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Demo/Site Prep	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Demo/Site Prep	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Excavation & Shoring	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
Excavation & Shoring	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Excavation & Shoring	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
Excavation & Shoring	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20

Excavation & Shoring	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Pipe Installation	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Pipe Installation	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Pipe Installation	Welders	Diesel	Average	1.00	6.00	46.0	0.45
Pipe Installation	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Pipe Installation	Cranes	Diesel	Average	2.00	6.00	367	0.29
Work Site Restoration	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Work Site Restoration	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Work Site Restoration	Sweepers/Scrubbers	Diesel	Average	1.00	4.00	36.0	0.46
Work Site Restoration	Rollers	Diesel	Average	1.00	4.00	36.0	0.38
Work Site Restoration	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Work Site Restoration	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74
Work Site Restoration	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Backfill	Excavators	Diesel	Average	1.00	5.00	36.0	0.38
Backfill	Tractors/Loaders/Back hoes	Diesel	Average	1.00	4.00	84.0	0.37
Backfill	Skid Steer Loaders	Diesel	Average	1.00	6.00	71.0	0.37
Backfill	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Backfill	Generator Sets	Diesel	Average	1.00	2.00	14.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demo/Site Prep	—	—	—	—
Demo/Site Prep	Worker	30.0	18.5	LDA,LDT1,LDT2
Demo/Site Prep	Vendor	20.0	10.2	HHDT,MHDT
Demo/Site Prep	Hauling	20.0	20.0	HHDT

Demo/Site Prep	Onsite truck	1.00	1.00	HHDT
Excavation & Shoring	—	—	—	—
Excavation & Shoring	Worker	30.0	18.5	LDA,LDT1,LDT2
Excavation & Shoring	Vendor	20.0	10.2	HHDT,MHDT
Excavation & Shoring	Hauling	40.0	20.0	HHDT
Excavation & Shoring	Onsite truck	1.00	1.00	HHDT
Pipe Installation	—	—	—	—
Pipe Installation	Worker	30.0	18.5	LDA,LDT1,LDT2
Pipe Installation	Vendor	10.0	10.2	HHDT,MHDT
Pipe Installation	Hauling	0.00	20.0	HHDT
Pipe Installation	Onsite truck	0.00	0.00	HHDT
Work Site Restoration	—	—	—	—
Work Site Restoration	Worker	30.0	18.5	LDA,LDT1,LDT2
Work Site Restoration	Vendor	20.0	10.2	HHDT,MHDT
Work Site Restoration	Hauling	0.00	20.0	HHDT
Work Site Restoration	Onsite truck	1.00	1.00	HHDT
Backfill	—	—	—	—
Backfill	Worker	30.0	18.5	LDA,LDT1,LDT2
Backfill	Vendor	20.0	10.2	HHDT,MHDT
Backfill	Hauling	40.0	20.0	HHDT
Backfill	Onsite truck	1.00	1.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demo/Site Prep	—	—	—	—
Demo/Site Prep	Worker	30.0	18.5	LDA,LDT1,LDT2
Demo/Site Prep	Vendor	20.0	10.2	HHDT,MHDT
Demo/Site Prep	Hauling	20.0	20.0	HHDT

Demo/Site Prep	Onsite truck	1.00	1.00	HHDT
Excavation & Shoring	—	—	—	—
Excavation & Shoring	Worker	30.0	18.5	LDA,LDT1,LDT2
Excavation & Shoring	Vendor	20.0	10.2	HHDT,MHDT
Excavation & Shoring	Hauling	40.0	20.0	HHDT
Excavation & Shoring	Onsite truck	1.00	1.00	HHDT
Pipe Installation	—	—	—	—
Pipe Installation	Worker	30.0	18.5	LDA,LDT1,LDT2
Pipe Installation	Vendor	10.0	10.2	HHDT,MHDT
Pipe Installation	Hauling	0.00	20.0	HHDT
Pipe Installation	Onsite truck	0.00	0.00	HHDT
Work Site Restoration	—	—	—	—
Work Site Restoration	Worker	30.0	18.5	LDA,LDT1,LDT2
Work Site Restoration	Vendor	20.0	10.2	HHDT,MHDT
Work Site Restoration	Hauling	0.00	20.0	HHDT
Work Site Restoration	Onsite truck	1.00	1.00	HHDT
Backfill	—	—	—	—
Backfill	Worker	30.0	18.5	LDA,LDT1,LDT2
Backfill	Vendor	20.0	10.2	HHDT,MHDT
Backfill	Hauling	40.0	20.0	HHDT
Backfill	Onsite truck	1.00	1.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

Sweep paved roads once per month	9%	9%
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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)
Work Site Restoration	0.00	0.00	0.00	0.00	100

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 (Ton of Debris)	Acres Paved (acres)
Demo/Site Prep	0.00	0.00	0.00	80.0	—
Excavation & Shoring	0.00	120	0.00	0.00	—
Backfill	120	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Widening	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	690	0.05	0.01

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	17.4	annual days of extreme heat
Extreme Precipitation	6.85	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	10.0	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	2	2	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	2	2	2
Wildfire	1	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	2	2	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	2	2	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	2	2	2
Wildfire	1	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	2	2	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	93.6
AQ-PM	54.1
AQ-DPM	58.0
Drinking Water	83.1
Lead Risk Housing	22.1
Pesticides	0.00
Toxic Releases	23.3
Traffic	84.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	45.7
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	23.4
Cardio-vascular	69.6
Low Birth Weights	17.2
Socioeconomic Factor Indicators	—
Education	32.9
Housing	39.7
Linguistic	71.7
Poverty	38.6
Unemployment	63.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	74.8235596
Employed	71.06377518
Median HI	80.27717182
Education	—
Bachelor's or higher	87.56576415
High school enrollment	100
Preschool enrollment	79.96920313
Transportation	—
Auto Access	90.86359553
Active commuting	12.947517
Social	—
2-parent households	56.30694213
Voting	55.87065315
Neighborhood	—
Alcohol availability	61.54240985
Park access	81.35506224
Retail density	48.50506865
Supermarket access	51.79006801
Tree canopy	65.76414731
Housing	—
Homeownership	79.76389067
Housing habitability	90.46580264
Low-inc homeowner severe housing cost burden	23.64942897
Low-inc renter severe housing cost burden	95.34197357
Uncrowded housing	96.93314513
Health Outcomes	—

Insured adults	68.56152958
Arthritis	26.6
Asthma ER Admissions	77.7
High Blood Pressure	21.8
Cancer (excluding skin)	10.4
Asthma	94.4
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	65.3
Diagnosed Diabetes	52.6
Life Expectancy at Birth	86.0
Cognitively Disabled	82.5
Physically Disabled	71.5
Heart Attack ER Admissions	55.9
Mental Health Not Good	91.8
Chronic Kidney Disease	64.9
Obesity	88.9
Pedestrian Injuries	19.6
Physical Health Not Good	74.9
Stroke	51.7
Health Risk Behaviors	—
Binge Drinking	85.2
Current Smoker	89.7
No Leisure Time for Physical Activity	76.1
Climate Change Exposures	—
Wildfire Risk	24.6
SLR Inundation Area	0.0
Children	90.2
Elderly	23.2

English Speaking	41.6
Foreign-born	81.3
Outdoor Workers	90.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.4
Traffic Density	90.2
Traffic Access	23.0
Other Indices	—
Hardship	13.1
Other Decision Support	—
2016 Voting	37.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	39.0
Healthy Places Index Score for Project Location (b)	79.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Updated construction phases to match project details.
Construction: Off-Road Equipment	Adjusted equipment list to project needs, informed by data provided by LADWP.
Construction: Trips and VMT	Adjusted construction trips to match project needs (up to 15 workers/crew max, 20 vendor one-way trips/day, 20 haul truck round trips/day).
Construction: Dust From Material Movement	Construction would not involve equipment for grading (i.e., bulldozers, graders, scrapers).
Construction: Demolition	Conservative assumption of 250 ft length x 8 ft width x 1 ft depth (2,000 cu. ft x 1.5 expansion factor = ~115 CY x 0.7 tons/CY = ~80 tons) of demolished material per day.
Construction: On-Road Fugitive Dust	Unpaved areas would only be related to the trench. On-site water truck would travel on paved roadway surfaces.
Construction: Architectural Coatings	Re-striping of roadways.
Construction: Paving	Assume up to 500 LF of paving over 8-foot width on a single day = ~0.1 acres.

Granada Trunk Line (Jack & Bore) Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Granada Trunk Line (Jack & Bore)
Construction Start Date	7/3/2028
Lead Agency	LADWP
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.50
Precipitation (days)	0.60
Location	34.2755301724864, -118.54776201979837
County	Los Angeles-South Coast
City	Los Angeles
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	3727
EDFZ	17
Electric Utility	Los Angeles Department of Water & Power
Gas Utility	Southern California Gas
App Version	2022.1.1.30

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
Road Widening	0.50	Mile	0.10	0.00	0.00	—	—	Length/area for total jack-bore work.

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-9	Use Dust Suppressants

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.36	11.5	17.7	0.03	0.38	1.48	1.63	0.35	0.27	0.56	—	3,724	3,724	0.15	0.18	3.20	3,785
Mit.	1.36	11.5	17.7	0.03	0.38	1.16	1.32	0.35	0.24	0.52	—	3,724	3,724	0.15	0.18	3.20	3,785
% Reduced	—	—	—	—	—	21%	19%	—	11%	6%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.12	0.18	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	41.0	41.0	< 0.005	< 0.005	0.02	41.7
Mit.	0.01	0.12	0.18	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	41.0	41.0	< 0.005	< 0.005	0.02	41.7
% Reduced	—	—	—	—	—	25%	20%	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	0.02	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.79	6.79	< 0.005	< 0.005	< 0.005	6.90
Mit.	< 0.005	0.02	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.79	6.79	< 0.005	< 0.005	< 0.005	6.90
% Reduced	—	—	—	—	—	25%	20%	—	13%	6%	—	—	—	—	—	—	—

Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Mit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	—	—	150	—	—	55.0	—	—	—	—	—	—	—
Unmit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Mit.	No	No	No	No	—	—	No	—	—	No	—	—	—	—	—	—	—
Exceeds (Annual)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	No
Mit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	No

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.36	11.5	17.7	0.03	0.38	1.48	1.63	0.35	0.27	0.56	—	3,724	3,724	0.15	0.18	3.20	3,785
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2028	0.01	0.12	0.18	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	41.0	41.0	< 0.005	< 0.005	0.02	41.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	< 0.005	0.02	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.79	6.79	< 0.005	< 0.005	< 0.005	6.90

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	1.36	11.5	17.7	0.03	0.38	1.16	1.32	0.35	0.24	0.52	—	3,724	3,724	0.15	0.18	3.20	3,785
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.01	0.12	0.18	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	—	41.0	41.0	< 0.005	< 0.005	0.02	41.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	< 0.005	0.02	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.79	6.79	< 0.005	< 0.005	< 0.005	6.90

3. Construction Emissions Details

3.1. Demo/Site Prep (2028) - Unmitigated

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

Location	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	0.63	4.94	8.51	0.01	0.14	—	0.14	0.13	—	0.13	—	1,218	1,218	0.05	0.01	—	1,222

Demoliti	—	—	—	—	—	0.44	0.44	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.34	3.34	< 0.005	< 0.005	—	3.35
Demoliti on	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.55	0.55	< 0.005	< 0.005	—	0.55
Demoliti on	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.77	0.30	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	652	652	0.03	0.10	1.32	685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

3.2. Demo/Site Prep (2028) - Mitigated

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

Location	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	0.63	4.94	8.51	0.01	0.14	—	0.14	0.13	—	0.13	—	1,218	1,218	0.05	0.01	—	1,222
Demolition	—	—	—	—	—	0.44	0.44	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.34	3.34	< 0.005	< 0.005	—	3.35
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.55	0.55	< 0.005	< 0.005	—	0.55
Demolition	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.77	0.30	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	652	652	0.03	0.10	1.32	685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

3.3. Excavation & Shoring (2028) - Unmitigated

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

Location	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	1.24	10.2	15.6	0.02	0.37	—	0.37	0.34	—	0.34	—	2,326	2,326	0.09	0.02	—	2,334
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.37	6.37	< 0.005	< 0.005	—	6.39
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.06	1.06	< 0.005	< 0.005	—	1.06
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.77	0.30	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	652	652	0.03	0.10	1.32	685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

3.4. Excavation & Shoring (2028) - Mitigated

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

Location	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	1.24	10.2	15.6	0.02	0.37	—	0.37	0.34	—	0.34	—	2,326	2,326	0.09	0.02	—	2,334
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.37	6.37	< 0.005	< 0.005	—	6.39
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.06	1.06	< 0.005	< 0.005	—	1.06
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.77	0.30	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	652	652	0.03	0.10	1.32	685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

3.5. Pipe Installation (2028) - Unmitigated

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

Location	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	1.10	11.2	13.2	0.02	0.25	—	0.25	0.23	—	0.23	—	2,011	2,011	0.08	0.02	—	2,018
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.51	5.51	< 0.005	< 0.005	—	5.53
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.91	0.91	< 0.005	< 0.005	—	0.92
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

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.25	0.12	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	239	239	0.01	0.03	0.60	250
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.65	0.65	< 0.005	< 0.005	< 0.005	0.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.11
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

3.6. Pipe Installation (2028) - Mitigated

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

Location	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	1.10	11.2	13.2	0.02	0.25	—	0.25	0.23	—	0.23	—	2,011	2,011	0.08	0.02	—	2,018
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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.51	5.51	< 0.005	< 0.005	—	5.53
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.91	0.91	< 0.005	< 0.005	—	0.92
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.25	0.12	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	239	239	0.01	0.03	0.60	250
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.65	0.65	< 0.005	< 0.005	< 0.005	0.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.11	0.11	< 0.005	< 0.005	< 0.005	0.11
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

3.7. Work Site Restoration (2028) - Unmitigated

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

Location	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	0.55	4.79	7.54	0.01	0.14	—	0.14	0.13	—	0.13	—	1,095	1,095	0.04	0.01	—	1,099
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.00	3.00	< 0.005	< 0.005	—	3.01
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.50
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.61	0.24	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	521	521	0.03	0.08	1.05	548

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.8. Work Site Restoration (2028) - Mitigated

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

Location	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	0.55	4.79	7.54	0.01	0.14	—	0.14	0.13	—	0.13	—	1,095	1,095	0.04	0.01	—	1,099
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.00	3.00	< 0.005	< 0.005	—	3.01

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.50
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.61	0.24	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	521	521	0.03	0.08	1.05	548
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.50
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.9. Backfill (2028) - Unmitigated

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

Location	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	1.02	8.32	12.4	0.02	0.28	—	0.28	0.26	—	0.26	—	2,253	2,253	0.09	0.02	—	2,261
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.37	0.37	< 0.005	0.04	0.04	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.17	6.17	< 0.005	< 0.005	—	6.19
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.02	1.02	< 0.005	< 0.005	—	1.03
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.77	0.30	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	652	652	0.03	0.10	1.32	685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

3.10. Backfill (2028) - Mitigated

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

Location	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	1.02	8.32	12.4	0.02	0.28	—	0.28	0.26	—	0.26	—	2,253	2,253	0.09	0.02	—	2,261
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	0.02	0.01	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	4.80	4.80	< 0.005	< 0.005	0.01	5.06

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.17	6.17	< 0.005	< 0.005	—	6.19
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.02	1.02	< 0.005	< 0.005	—	1.03
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.10	1.69	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	392	392	< 0.005	0.01	1.12	397
Vendor	0.01	0.31	0.15	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	299	299	0.01	0.04	0.76	312
Hauling	0.01	0.77	0.30	< 0.005	0.01	0.19	0.19	0.01	0.05	0.06	—	652	652	0.03	0.10	1.32	685
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.05

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.85
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.87
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.17	0.17	< 0.005	< 0.005	< 0.005	0.17
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.14	0.14	< 0.005	< 0.005	< 0.005	0.14
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demo/Site Prep	Linear, Grubbing & Land Clearing	7/3/2028	7/3/2028	5.00	1.00	Demolish & remove road surface.

Excavation & Shoring	Linear, Grading & Excavation	7/4/2028	7/4/2028	5.00	1.00	Excavate jacking pits.
Pipe Installation	Linear, Drainage, Utilities, & Sub-Grade	7/5/2028	7/5/2028	5.00	1.00	Pipe-Jacking.
Work Site Restoration	Linear, Paving	7/7/2028	7/7/2028	5.00	1.00	Resurface road.
Backfill	Linear, Trenching	7/6/2028	7/6/2028	5.00	1.00	Backfill jacking pits.

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
Demo/Site Prep	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demo/Site Prep	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Demo/Site Prep	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Demo/Site Prep	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Demo/Site Prep	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Excavation & Shoring	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Excavation & Shoring	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Excavation & Shoring	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Excavation & Shoring	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Excavation & Shoring	Cranes	Diesel	Average	2.00	6.00	150	0.29
Excavation & Shoring	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Excavation & Shoring	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Excavation & Shoring	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Pipe Installation	Generator Sets	Diesel	Average	1.00	8.00	200	0.74
Pipe Installation	Pumps	Electric	Average	1.00	8.00	28.0	0.74
Pipe Installation	Bore/Drill Rigs	Electric	Average	1.00	8.00	83.0	0.50
Pipe Installation	Pressure Washers	Diesel	Average	1.00	3.00	14.0	0.30

Pipe Installation	Cranes	Diesel	Average	1.00	6.00	150	0.29
Pipe Installation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Work Site Restoration	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Work Site Restoration	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Work Site Restoration	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Work Site Restoration	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Work Site Restoration	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Work Site Restoration	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Backfill	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Backfill	Cranes	Diesel	Average	1.00	6.00	367	0.29
Backfill	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Backfill	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Backfill	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Backfill	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Backfill	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demo/Site Prep	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demo/Site Prep	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Demo/Site Prep	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Demo/Site Prep	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Demo/Site Prep	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Excavation & Shoring	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Excavation & Shoring	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36

Excavation & Shoring	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Excavation & Shoring	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Excavation & Shoring	Cranes	Diesel	Average	2.00	6.00	150	0.29
Excavation & Shoring	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Excavation & Shoring	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Excavation & Shoring	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Pipe Installation	Generator Sets	Diesel	Average	1.00	8.00	200	0.74
Pipe Installation	Pumps	Electric	Average	1.00	8.00	28.0	0.74
Pipe Installation	Bore/Drill Rigs	Electric	Average	1.00	8.00	83.0	0.50
Pipe Installation	Pressure Washers	Diesel	Average	1.00	3.00	14.0	0.30
Pipe Installation	Cranes	Diesel	Average	1.00	6.00	150	0.29
Pipe Installation	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Work Site Restoration	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Work Site Restoration	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Work Site Restoration	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Work Site Restoration	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Work Site Restoration	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Work Site Restoration	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Backfill	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Backfill	Cranes	Diesel	Average	1.00	6.00	367	0.29
Backfill	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Backfill	Tractors/Loaders/Back hoes	Diesel	Average	1.00	8.00	84.0	0.37
Backfill	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Backfill	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Backfill	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demo/Site Prep	—	—	—	—
Demo/Site Prep	Worker	30.0	18.5	LDA,LDT1,LDT2
Demo/Site Prep	Vendor	10.0	10.2	HHDT,MHDT
Demo/Site Prep	Hauling	10.0	20.0	HHDT
Demo/Site Prep	Onsite truck	1.00	1.00	HHDT
Excavation & Shoring	—	—	—	—
Excavation & Shoring	Worker	30.0	18.5	LDA,LDT1,LDT2
Excavation & Shoring	Vendor	10.0	10.2	HHDT,MHDT
Excavation & Shoring	Hauling	10.0	20.0	HHDT
Excavation & Shoring	Onsite truck	1.00	1.00	HHDT
Pipe Installation	—	—	—	—
Pipe Installation	Worker	30.0	18.5	LDA,LDT1,LDT2
Pipe Installation	Vendor	8.00	10.2	HHDT,MHDT
Pipe Installation	Hauling	0.00	20.0	HHDT
Pipe Installation	Onsite truck	0.00	0.00	HHDT
Work Site Restoration	—	—	—	—
Work Site Restoration	Worker	30.0	18.5	LDA,LDT1,LDT2
Work Site Restoration	Vendor	10.0	10.2	HHDT,MHDT
Work Site Restoration	Hauling	8.00	20.0	HHDT
Work Site Restoration	Onsite truck	1.00	1.00	HHDT
Backfill	—	—	—	—
Backfill	Worker	30.0	18.5	LDA,LDT1,LDT2
Backfill	Vendor	10.0	10.2	HHDT,MHDT
Backfill	Hauling	10.0	20.0	HHDT

Backfill	Onsite truck	1.00	1.00	HHDT
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5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demo/Site Prep	—	—	—	—
Demo/Site Prep	Worker	30.0	18.5	LDA,LDT1,LDT2
Demo/Site Prep	Vendor	10.0	10.2	HHDT,MHDT
Demo/Site Prep	Hauling	10.0	20.0	HHDT
Demo/Site Prep	Onsite truck	1.00	1.00	HHDT
Excavation & Shoring	—	—	—	—
Excavation & Shoring	Worker	30.0	18.5	LDA,LDT1,LDT2
Excavation & Shoring	Vendor	10.0	10.2	HHDT,MHDT
Excavation & Shoring	Hauling	10.0	20.0	HHDT
Excavation & Shoring	Onsite truck	1.00	1.00	HHDT
Pipe Installation	—	—	—	—
Pipe Installation	Worker	30.0	18.5	LDA,LDT1,LDT2
Pipe Installation	Vendor	8.00	10.2	HHDT,MHDT
Pipe Installation	Hauling	0.00	20.0	HHDT
Pipe Installation	Onsite truck	0.00	0.00	HHDT
Work Site Restoration	—	—	—	—
Work Site Restoration	Worker	30.0	18.5	LDA,LDT1,LDT2
Work Site Restoration	Vendor	10.0	10.2	HHDT,MHDT
Work Site Restoration	Hauling	8.00	20.0	HHDT
Work Site Restoration	Onsite truck	1.00	1.00	HHDT
Backfill	—	—	—	—
Backfill	Worker	30.0	18.5	LDA,LDT1,LDT2
Backfill	Vendor	10.0	10.2	HHDT,MHDT
Backfill	Hauling	10.0	20.0	HHDT

Backfill	Onsite truck	1.00	1.00	HHDT
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5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
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)
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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 (Ton of Debris)	Acres Paved (acres)
Demo/Site Prep	0.00	0.00	0.00	32.0	—
Excavation & Shoring	0.00	40.0	0.00	0.00	—
Backfill	40.0	0.00	0.00	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%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Widening	0.05	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	371	690	0.05	0.01

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	17.4	annual days of extreme heat
Extreme Precipitation	6.85	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	10.0	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	2	2	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	2	2	2
Wildfire	1	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	2	2	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	2	2	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	2	2	2
Wildfire	1	2	2	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	5	2	2	4

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	93.6
AQ-PM	54.1
AQ-DPM	58.0
Drinking Water	83.1
Lead Risk Housing	22.1
Pesticides	0.00
Toxic Releases	23.3
Traffic	84.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	45.7
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	23.4
Cardio-vascular	69.6
Low Birth Weights	17.2
Socioeconomic Factor Indicators	—

Education	32.9
Housing	39.7
Linguistic	71.7
Poverty	38.6
Unemployment	63.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	74.8235596
Employed	71.06377518
Median HI	80.27717182
Education	—
Bachelor's or higher	87.56576415
High school enrollment	100
Preschool enrollment	79.96920313
Transportation	—
Auto Access	90.86359553
Active commuting	12.947517
Social	—
2-parent households	56.30694213
Voting	55.87065315
Neighborhood	—
Alcohol availability	61.54240985
Park access	81.35506224
Retail density	48.50506865
Supermarket access	51.79006801

Tree canopy	65.76414731
Housing	—
Homeownership	79.76389067
Housing habitability	90.46580264
Low-inc homeowner severe housing cost burden	23.64942897
Low-inc renter severe housing cost burden	95.34197357
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	68.56152958
Arthritis	26.6
Asthma ER Admissions	77.7
High Blood Pressure	21.8
Cancer (excluding skin)	10.4
Asthma	94.4
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	65.3
Diagnosed Diabetes	52.6
Life Expectancy at Birth	86.0
Cognitively Disabled	82.5
Physically Disabled	71.5
Heart Attack ER Admissions	55.9
Mental Health Not Good	91.8
Chronic Kidney Disease	64.9
Obesity	88.9
Pedestrian Injuries	19.6
Physical Health Not Good	74.9
Stroke	51.7
Health Risk Behaviors	—

Binge Drinking	85.2
Current Smoker	89.7
No Leisure Time for Physical Activity	76.1
Climate Change Exposures	—
Wildfire Risk	24.6
SLR Inundation Area	0.0
Children	90.2
Elderly	23.2
English Speaking	41.6
Foreign-born	81.3
Outdoor Workers	90.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.4
Traffic Density	90.2
Traffic Access	23.0
Other Indices	—
Hardship	13.1
Other Decision Support	—
2016 Voting	37.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	39.0
Healthy Places Index Score for Project Location (b)	79.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Adjusted construction phases to match PD.
Construction: Off-Road Equipment	Equipment lists informed by LADWP. For pipe installation, TBM = ~200 HP (modeled as generator for power source).
Construction: Trips and VMT	Updated construction trips to match project needs (up to 15 workers/crew max, 20 one-way vendor trips/day, 35 cy export/day)
Construction: Architectural Coatings	Added architectural coated area
Construction: Dust From Material Movement	Estimates provided by LADWP.
Construction: Demolition	At each launch site: 50 ft length x 16 ft width x 1 ft depth asphalt/concrete = 800 scf x 1.5 expansion factor = 1,200 scf / 27 = 45 CY x 0.7 tons/CY = ~32 tons/day.
Construction: Paving	Assume maximum of two pits resurfaced per day.