Air Quality Assessment
Gardner Rosecrans Avenue Project
City of Gardena, California

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LIST OF ABBREVIATED TERMS

AQMP	air quality management plan
AB	Assembly Bill
ADT	average daily traffic
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CCAA	California Clean Air Act
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
cy	cubic yards
DPM	diesel particulate matter
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
H_2S	hydrogen sulfide
Pb	Lead
LST	local significance threshold
µg/m^3	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
O_3	Ozone
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppm	parts per million
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SRA	source receptor area
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
SF	square foot
SO_{4-2}	Sulfates
SO_2	sulfur dioxide
TAC	toxic air contaminant
C_2H_3Cl	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

This report documents the results of an Air Quality Assessment completed for the Gardner Rosecrans Project (Project). The purpose of this Air Quality Assessment is to evaluate the Project's potential construction and operational emissions and determine the Project's level of impact on the environment.

1.1 Project Location and Setting

The Gardner Rosecrans Avenue Project (Project) site is in the County of Los Angeles (County), in the City of Gardena (City), approximately 9.3 miles southwest of downtown Los Angeles; see Exhibit 1: Regional Vicinity Map. The Project site is northwest of the City, approximately 0.5 mile south of the City's jurisdictional limits with the City of Hawthorne. The 5.46-acre Project site consists of two parcels (APN # 4061-028-049 and -018) located northeast of the Rosecrans Avenue at Van Ness Avenue intersection, at 2101 and 2129 Rosecrans Avenue; see Exhibit 2: Site Vicinity Map.

Regional access to the Project site is provided via the Artesia Freeway (State Route 91 (SR-91)) located to the south, the San Diego Freeway (Interstate 405 (I 405)) located to both the south and west, the Harbor Freeway (State Route 110 (SR-110)) located to the east, and the Glenn Anderson Freeway (Interstate Route 105 (I-105)), located to the north. Local access to the Project site is provided via Rosecrans Avenue to the south, South Western Avenue to the east, and Van Ness Avenue to the west. One driveway on Rosecrans Ave at the Project site's southwest corner provides vehicular access.

As depicted on Exhibit 2, the site is fully developed except an approximately 1.6-acre undeveloped area on the southeastern corner. Existing development consists of approximately 42,400 square feet (SF) of commercial uses (circa 1976) comprised of three buildings (an approximately 11,500-SF office building, an approximately 5,400-SF building ancillary to the office building, and an approximately 25,500-SF automotive repair service building), surface parking, and drive aisles. It is assumed the existing onsite land uses are fully occupied.

The Project site is designated General Commercial with a Mixed-Use Overlay[1]. The General Commercial designation provides for a wide range of larger-scale commercial uses to serve both the needs of the City and the region[2]. The Mixed-Use Overlay permits residential development on selected areas designated for commercial and industrial land uses.

1.2 Project Description

The Project proposes a mixed-use development consisting of an approximately 0.54-acre commercial lot (on the Project site's southwest corner) and an approximately 4.93-acre residential lot (encompassing the site's remainder). One approximately 5,080-SF retail building and 35 parking spaces are proposed on the commercial lot. In total, 105 three-story residential dwelling units (DU) at a gross density of 21.3 dwelling units per acre and 274 parking spaces are proposed on the residential lot; see Exhibit 3: Conceptual Site Plan. The Project proposes to remove all existing on-site improvements, including the commercial and automotive repair buildings, associated surface parking lot, and storage (approximately 42,400 SF).

[1] City of Gardena. (2006, Updated February 2013). *Gardena General Plan 2006*. Figure LU-2: 2013 General Plan Land Use Policy Map. Gardena, CA: City of Gardena.

[2] City of Gardena. (2006, Updated February 2013). *Gardena General Plan 2006*. Page LU-12. Gardena, CA: City of Gardena.

Commercial Lot

The commercial lot includes 35 parking spaces for the approximately 5,080 SF retail commercial building. Landscaping and sidewalks border the parking lot. Access to the commercial lot is provided through the site's primary entrance at Rosecrans Avenue. The retail commercial building's frontage would be east toward the commercial parking spaces. The commercial lot would include a patio with an outdoor fireplace, shade provided by metal trellises and outdoor tables and chairs. The patio space would be on the northern edge of the commercial lot facing the live-work spaces. A service walk along the western edge of the building would lead to electrical service rooms for the building.

Residential Lot

On the residential lot, 50 attached townhouse DU, 41 detached single-family (SF) garden court DU, and 14 attached live-work DU with 245 SF of workspace are proposed.

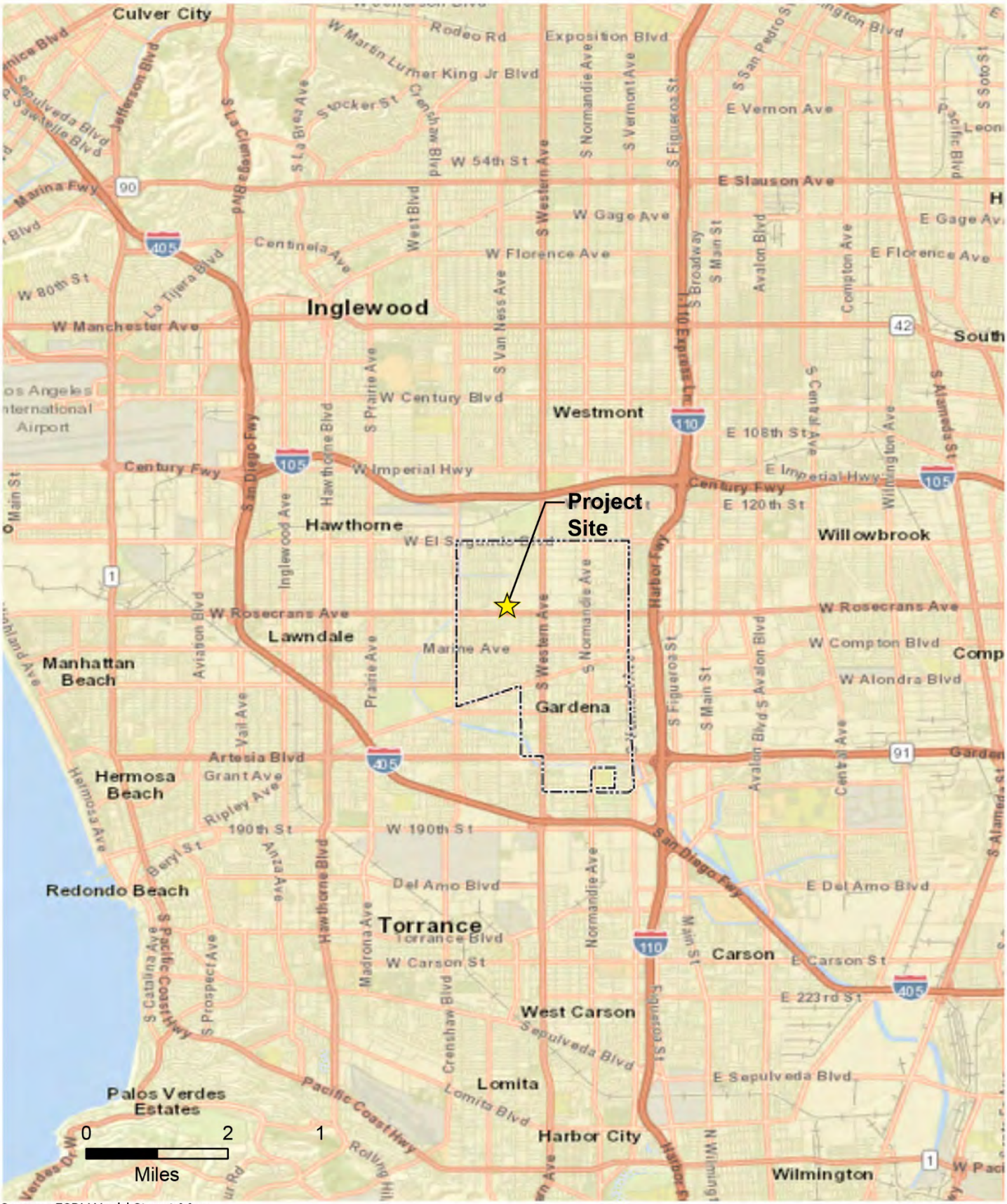
As depicted on Exhibit 3, the proposed Site Plan involves ten building clusters. Five clusters are each on the site's eastern and western portions, with an internal street separating the two areas. Four private driveways running east-west separate clusters on each portion of the site, and an additional private drive running north-south is on the southeastern portion. All residential building parking faces the private driveways, with building frontages oriented to the shared walkways within the clusters.

Project Construction and Phasing

Project construction is anticipated to begin March 2020 and end in September 2022, in the following sequence:

- Demolition,
- Site Preparation,
- Grading,
- Building Construction, and
- Paving, Architectural Coating, and Landscaping.

Grading for the proposed improvements would require cut and fill to create building pads. Grading is estimated to require approximately 3,615 cubic yards of soil import. Final grading plans would be approved by the City Engineer before Grading Permit issuance. All infrastructure (i.e., storm drain, water, wastewater, dry utilities, and street improvements) would be installed during grading.



Source: ESRI World Street Map

Gardner Rosecrans Avenue Project

Exhibit 1

Regional Vicinity Map

Source: Near Maps - Image Dated January 1, 2019

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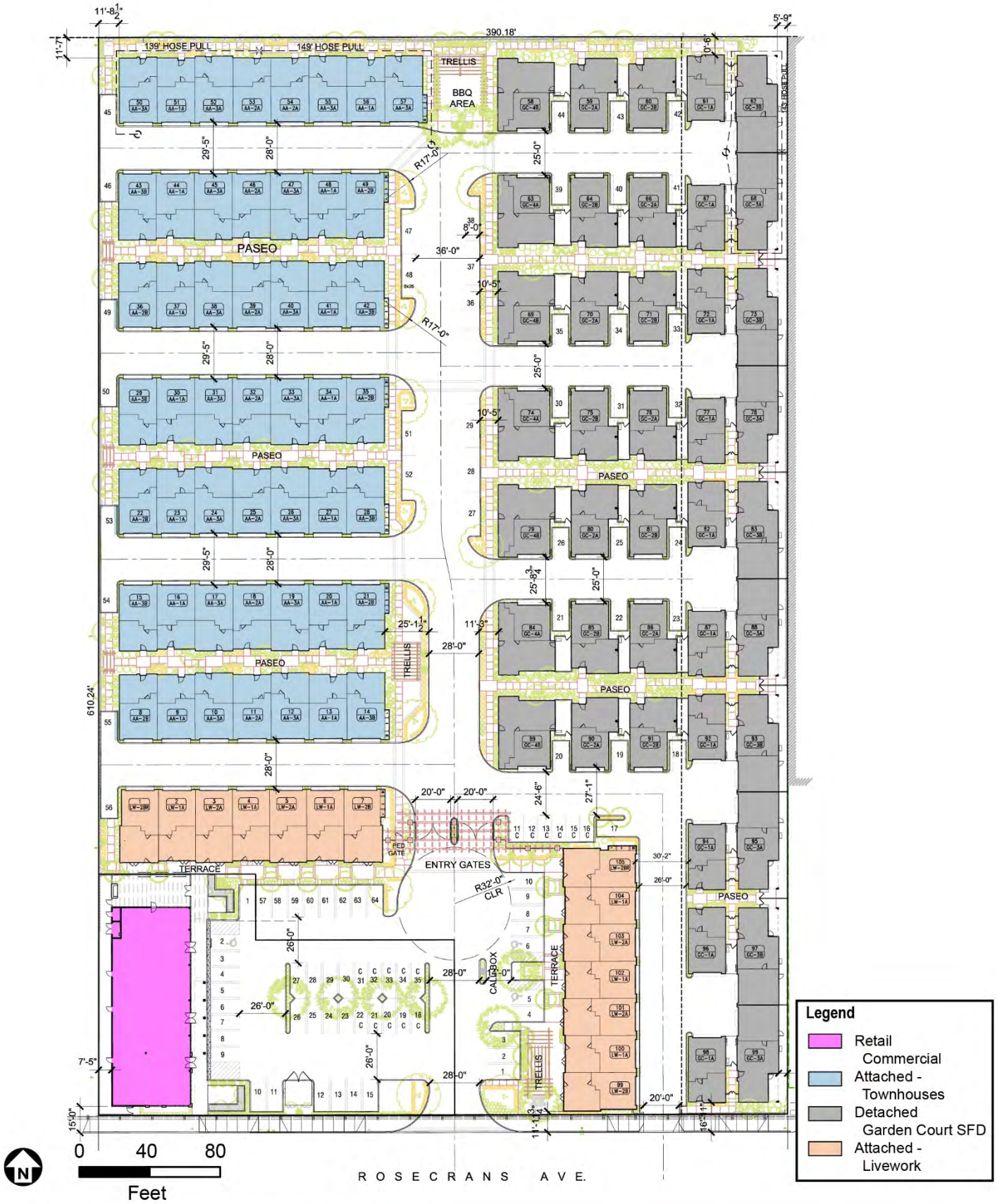
Gardner Rosecrans Avenue Project

Exhibit 2
Site Vicinity Map



Source: Angeleno Associates, Overall Site Plan, May 23, 2019

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Welcome To GARDENA

Gardner Rosecrans Avenue Project

Exhibit 3

Conceptual Site Plan

2 ENVIRONMENTAL SETTING

2.1 Climate and Meteorology

The California Air Resources Board (CARB) divides the State into 15 air basins that share similar meteorological and topographical features. The proposed Project is located within the 6,645-square-mile South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, as well as all of Orange County. SCAB is on a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean on the southwest and high mountains forming the remainder of the perimeter.[3] SCAB's air quality is determined by natural factors such as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. These factors along with applicable regulations are discussed below.

SCAB is part of a semi-permanent high-pressure zone in the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. This usually mild weather pattern is occasionally interrupted by periods of extreme heat, winter storms, and Santa Ana winds. The annual average temperature throughout SCAB ranges from low 60 to high 80 degrees Fahrenheit with little variance. With more oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas.

Contrasting the very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rainfall occurs between the months of November and April. Summer rainfall is reduced to widely scattered thundershowers near the coast, with slightly heavier activity in the east and over the mountains.

Although SCAB has a semiarid climate, the air closer to the Earth's surface is typically moist because of the presence of a shallow marine layer. Except for occasional periods when dry, continental air is brought into the SCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog are frequent and low clouds known as high fog are characteristic climatic features, especially along the coast. Annual average humidity is 70 percent at the coast and 57 percent in SCAB's eastern portions.

Wind patterns across SCAB are characterized by westerly or southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Wind speed is typically higher during the dry summer months than during the rainy winter.

Between periods of wind, air stagnation may occur in both the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During winter and fall, surface high-pressure systems over SCAB, combined with other meteorological conditions, result in very strong, downslope Santa Ana winds. These winds normally continue for a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. SCAB's air quality generally ranges from fair to poor and is like air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

[3] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.

In addition to the characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two distinct types of temperature inversions control the vertical depth through which air pollutants are mixed. These inversions are the marine inversion and the radiation inversion. The height of the base of the inversion at any given time is called the "mixing height." The combination of winds and inversions is a critical determinant leading to highly degraded air quality for the SCAB in the summer and generally good air quality in the winter.

2.2 Air Pollutants of Concern

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as "criteria air pollutants" and are categorized into primary and secondary pollutants.

Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead are primary air pollutants. Of these, CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. For example, the criteria pollutant ozone (O_3) is formed by a chemical reaction between ROG and NO_X in the presence of sunlight. O_3 and nitrogen dioxide (NO_2) are the principal secondary pollutants. Sources and health effects commonly associated with criteria pollutants are summarized in Table 1: Air Contaminants and Associated Public Health Concerns.

Table 1: Air Contaminants and Associated Public Health Concerns

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM_{10} and $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC)[1] and nitrogen oxides (NO_X) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
Sulfur Dioxide (SO_2)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Table 1: Air Contaminants and Associated Public Health Concerns (continued)

Pollutant	Major Man-Made Sources	Human Health Effects
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead (Pb)	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.

Notes:
[1] Volatile Organic Compounds (VOCs or Reactive Organic Gases [ROG]) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

Source: California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, http://www.capcoa.org/health-effects/, Accessed January 27, 2020.

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes more than 200 compounds, including particulate emissions from diesel-fueled engines.

CARB identified diesel particulate matter (DPM) as a toxic air contaminant. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Ambient Air Quality

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Existing levels of ambient air quality, historical trends, and projections near the Project site are documented by measurements made by the South Coast Air Quality Management District (SCAQMD), SCAB's air pollution regulatory agency that maintains air quality monitoring stations, which process ambient air quality measurements.

Ozone (O_3) and particulate matter (PM_{10} and $PM_{2.5}$) are pollutants of concern in the SCAB. The closest air monitoring station to the proposed Project site that monitors ambient concentrations of these pollutants is the Compton-700 North Bullis Road Monitoring Station (located approximately 6.4 miles east of the Project site). Local air quality data from 2016 to 2018 is provided in Table 2: Ambient Air Quality Data. Table 2 lists the monitored maximum concentrations and number of exceedances of federal or state air quality standards for each year.

Table 2: Ambient Air Quality Data

Pollutant	Compton-700 North Bullis Road Monitoring Station[1]		
	2016	2017	2018
Ozone (O_3)			
1-hour Maximum Concentration (ppm)	0.098	0.092	0.075
8-hour Maximum Concentration (ppm)	0.071	0.076	0.063
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	1	0	0
NAAQS 8-hour (>0.070 ppm)	1	5	0
Nitrogen Dioxide (NO_2)			
1-hour Maximum Concentration (ppm)	63.7	99.1	68.3
Number of Days Standard Exceeded			
NAAQS 1-hour (>100 ppm)	0	0	0
CAAQS 1-hour (>0.18 ppm)	0	0	0
Particulate Matter Less Than 10 Microns (PM_{10})			
National 24-hour Maximum Concentration	43.0	46.5	45.3
State 24-hour Maximum Concentration	43.9	46.5	45.1
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m³)	0	0	0
CAAQS 24-hours (>50 µg/m³)	0	0	0
Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$)			
National 24-hour Maximum Concentration	36.3	66.7	49.4
State 24-hour Maximum Concentration	36.3	66.7	49.4
Number of Days Standard Exceeded			
NAAQS 24-hour (>35 µg/m³)	1	5	2

Notes: NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m³ = micrograms per cubic meter; NM = not measured

[1] Measurements taken at the Compton-700 North Bullis Road Monitoring Station, Compton, California 90221 (CARB# 70112).

Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database (https://www.arb.ca.gov/adam).

2.3 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors in proximity to localized sources of toxics are of particular concern. Land uses

considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The Project site is at the City's western portion, in a predominantly commercial and industrial area, although residential uses exist to the west and south. The site is bounded by industrial uses to the north and east, and commercial uses to the south and west.

Table 3: Sensitive Receptors, lists the distances and locations of nearby sensitive receptors, which primarily include single-family residences, health care facilities, religious institutions, educational institutions, and recreational facilities.

Table 3: Sensitive Receptors

Receptor Type/Description	Distance and Direction from the Project Site
RESIDENTIAL	
Single-Family Residential Neighborhood	310 feet to the south
Single-Family Residential Neighborhood	550 feet to the west
Single-Family Residential Neighborhood	2,096 feet to the north
HEALTH CARE	
Las Flores Convalescent Hospital	1,286 feet to the west
RELIGIOUS INSTITUTIONS	
Maria Regina Catholic Church	1,707 feet to the north
Bible Baptist Church	2,814 feet to the southeast
Iglesia Presbiteriana Bethesda	2,966 feet to the southwest
EDUCATIONAL INSTITUTIONS	
Junipero Serra High School	1,500 feet to the south
Maria Regina School – Private School	1,526 feet to the north
Chapman Elementary School	2,335 feet to the southeast
Purche Avenue Elementary School	2,663 feet to the northwest
RECREATIONAL FACILITIES	
Thornburg Park	2,306 feet to the southwest
Rowley Park	2,409 feet to the north
Luck Duck Swim School	2,844 feet to the Southwest
Source: Google Earth Pro, 2019	

3 REGULATORY SETTING

3.1 Federal

Federal Clean Air Act

Air quality is federally protected by the Federal Clean Air Act (FCAA) and its amendments. Under the FCAA, the EPA developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The FCAA requires that each state prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The U.S. Environmental Protection Agency (EPA) can withhold certain transportation funds from states that fail to comply with the FCAA's planning requirements. If a state fails to correct these planning deficiencies within two years of Federal notification, the EPA is required to develop a Federal implementation plan for the identified nonattainment area or areas. The provisions of 40 Code of Federal Regulations Parts 51 and 93 apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. The EPA has designated enforcement of air pollution control regulations to the individual states. Applicable federal standards are summarized in Table 4: State and Federal Ambient Air Quality Standards.

3.2 State of California

California Air Resources Board

CARB administers California's air quality policy. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table 4, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data indicates that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment. The applicable State standards are summarized in Table 4.

Table 4: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1]	Federal Standards[2]
Ozone (O_3) [2, 5, 7]	8 Hour	0.070 ppm (137 µg/m³)	0.070 ppm
	1 Hour	0.09 ppm (180 µg/m³)	NA
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)
	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m³)	0.10 ppm[11]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)
Sulfur Dioxide (SO_2) [8]	24 Hour	0.04 ppm (105 µg/m³)	0.14 ppm (365 µg/m³)
	1 Hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)
	Annual Arithmetic Mean	NA	0.03 ppm (80 µg/m³)
Particulate Matter (PM_{10}) [1, 3, 6]	24-Hour	50 µg/m³	150 µg/m³
	Annual Arithmetic Mean	20 µg/m³	NA
Fine Particulate Matter ($PM_{2.5}$) [3, 4, 6, 9]	24-Hour	NA	35 µg/m³
	Annual Arithmetic Mean	12 µg/m³	12 µg/m³
Sulfates (SO_{4-2})	24 Hour	25 µg/m³	NA
Lead (Pb) [10, 11]	30-Day Average	1.5 µg/m³	NA
	Calendar Quarter	NA	1.5 µg/m³
	Rolling 3-Month Average	NA	0.15 µg/m³
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (0.15 µg/m³)	NA
Vinyl Chloride (C_2H_3Cl) [10]	24 Hour	0.01 ppm (26 µg/m³)	NA

Notes:
ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; – = no information available.

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. Measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe carbon monoxide standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

2 National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m_3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m³.

3 Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard. NAAQS are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.

4 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

5 The national 1-hour ozone standard was revoked by the EPA on June 15, 2005.

6 In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

7 The 8-hour California ozone standard was approved by the CARB on April 28, 2005 and became effective on May 17, 2006.

8 On June 2, 2010, the EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following EPA initial designations of the new 1-hour SO_2 NAAQS.

9 In December 2012, EPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m³. In December 2014, the EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

10 CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.

11 National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2016; California Air Resources Board, *Ambient Air Quality Standards*, May 6, 2016.

3.3 Regional

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino Counties. The agency's primary responsibility is ensuring that federal and state ambient air quality standards are attained and maintained in SCAB. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The SCAQMD is also the lead agency in charge of developing the AQMP, with input from the Southern California Association of Governments (SCAG) and CARB. The AQMP is a comprehensive plan that includes control strategies for stationary and area sources, as well as for on-road and off-road mobile sources. SCAG has the primary responsibility for providing future growth projections and the development and implementation of transportation control measures. CARB, in coordination with federal agencies, provides the control element for mobile sources.

The 2016 AQMP was adopted by the SCAQMD Governing Board on March 3, 2017. The purpose of the AQMP is to set forth a comprehensive and integrated program that would lead the SCAB into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to update the SCAQMD's commitments towards meeting the federal 8-hour ozone standards. The AQMP incorporates the latest scientific and technological information and planning assumptions, including the 2016-2040 *Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) and updated emission inventory methodologies for various source categories.

The SCAQMD has published the *CEQA Air Quality Handbook* (approved by the SCAQMD Governing Board in 1993 and augmented with guidance for Local Significance Thresholds [LST] in 2008). The SCAQMD guidance helps local government agencies and consultants develop environmental documents required by California Environmental Quality Act (CEQA) and identifies thresholds of significance for criteria pollutants for both construction and operation (see discussion of thresholds below). With the help of the *CEQA Air Quality Handbook* and associated guidance, local land use planners and consultants can analyze and document how existing and proposed projects affect air quality, in order to meet the CEQA review process requirements. The SCAQMD periodically provides supplemental guidance and updates to the handbook on their website.

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. Under federal law, SCAG is designated as a Metropolitan Planning Organization and under state law as a Regional Transportation Planning Agency and a Council of Governments.

The state and national attainment status designations for SCAB are summarized in Table 5: South Coast Air Basin Attainment Status. SCAB is currently designated as a nonattainment area concerning the state ozone, PM_{10}, and $PM_{2.5}$ standards, as well as the national 8-hour ozone and $PM_{2.5}$ standards. The SCAB is designated as attainment or unclassified for the remaining state and federal standards.

Table 5: South Coast Air Basin Attainment Status		
Pollutant	**Federal**	**State**
Ozone (O_3) (1 Hour Standard)	Non-Attainment (Extreme)	Non-Attainment
Ozone (O_3) (8 Hour Standard)	Non-Attainment (Extreme)	Non-Attainment
Particulate Matter ($PM_{2.5}$) (24 Hour Standard)	Non-Attainment (Serious)	--
Particulate Matter ($PM_{2.5}$) (Annual Standard)	Non-Attainment (Moderate)	Non-Attainment
Particulate Matter (PM_{10}) (24 Hour Standard)	Attainment (Maintenance)	Non-Attainment
Particulate Matter (PM_{10}) (Annual Standard)	--	Non-Attainment
Carbon Monoxide (CO) (1 Hour Standard)	Attainment (Maintenance)	Attainment
Carbon Monoxide (CO) (8 Hour Standard)	Attainment (Maintenance)	Attainment
Nitrogen Dioxide (NO_2) (1 Hour Standard)	Unclassifiable/Attainment	Attainment
Nitrogen Dioxide (NO_2) (Annual Standard)	Attainment (Maintenance)	Attainment
Sulfur Dioxide (SO_2) (1 Hour Standard)	Unclassifiable/Attainment	Attainment
Sulfur Dioxide (SO_2) (24 Hour Standard)	--	Attainment
Lead (Pb) (30 Day Standard)	Unclassifiable/Attainment	--
Lead (Pb) (3 Month Standard)	--	Attainment
Sulfates (SO_{4-2}) (24 Hour Standard)	--	Attainment
Hydrogen Sulfide (H_2S) (1 Hour Standard)	--	Unclassified
Source: South Coast Air Quality Management District, *Air Quality Management Plan*, 2016; U.S. EPA, *Nonattainment Areas for Criteria Pollutants (Green Book)*, September 4, 2018.		

Following are the SCAQMD rules that are required for the Project's construction activities:

- **Rule 401 (Visible Emissions)** – 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 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of 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. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression Best Available Control Measures (BACMs) are summarized below.

  a) Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.

  b) All on-site roads will be paved as soon as feasible or watered periodically or chemically stabilized.

  c) All material transported off-site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.

  d) The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.

  e) Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

- **Rule 431.2** (**Sulfur Content of Liquid Fuels)** – This rule limits the sulfur content in diesel and other liquid fuels for the purpose of both reducing the formation of sulfur oxides and particulates during combustion and to enable the use of add-on control devices for diesel fueled internal combustion engines.

- **Rule 445 (Wood Burning)** – This rule prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Air Quality Thresholds

State CEQA Guidelines Appendix G

Based upon the criteria derived from State CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

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

South Coast Air Quality Management District

Mass Emissions Thresholds. The SCAQMD significance criteria may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if a proposed project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality during project construction and operations, as indicated in Table 6: South Coast Air Quality Management District Emissions Thresholds.

Table 6: South Coast Air Quality Management District Emissions Thresholds

Criteria Air Pollutants and Precursors (Regional)	Construction-Related	Operational-Related
	Average Daily Emissions (pounds/day)	Average Daily Emission (pounds/day)
Reactive Organic Gases (ROG)	75	55
Carbon Monoxide (CO)	550	550
Nitrogen Oxides (NO_X)	100	55
Sulfur Oxides (SO_X)	150	150
Coarse Particulates (PM_{10})	150	150
Fine Particulates ($PM_{2.5}$)	55	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Significance Thresholds, April 2019.*.

Localized Carbon Monoxide**.** In addition to the daily thresholds listed above, a proposed project would be subject to the ambient air quality standards. These are addressed through an analysis of localized CO impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 ppm
- 8-hour = 9 ppm

The significance of localized impacts depends on whether ambient CO levels near a project site are above state and federal CO standards. The SCAB has been designated as attainment under the 1-hour and 8-hour standards.

Localized Significance Thresholds (LSTs)**.** In addition to the CO hotspot analysis, the SCAQMD developed LSTs for NO_2, CO, PM_{10}, and $PM_{2.5}$ emissions generated at new development sites (off-site mobile source emissions are not included in the LST analysis). LSTs represent the maximum emissions that can be generated at a project site without expecting to cause or substantially contribute to an exceedance of the most stringent national or state ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects that disturb 5.0 acres or less on a single day. The City of Gardena is located within SCAQMD SRA 3 (Southwest Coastal LA County). Table 7: Local Significance Thresholds (Construction/Operations), provides the LSTs for a 1.0-acre, 2.0-acre, and 5.0-acre project site in SRA 3 with sensitive receptors located within 25 meters of a project site.

Table 7: Local Significance Thresholds (Construction/Operations)

Project Size	Nitrogen Oxide (NO_x) – lbs/day	Carbon Monoxide (CO) – lbs/day	Coarse Particulates (PM_{10}) – lbs/day	Fine Particulates ($PM_{2.5}$) – lbs/day
1.0 Acre	91/91	674/674	5/1	3/1
2.0 Acres	131/131	982/982	8/2	5/1
5.0 Acres	197/197	1,823/1,823	15/4	8/2

Source: South Coast Air Quality Management District, *Localized Significance Threshold Methodology,* July 2008.

4.2 Methodology

This air quality impact analysis considers construction and operational impacts associated with the proposed Project. Construction equipment, trucks, worker vehicles, and ground-disturbing activities associated with proposed Project construction would generate criteria air pollutants and precursor emissions. Air quality impacts were assessed according to CARB and SCAQMD recommended methodologies. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 Air Quality Analysis

Threshold 5.1 Would the Project conflict with or obstruct implementation of the applicable air quality plan?

As part of its enforcement responsibilities, the EPA requires that each state with nonattainment areas prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment regarding the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Project site is within SCAB, which is under SCAQMD's jurisdiction. The SCAQMD is required, pursuant to the FCAA, to reduce criteria pollutant emissions for which SCAB is in non-attainment. To reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, the CARB, the SCAG, and the EPA. The AQMP's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016-2040 RTP/SCS, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. The Project is subject to the SCAQMD's AQMP.

Criteria for determining consistency with the AQMP are defined by the following indicators:

- **Consistency Criterion No. 1**: A proposed project would not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the timely attainment of the AQMP's air quality standards or the interim emissions reductions.
- **Consistency Criterion No. 2**: A proposed project would not exceed the AQMP's assumptions or increments based on the years of the project build-out phase.

Consistency Criterion No. 1 refers to the CAAQS and NAAQS. As indicated in Table 8 and Table 9 below, the Project construction and operational emissions would be below SCAQMD's thresholds. As the Project would not generate localized construction or regional construction or operational emissions that would exceed SCAQMD thresholds of significance, the Project would not violate any air quality standards. Thus, the Project would be consistent with Criterion No.1. No impact would occur, and no mitigation is required.

Consistency Criterion No. 2 refers to SCAG's growth forecasts and associated assumptions included in the AQMP. The future air quality levels projected in the AQMP are based on SCAG's growth projections, which are based, in part, on the general plans of cities located within the SCAG region. Therefore, projects that are consistent with the applicable assumptions used in AQMP development would not jeopardize

attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended daily emissions thresholds.

Concerning Consistency Criterion No. 2, the AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. Therefore, it is reasonable to conclude that if a project is consistent with the applicable general plan land use designation, and if the general plan was adopted prior to the applicable AQMP, then the increase in vehicle miles traveled (VMT) and/or population generated by said project would be consistent with the AQMP's assumed VMT and population growth.

The 5.46-acre Project site is designated Commercial with a Mixed-Use Overlay. The Mixed-Use Overlay permits residential development on selected areas designated for commercial and industrial land uses. For lots greater than 1.0 AC, the maximum allowed intensity and density (stepped density) within the Mixed Use Overlay designation are a floor-area ratio (FAR) of 0.5 and 30 DU/AC. Based on a 5.46-acre site and 30 DU/AC, the Project site's maximum residential development capacity is 164 DU, based on the current Mixed-Use Overlay designation. The Project proposes 105 DU at a density of 21.3 DU/acre, which would not exceed the site's maximum allowable density of 30 DU/AC and maximum residential development capacity of 164 DU, based on the current Mixed-Use Overlay designation. Therefore, the Project would be consistent with Criterion No. 2. A less than significant would occur, and no mitigation is required.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.2 Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Construction Emissions

Project construction activities would generate short-term criteria air pollutant emissions. The criteria pollutants of primary concern within the Project area include ozone-precursor pollutants (i.e., ROG and NO_x) and PM_{10} and $PM_{2.5}$. Construction-related emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutant emissions exceed the SCAQMD's thresholds of significance.

Construction results in temporary emissions resulting from site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Airborne particulate matter emissions are largely dependent on the amount of ground disturbance associated with site preparation activities, as well as weather conditions and the appropriate application of water.

The duration of the Project's construction activities are estimated to last approximately 30 months. The Project's construction-related emissions were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Project demolition, site preparation, and grading are anticipated to begin in

the spring of 2020. The exact construction timeline is unknown, however to be conservative, earlier dates were utilized in the modeling. This approach is conservative given that emissions factors decrease in future years due to regulatory and technological improvements and fleet turnover. See Appendix A: Air Quality Data for additional information regarding the construction assumptions used in this analysis.

The Project's estimated maximum daily construction-related emissions are summarized in Table 8: Construction-Related Emissions. As indicated in Table 8, all criteria pollutant emissions would remain below their respective thresholds. While impacts would be considered less than significant, the proposed Project would be subject to compliance with SCAQMD Rules 402, 403, and 1113, described in the *Regulatory Setting – Regional* section above, to further reduce specific construction-related emissions. The proposed Project emissions would not worsen ambient air quality, create additional violations of federal and state standards, or delay SCAB's goal for meeting attainment standards. A less than significant impact would occur, and no mitigation is required.

Table 8: Construction-Related Emissions (Maximum Pounds Per Day)

Construction Year	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2020	4.16	42.48	23.66	0.05	10.51	6.54
2021	2.30	19.32	19.98	0.03	1.83	1.14
2022	22.34	17.39	19.52	0.03	1.68	1.00
SCAQMD Threshold	*75*	*100*	*550*	*150*	*55*	*150*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: SCAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

Operational Emissions

The Project's operational emissions would be associated with area source emissions, energy source emissions, and mobile source emissions. Typically, area and energy sources are small sources that contribute very little emissions individually, but when combined may generate substantial amounts of pollutants. Area specific defaults in CalEEMod were used to calculate area and energy source emissions.

CalEEMod was also used to calculate pollutants emissions from vehicular trips generated from the proposed Project. CalEEMod default inputs, vehicle mix, and trip distances, were unaltered for this analysis. CalEEMod estimated emissions from Project operations are summarized in Table 9: Operational Emissions. Note that emissions rates differ from summer to winter because weather factors are dependent on the season and these factors affect pollutant mixing, dispersion, ozone formation, and other factors.

Table 9: Operational Emissions (Maximum Pounds Per Day)						
Source	**Reactive Organic Gases (ROG)**	**Nitrogen Oxide (NO_x)**	**Carbon Monoxide (CO)**	**Sulfur Dioxide (SO_2)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
Existing Project Site						
Area Source Emissions	1.00	< 0.01	< 0.01	0.00	< 0.01	< 0.01
Energy Emissions	0.02	0.18	0.15	< 0.01	0.01	0.01
Mobile Emissions	0.39	1.72	4.47	0.01	0.95	0.26
Total Emissions	**1.42**	**1.91**	**4.63**	**0.01**	**0.97**	**0.28**
Summer Emissions						
Area Source Emissions	3.59	1.58	9.30	< 0.01	0.16	0.16
Energy Emissions	0.05	0.46	0.20	< 0.01	0.03	0.03
Mobile Emissions	1.65	7.92	22.54	0.08	6.73	1.84
Total Emissions	**5.29**	**9.96**	**32.05**	**0.09**	**6.94**	**2.05**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area Source Emissions	3.59	1.58	9.30	< 0.01	0.16	0.16
Energy Emissions	0.05	0.46	0.20	< 0.01	0.03	0.03
Mobile Emissions	1.60	8.12	21.35	0.07	6.73	1.84
Total Emissions	**5.25**	**10.16**	**30.87**	**0.09**	**6.94**	**2.05**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Net Emissions						
Area Source Emissions	2.59	1.58	9.30	< 0.01	0.16	0.16
Energy Emissions	0.03	0.28	0.05	0.00	0.02	0.02
Mobile Emissions	1.26	6.40	18.07	0.07	5.78	1.58
Total Emissions	**3.70**	**8.25**	**27.42**	**0.08**	**5.97**	**1.77**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.						

As indicated in Table 9**,** emission calculations generated from CalEEMod demonstrate that Project operations would not exceed the SCAQMD thresholds for any criteria air pollutants. Therefore, impacts associated with Project operations would be less than significant.

Area Source Emissions

Area source emissions would be generated due to consumer products (i.e., household cleaners, architectural coating, and gasoline-powered landscaping and maintenance equipment that were previously not present on the site. As indicated in Table 9, the Project's unmitigated area source emissions would not exceed SCAQMD thresholds for either the winter or summer seasons.

Energy Source Emissions

Energy source emissions would be generated due to the Project's electricity and natural gas usage. The Project's primary uses of electricity and natural gas would be for space heating and cooling, water heating,

ventilation, lighting, appliances, and electronics. As indicated in Table 9, the Project's unmitigated energy source emissions would not exceed SCAQMD thresholds for criteria pollutants.

Mobile Source

Mobile source emissions are from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern. NO_X and ROG react with sunlight to form O_3, known as photochemical smog. Additionally, wind currents readily transport PM_{10} and $PM_{2.5}$. However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod, as recommended by the SCAQMD. The Project's trip generation estimates were based on the standard Institute of Transportation Engineers (ITE) trip generation rates. Based on the ITE trip generation rates, the proposed Project would generate 918 average daily trips (ADT).[4] As indicated in Table 9, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants.

Cumulative Short-Term Emissions

SCAB is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for state standards and nonattainment for O_3 and $PM_{2.5}$ for federal standards. As discussed above, the Project's construction-related emissions by themselves would not exceed the SCAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether individual Project emissions have the potential to affect cumulative regional air quality, it can be expected that the Project-related construction emissions would not be cumulatively considerable. The SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to the federal Clean Air Act mandates. The analysis assumed fugitive dust controls would be utilized during construction, including frequent water applications. SCAQMD rules, mandates, and compliance with adopted AQMP emissions control measures would also be imposed on construction projects throughout SCAB, which would include related cumulative projects. As concluded above, the Project's construction-related impacts would be less than significant. Compliance with SCAQMD rules and regulations would further minimize the proposed Project's construction-related emissions. Therefore, Project-related construction emissions, in combination with those from other projects in the area, would not substantially deteriorate local air quality. The Project's construction-related emissions would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Impacts

The SCAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, individual project emissions contribute to existing cumulatively significant adverse air quality impacts. The SCAQMD developed the operational thresholds of significance based on the level above which individual project emissions would result in a cumulatively considerable contribution to SCAB's existing air quality conditions. Therefore, a

[4] Kimley-Horn & Associates, *Gardner Rosecrans Avenue Project – Trip Generation Analysis*, December 2019.

project that exceeds the SCAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As indicated in Table 9, the Project's operational emissions would not exceed SCAQMD thresholds. As a result, the Project's operational emissions would not result in a cumulatively considerable contribution to significant cumulative air quality impacts. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Project operations would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.3 Would the Project expose sensitive receptors to substantial pollutant concentrations?

Localized Construction Significance Analysis

The nearest sensitive receptors to the Project site are single family homes, located approximately 310 feet (95 meters) to the south. To identify impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific emissions.

Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 10: Equipment-Specific Grading Rates, is used to determine the maximum daily disturbed acreage for comparison to LSTs. The appropriate SRA for the localized significance thresholds is the Southwest Coastal LA County area (SRA 3), since this area includes the Project site. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD provides look-up tables for projects that disturb areas less than or equal to 5.0 acres. Project construction is anticipated to disturb a maximum of 3.5 acres in a single day.

Table 10: Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Equipment Quantity	Acres Graded per 8-Hour Day	Operating Hours per Day	Acres Graded per Day
Site Preparation	Rubber Tired Dozers	3	0.5	8	1.5
	Tractors/Loaders/Backhoes	4	0.5	8	2.0
				Total Acres Graded per Day	**3.5**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

The SCAQMD's methodology states that "off-site mobile emissions from the project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "on-site" emissions outputs were considered. The nearest sensitive receptors to the Project site are the single-family residences located approximately 310 feet (95 meters) to the south. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, the 100-meter distance was used. Additionally, the 2-acre thresholds were used for operations. The LSTs increase as site acreages increase because pollutants would be able to

disperse more readily. Although the Project site is greater than 2 acres, the LST lookup tables can be conservatively used to show that even if the daily construction emissions were emitted on a 2-acre site, the impacts would be less than significant. Table 11: Localized Significance of Construction Emissions, indicates the results of localized emissions during Project construction.

Table 11 indicates that these pollutant emissions on the peak day of Project construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the Project would result in a less than significant impact concerning LSTs during construction activities, and no mitigation is required.

Table 11: Localized Significance of Construction Emissions (Maximum Pounds Per Day)

Construction Activity	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Demolition (2020)	33.20	21.75	3.54	1.82
Site Preparation (2020)	42.41	21.51	10.32	6.49
Grading (2020)	26.38	16.05	4.22	2.68
Building Construction (2020)	19.19	16.84	1.11	1.05
Building Construction (2021)	17.43	16.57	0.95	0.90
Building Construction (2022)	15.61	16.36	0.80	0.76
Paving (2022)	11.12	14.58	0.56	0.52
Architectural Coating (2020)	1.40	1.81	0.08	0.08
SCAQMD Localized Screening Threshold (2 acres at 100 meters)	*139*	*1,697*	*37*	*12*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

Localized Operational Significance Analysis

LSTs for receptors located at 100 meters for SRA 3 were utilized in this analysis. The Project site is 5.46-acres, the 5.0-acre threshold was conservatively used for the Project. The on-site operational emissions are compared to the LST thresholds in Table 12: Localized Significance of Operational Emissions. Table 12 indicates that the maximum daily emissions of these pollutants during Project operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, the Project would result in a less than significant impact concerning LSTs during operational activities, and no mitigation is required.

Table 12: Localized Significance of Operational Emissions (Maximum Pounds Per Day)

Activity	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
On-Site Emissions (Area Sources)	1.58	9.30	0.16	0.16
SCAQMD Localized Screening Threshold (5 acres at 100 meters)	*139*	*1,697*	*9*	*3*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

The proposed Project would not involve the use, storage, or processing of carcinogenic or non-carcinogenic toxic air contaminants, and no significant toxic airborne emissions would result from operation of the proposed Project. Construction activities are subject to the regulations and laws relating to toxic air pollutants at the federal, state, and regional levels that would protect sensitive receptors from substantial concentrations of these emissions. Therefore, impacts associated with the release of toxic air contaminants would be less than significant, and no mitigation is required.

Criteria Pollutant Health Impacts

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (Sierra Club v. County of Fresno [Friant Ranch, L.P.] [2018] Cal.5th, Case No. S219783). The SCAQMD has set its CEQA significance thresholds based on the FCAA, which defines a major stationary source (in extreme ozone nonattainment areas such as the South Coast Air Basin) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program[5] was created by the FCAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based federal ambient air quality standards. The federal ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

NO_X and ROG are precursor emissions that form ozone in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. Breathing ground-level ozone can result health effects that include: reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that ozone can make asthma symptoms worse and can increase sensitivity to asthma triggers.

According the SCAQMD's 2016 AQMP, ozone, NO_X, and ROG have been decreasing in the Basin since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled in the Basin continue to increase, NO_X and ROG levels are decreasing because of the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_X emissions from electric utilities have also decreased due to the use of cleaner fuels and renewable energy. The 2016 AQMP demonstrates how the SCAQMD's control strategy to meet the 8-hour ozone standard in 2023 would lead to sufficient NO_X emission reductions to attain the 1-hour ozone standard by 2022. In addition, since NO_X emissions also lead to the formation of $PM_{2.5}$, the NO_X reductions needed to meet the ozone standards will likewise lead to improvement of $PM_{2.5}$ levels and attainment of $PM_{2.5}$ standards.

[5] Code of Federal Regulation (CFR) [i.e., PSD (40 CFR 52.21, 40 CFR 51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)

The SCAQMD's air quality modeling demonstrates that NO_X reductions prove to be much more effective in reducing ozone levels and will also lead to significant improvement in $PM_{2.5}$ concentrations. NO_X-emitting stationary sources regulated by the SCAQMD include Regional Clean Air Incentives Market (RECLAIM) facilities (e.g., refineries, power plants, etc.), natural gas combustion equipment (e.g., boilers, heaters, engines, burners, flares) and other combustion sources that burn wood or propane. The 2016 AQMP identifies robust NO_X reductions from new regulations on RECLAIM facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NO_X emissions levels achievable but there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The AQMD plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies.

The 2016 AQMD also emphasizes that beginning in 2012, continued implementation of previously adopted regulations will lead to NO_X emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP proposed regulatory measures, a 30 percent reduction of NO_X from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_X reductions from stationary sources achieved in the decades prior to 2008.

As previously discussed, Project emissions would not exceed SCAQMD thresholds, thus, would be less than significant; (see Table 8 and Table 9). Localized effects of on-site Project emissions on nearby receptors were also found to be less than significant (see Table 11 and Table 12). The LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable NAAQS or CAAQS. The LSTs were developed by the SCAQMD based on the ambient concentrations of that pollutant for each SRA and distance to the nearest sensitive receptor. The ambient air quality standards establish the levels of air quality necessary, with an adequate margin of safety, to protect public health, including protecting the health of sensitive populations such as asthmatics, children, and the elderly. As shown above, Project-related emissions would not exceed the regional thresholds or the LSTs, and therefore would not exceed the ambient air quality standards or cause an increase in the frequency or severity of existing violations of air quality standards. Therefore, sensitive receptors would not be exposed to criteria pollutant levels in excess of the health-based ambient air quality standards.

Carbon Monoxide Hotspots

A CO "hot spots" analysis is needed to determine whether the change in the level of service of an intersection resulting from the proposed Project would have the potential to result in exceedances of the CAAQS or NAAQS. It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when vehicles are idling at intersections. Vehicle emissions standards have become increasingly stringent in the last 20 years. Currently, California's CO standard is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The 2016 AQMP is the most recent version that addresses CO concentrations. As part of the SCAQMD *CO Hotspot Analysis*, the Wilshire Boulevard/Veteran Avenue intersection, one of the most congested intersections in Southern California with approximately 100,000 ADT, was modeled for CO concentrations. This modeling effort identified a CO concentration high of 4.6 ppm, which is well below the 35-ppm federal standard. The proposed Project would not produce the volume of traffic required to generate a CO hot spot in the context of SCAQMD's *CO Hotspot Analysis*. As the CO hotspots were not experienced at the Wilshire Boulevard/Veteran Avenue intersection even as it accommodates 100,000 ADT, it can be reasonably inferred that CO hotspots would not be experienced at any Project area intersections from the 918 ADT attributable to the Project. Therefore, impacts would be less than significant, and no mitigation is required.

Construction-Related Diesel Particulate Matter

Project construction would generate DPM emissions from the use of off-road diesel equipment required. The amount to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer.

The use of diesel-powered construction equipment would be temporary and episodic. The duration of exposure would be short and exhaust from construction equipment would dissipate rapidly. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. The nearest sensitive receptors to the Project site are located approximately 310 feet from the property boundary, and further from the major Project construction areas.

California Office of Environmental Health Hazard Assessment has not identified short-term health effects from DPM. Construction is temporary and would be transient throughout the site (i.e., move from location to location) and would not generate emissions in a fixed location for extended periods of time. Construction activities would be subject to and would comply with California regulations limiting the idling of heavy-duty construction equipment to no more than 5.0 minutes to further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. For these reasons, DPM generated by Project construction activities, in and of itself, would not expose sensitive receptors to substantial amounts of air toxics. The Project would result in a less than significant impact, and no mitigation is required.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.4 Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction

Odors that could be generated by construction activities are required to follow SCAQMD Rule 402 to prevent odor nuisances on sensitive land uses. SCAQMD Rule 402, Nuisance, states:

> *A person shall not discharge from any source whatsoever such quantities of 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.*

During Project construction, emissions from construction equipment, such as diesel exhaust, and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be temporary, are not expected to affect a substantial number of people and would disperse rapidly. Therefore, impacts related to odors associated with the Project's construction-related activities would be less than significant.

Operations

The SCAQMD *CEQA Air Quality Handbook* identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Project proposes development of residential and commercial uses, which would not involve the types of uses that would emit objectionable odors affecting substantial numbers of people. The proposed Project would not include any of the land uses that have been identified by the SCAQMD as odor sources. Therefore, the proposed Project would not create objectionable odors.

Mitigation Measures: No mitigation is required.

Level of Significance: No impact.

Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

The cumulative setting for air quality includes the City of Gardena and SCAB. SCAB is designated as a nonattainment area for state standards of ozone, PM_{10}, and $PM_{2.5}$. SCAB is designated as a nonattainment area for federal standards of ozone and $PM_{2.5,}$ attainment and serious maintenance for federal PM_{10} standards, and is designated as unclassified or attainment for all other pollutants. Cumulative growth in population and vehicle use could inhibit efforts to improve regional air quality and attain the ambient air quality standards.

Cumulative Impacts and Mitigation Measures

The SCAQMD's approach to assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with FCAA and CCAA requirements. As discussed above, the proposed Project would be consistent with the AQMP, which is intended to bring SCAB into attainment for all criteria pollutants. Since the Project's estimated construction and operational emissions would not

exceed the applicable SCAQMD daily significance thresholds that are designed to assist the region in attaining both NAAQS and CAAQS, cumulative impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

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2. California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, 2018.
3. California Air Pollution Control Officers Association (CAPCOA), *Health Risk Assessments for Proposed Land Use Projects*, 2009.
4. California Air Resources Board, *Aerometric Data Analysis and Measurement System (ADAM) Top Four Summaries from 2015 to 2017*, 2018.
5. California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005.
6. California Air Resources Board, *Current Air Quality Standards*, 2016.
7. California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, 2000.
8. Federal Highway Administration, *Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents,* 2016.
9. Kimley-Horn & Associates, *Gardner Rosecrans Avenue Project - Trip Generation Analysis,* December 2019.
10. Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, 2015.
11. Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.
12. South Coast Air Quality Management District, *Air Quality Management Plan,* 2016.
13. South Coast Air Quality Management District, *CEQA Air Quality Handbook*, 1993.
14. South Coast Air Quality Management District, *Localized Significance Threshold Methodology*, 2009.
15. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
16. United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants*, 2018.
17. United States Environmental Protection Agency, *Policy Assessment for the Review of the Lead National Ambient Air Quality Standards*, 2013.

Appendix A

Air Quality Modeling Data

Gardner Rosecrans Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	3.43	1000sqft	0.00	3,430.00	0
Parking Lot	64.00	Space	0.58	25,600.00	0
Apartments Mid Rise	64.00	Dwelling Unit	3.00	64,000.00	183
Single Family Housing	41.00	Dwelling Unit	1.30	73,800.00	117
Regional Shopping Center	5.05	1000sqft	0.54	5,050.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	510.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Gardner Rosecrans Project - Los Angeles-South Coast County, Annual

Project Characteristics - Adjusted per the SCE 2018 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 513-25*0.029-298*0.00617=510.43 to avoid double counting.

Land Use - 41 single family, (50 3-story townhomes + 14 3-story live/work units) = 64, live/work workspace = 3,430 sf, retail = 5,050 sf
Density 21.3 DU/AC - site plan,
274 parking spaces / 210 garage and 64 parking lot1.59+

Construction Phase - used start and end construction dates and proportionally extended default schedule

Demolition - Construction Data Needs 175,000 sq ft of demo

Grading - Construction Data Needs Import 3615 CY

Architectural Coating - Architectural Coating - Rule 1113

Trips and VMT -

Vehicle Trips - 918 daily Trips with internal capture- from TIA, 918/64=14.34375

Woodstoves - no wood burning stoves

Energy Use -

Area Coating - low VOC

Operational Off-Road Equipment -

Construction Off-road Equipment Mitigation - Rule 403

Waste Mitigation -

Area Mitigation - use low VOC

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50

Gardner Rosecrans Project - Los Angeles-South Coast County, Annual

tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	230.00	480.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	10.00	21.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	3.20	0.00
tblFireplaces	NumberWood	2.05	0.00
tblGrading	MaterialImported	0.00	3,615.00
tblLandUse	LotAcreage	0.08	0.00
tblLandUse	LotAcreage	1.68	3.00
tblLandUse	LotAcreage	13.31	1.30
tblLandUse	LotAcreage	0.12	0.54
tblProjectCharacteristics	CO2IntensityFactor	702.44	510.43
tblVehicleTrips	ST_TR	6.39	14.34
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	5.86	14.34
tblVehicleTrips	SU_TR	1.05	0.00

tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	6.65	14.34
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3161	3.0908	2.2577	4.6800e-003	0.4831	0.1495	0.6327	0.2060	0.1392	0.3452	0.0000	417.1932	417.1932	0.0876	0.0000	419.3839
2021	0.2965	2.5262	2.5876	5.1300e-003	0.1198	0.1264	0.2462	0.0321	0.1189	0.1510	0.0000	452.4716	452.4716	0.0791	0.0000	454.4490
2022	0.5884	1.1566	1.3552	2.6000e-003	0.0540	0.0555	0.1095	0.0145	0.0521	0.0666	0.0000	229.2513	229.2513	0.0447	0.0000	230.3675
Maximum	**0.5884**	**3.0908**	**2.5876**	**5.1300e-003**	**0.4831**	**0.1495**	**0.6327**	**0.2060**	**0.1392**	**0.3452**	**0.0000**	**452.4716**	**452.4716**	**0.0876**	**0.0000**	**454.4490**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3161	3.0908	2.2577	4.6800e-003	0.2520	0.1495	0.4015	0.1021	0.1392	0.2413	0.0000	417.1929	417.1929	0.0876	0.0000	419.3835
2021	0.2965	2.5262	2.5876	5.1300e-003	0.1107	0.1264	0.2371	0.0299	0.1189	0.1487	0.0000	452.4713	452.4713	0.0791	0.0000	454.4486
2022	0.5884	1.1566	1.3552	2.6000e-003	0.0499	0.0555	0.1054	0.0135	0.0521	0.0656	0.0000	229.2511	229.2511	0.0447	0.0000	230.3673
Maximum	**0.5884**	**3.0908**	**2.5876**	**5.1300e-003**	**0.2520**	**0.1495**	**0.4015**	**0.1021**	**0.1392**	**0.2413**	**0.0000**	**452.4713**	**452.4713**	**0.0876**	**0.0000**	**454.4486**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**37.21**	**0.00**	**24.73**	**42.41**	**0.00**	**19.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-2-2020**	**6-1-2020**	1.4158	1.4158
2	**6-2-2020**	**9-1-2020**	0.9344	0.9344
3	**9-2-2020**	**12-1-2020**	0.7736	0.7736
4	**12-2-2020**	**3-1-2021**	0.7187	0.7187
5	**3-2-2021**	**6-1-2021**	0.7094	0.7094
6	**6-2-2021**	**9-1-2021**	0.7087	0.7087
7	**9-2-2021**	**12-1-2021**	0.7023	0.7023
8	**12-2-2021**	**3-1-2022**	0.6493	0.6493
9	**3-2-2022**	**6-1-2022**	0.6214	0.6214
10	**6-2-2022**	**9-1-2022**	0.5776	0.5776
11	**9-2-2022**	**9-30-2022**	0.1274	0.1274
		Highest	1.4158	1.4158

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6107	0.0310	1.0928	1.8000e-004		7.4900e-003	7.4900e-003		7.4900e-003	7.4900e-003	0.0000	23.2028	23.2028	2.1200e-003	3.9000e-004	23.3730
Energy	9.8700e-003	0.0845	0.0368	5.4000e-004		6.8200e-003	6.8200e-003		6.8200e-003	6.8200e-003	0.0000	259.2811	259.2811	0.0111	3.6900e-003	260.6572
Mobile	0.2858	1.5053	3.9448	0.0144	1.1906	0.0120	1.2026	0.3192	0.0112	0.3304	0.0000	1,330.3097	1,330.3097	0.0684	0.0000	1,332.0196
Waste						0.0000	0.0000		0.0000	0.0000	17.4369	0.0000	17.4369	1.0305	0.0000	43.1992
Water						0.0000	0.0000		0.0000	0.0000	2.4825	36.2346	38.7170	0.2570	6.4500e-003	47.0638
Total	**0.9064**	**1.6208**	**5.0744**	**0.0151**	**1.1906**	**0.0264**	**1.2170**	**0.3192**	**0.0255**	**0.3447**	**19.9194**	**1,649.0281**	**1,668.9475**	**1.3691**	**0.0105**	**1,706.3128**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6083	0.0125	1.0849	6.0000e-005		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	1.7706	1.7706	1.7100e-003	0.0000	1.8134
Energy	9.8700e-003	0.0845	0.0368	5.4000e-004		6.8200e-003	6.8200e-003		6.8200e-003	6.8200e-003	0.0000	259.2811	259.2811	0.0111	3.6900e-003	260.6572
Mobile	0.2858	1.5053	3.9448	0.0144	1.1906	0.0120	1.2026	0.3192	0.0112	0.3304	0.0000	1,330.3097	1,330.3097	0.0684	0.0000	1,332.0196
Waste						0.0000	0.0000		0.0000	0.0000	8.7185	0.0000	8.7185	0.5153	0.0000	21.5996
Water						0.0000	0.0000		0.0000	0.0000	1.9860	30.7453	32.7312	0.2057	5.1800e-003	39.4174
Total	**0.9040**	**1.6023**	**5.0665**	**0.0150**	**1.1906**	**0.0249**	**1.2155**	**0.3192**	**0.0240**	**0.3432**	**10.7044**	**1,622.1066**	**1,632.8110**	**0.8021**	**8.8700e-003**	**1,655.5071**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.26**	**1.14**	**0.16**	**0.79**	**0.00**	**5.69**	**0.12**	**0.00**	**5.87**	**0.44**	**46.26**	**1.63**	**2.17**	**41.41**	**15.76**	**2.98**

3.0 Construction Detail

Construction Phase

Gardner Rosecrans Project - Los Angeles-South Coast County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/2/2020	4/27/2020	5	41	
2	Site Preparation	Site Preparation	4/28/2020	5/26/2020	5	21	
3	Grading	Grading	5/27/2020	7/22/2020	5	41	
4	Building Construction	Building Construction	7/23/2020	5/25/2022	5	480	
5	Paving	Paving	5/26/2022	7/21/2022	5	41	
6	Architectural Coating	Architectural Coating	7/22/2022	9/16/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 20.5

Acres of Paving: 0.58

Residential Indoor: 279,045; Residential Outdoor: 93,015; Non-Residential Indoor: 12,720; Non-Residential Outdoor: 4,240; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Gardner Rosecrans Project - Los Angeles-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	796.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	452.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	74.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0861	0.0000	0.0861	0.0130	0.0000	0.0130	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0679	0.6806	0.4459	8.0000e-004		0.0340	0.0340		0.0316	0.0316	0.0000	69.6971	69.6971	0.0197	0.0000	70.1890
Total	**0.0679**	**0.6806**	**0.4459**	**8.0000e-004**	**0.0861**	**0.0340**	**0.1201**	**0.0130**	**0.0316**	**0.0447**	**0.0000**	**69.6971**	**69.6971**	**0.0197**	**0.0000**	**70.1890**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5100e-003	0.1182	0.0261	3.1000e-004	6.8400e-003	3.7000e-004	7.2100e-003	1.8800e-003	3.5000e-004	2.2300e-003	0.0000	30.6771	30.6771	2.1400e-003	0.0000	30.7306
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4200e-003	1.1400e-003	0.0127	3.0000e-005	3.3700e-003	3.0000e-005	3.4000e-003	8.9000e-004	3.0000e-005	9.2000e-004	0.0000	3.1407	3.1407	1.0000e-004	0.0000	3.1431
Total	**4.9300e-003**	**0.1193**	**0.0387**	**3.4000e-004**	**0.0102**	**4.0000e-004**	**0.0106**	**2.7700e-003**	**3.8000e-004**	**3.1500e-003**	**0.0000**	**33.8178**	**33.8178**	**2.2400e-003**	**0.0000**	**33.8737**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0388	0.0000	0.0388	5.8700e-003	0.0000	5.8700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0679	0.6806	0.4459	8.0000e-004		0.0340	0.0340		0.0316	0.0316	0.0000	69.6971	69.6971	0.0197	0.0000	70.1889
Total	**0.0679**	**0.6806**	**0.4459**	**8.0000e-004**	**0.0388**	**0.0340**	**0.0728**	**5.8700e-003**	**0.0316**	**0.0375**	**0.0000**	**69.6971**	**69.6971**	**0.0197**	**0.0000**	**70.1889**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.5100e-003	0.1182	0.0261	3.1000e-004	6.3800e-003	3.7000e-004	6.7400e-003	1.7600e-003	3.5000e-004	2.1200e-003	0.0000	30.6771	30.6771	2.1400e-003	0.0000	30.7306
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4200e-003	1.1400e-003	0.0127	3.0000e-005	3.1100e-003	3.0000e-005	3.1400e-003	8.3000e-004	3.0000e-005	8.6000e-004	0.0000	3.1407	3.1407	1.0000e-004	0.0000	3.1431
Total	**4.9300e-003**	**0.1193**	**0.0387**	**3.4000e-004**	**9.4900e-003**	**4.0000e-004**	**9.8800e-003**	**2.5900e-003**	**3.8000e-004**	**2.9800e-003**	**0.0000**	**33.8178**	**33.8178**	**2.2400e-003**	**0.0000**	**33.8737**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1897	0.0000	0.1897	0.1043	0.0000	0.1043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4454	0.2259	4.0000e-004		0.0231	0.0231		0.0212	0.0212	0.0000	35.1022	35.1022	0.0114	0.0000	35.3860
Total	**0.0428**	**0.4454**	**0.2259**	**4.0000e-004**	**0.1897**	**0.0231**	**0.2128**	**0.1043**	**0.0212**	**0.1255**	**0.0000**	**35.1022**	**35.1022**	**0.0114**	**0.0000**	**35.3860**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	7.0000e-004	7.7800e-003	2.0000e-005	2.0700e-003	2.0000e-005	2.0900e-003	5.5000e-004	2.0000e-005	5.7000e-004	0.0000	1.9304	1.9304	6.0000e-005	0.0000	1.9319
Total	**8.7000e-004**	**7.0000e-004**	**7.7800e-003**	**2.0000e-005**	**2.0700e-003**	**2.0000e-005**	**2.0900e-003**	**5.5000e-004**	**2.0000e-005**	**5.7000e-004**	**0.0000**	**1.9304**	**1.9304**	**6.0000e-005**	**0.0000**	**1.9319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0854	0.0000	0.0854	0.0469	0.0000	0.0469	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0428	0.4454	0.2259	4.0000e-004		0.0231	0.0231		0.0212	0.0212	0.0000	35.1022	35.1022	0.0114	0.0000	35.3860
Total	**0.0428**	**0.4454**	**0.2259**	**4.0000e-004**	**0.0854**	**0.0231**	**0.1084**	**0.0469**	**0.0212**	**0.0682**	**0.0000**	**35.1022**	**35.1022**	**0.0114**	**0.0000**	**35.3860**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.7000e-004	7.0000e-004	7.7800e-003	2.0000e-005	1.9100e-003	2.0000e-005	1.9300e-003	5.1000e-004	2.0000e-005	5.3000e-004	0.0000	1.9304	1.9304	6.0000e-005	0.0000	1.9319
Total	**8.7000e-004**	**7.0000e-004**	**7.7800e-003**	**2.0000e-005**	**1.9100e-003**	**2.0000e-005**	**1.9300e-003**	**5.1000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.9304**	**1.9304**	**6.0000e-005**	**0.0000**	**1.9319**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1345	0.0000	0.1345	0.0691	0.0000	0.0691	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5409	0.3291	6.1000e-004		0.0261	0.0261		0.0240	0.0240	0.0000	53.4204	53.4204	0.0173	0.0000	53.8524
Total	**0.0498**	**0.5409**	**0.3291**	**6.1000e-004**	**0.1345**	**0.0261**	**0.1606**	**0.0691**	**0.0240**	**0.0931**	**0.0000**	**53.4204**	**53.4204**	**0.0173**	**0.0000**	**53.8524**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9900e-003	0.0671	0.0148	1.8000e-004	3.8800e-003	2.1000e-004	4.0900e-003	1.0700e-003	2.0000e-004	1.2700e-003	0.0000	17.4197	17.4197	1.2100e-003	0.0000	17.4500
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4200e-003	1.1400e-003	0.0127	3.0000e-005	3.3700e-003	3.0000e-005	3.4000e-003	8.9000e-004	3.0000e-005	9.2000e-004	0.0000	3.1407	3.1407	1.0000e-004	0.0000	3.1431
Total	**3.4100e-003**	**0.0683**	**0.0275**	**2.1000e-004**	**7.2500e-003**	**2.4000e-004**	**7.4900e-003**	**1.9600e-003**	**2.3000e-004**	**2.1900e-003**	**0.0000**	**20.5603**	**20.5603**	**1.3100e-003**	**0.0000**	**20.5931**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0605	0.0000	0.0605	0.0311	0.0000	0.0311	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0498	0.5409	0.3291	6.1000e-004		0.0261	0.0261		0.0240	0.0240	0.0000	53.4204	53.4204	0.0173	0.0000	53.8523
Total	**0.0498**	**0.5409**	**0.3291**	**6.1000e-004**	**0.0605**	**0.0261**	**0.0867**	**0.0311**	**0.0240**	**0.0551**	**0.0000**	**53.4204**	**53.4204**	**0.0173**	**0.0000**	**53.8523**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9900e-003	0.0671	0.0148	1.8000e-004	3.6200e-003	2.1000e-004	3.8300e-003	1.0000e-003	2.0000e-004	1.2000e-003	0.0000	17.4197	17.4197	1.2100e-003	0.0000	17.4500
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4200e-003	1.1400e-003	0.0127	3.0000e-005	3.1100e-003	3.0000e-005	3.1400e-003	8.3000e-004	3.0000e-005	8.6000e-004	0.0000	3.1407	3.1407	1.0000e-004	0.0000	3.1431
Total	**3.4100e-003**	**0.0683**	**0.0275**	**2.1000e-004**	**6.7300e-003**	**2.4000e-004**	**6.9700e-003**	**1.8300e-003**	**2.3000e-004**	**2.0600e-003**	**0.0000**	**20.5603**	**20.5603**	**1.3100e-003**	**0.0000**	**20.5931**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1230	1.1128	0.9772	1.5600e-003		0.0648	0.0648		0.0609	0.0609	0.0000	134.3338	134.3338	0.0328	0.0000	135.1531
Total	**0.1230**	**1.1128**	**0.9772**	**1.5600e-003**		**0.0648**	**0.0648**		**0.0609**	**0.0609**	**0.0000**	**134.3338**	**134.3338**	**0.0328**	**0.0000**	**135.1531**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.1069	0.0289	2.5000e-004	6.2100e-003	5.0000e-004	6.7100e-003	1.7900e-003	4.8000e-004	2.2700e-003	0.0000	24.4948	24.4948	1.5600e-003	0.0000	24.5337
Worker	0.0198	0.0160	0.1767	4.9000e-004	0.0470	4.0000e-004	0.0474	0.0125	3.7000e-004	0.0129	0.0000	43.8364	43.8364	1.3800e-003	0.0000	43.8709
Total	**0.0234**	**0.1228**	**0.2056**	**7.4000e-004**	**0.0532**	**9.0000e-004**	**0.0541**	**0.0143**	**8.5000e-004**	**0.0151**	**0.0000**	**68.3312**	**68.3312**	**2.9400e-003**	**0.0000**	**68.4046**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1230	1.1128	0.9772	1.5600e-003		0.0648	0.0648		0.0609	0.0609	0.0000	134.3336	134.3336	0.0328	0.0000	135.1530
Total	**0.1230**	**1.1128**	**0.9772**	**1.5600e-003**		**0.0648**	**0.0648**		**0.0609**	**0.0609**	**0.0000**	**134.3336**	**134.3336**	**0.0328**	**0.0000**	**135.1530**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5800e-003	0.1069	0.0289	2.5000e-004	5.8200e-003	5.0000e-004	6.3100e-003	1.7000e-003	4.8000e-004	2.1700e-003	0.0000	24.4948	24.4948	1.5600e-003	0.0000	24.5337
Worker	0.0198	0.0160	0.1767	4.9000e-004	0.0434	4.0000e-004	0.0438	0.0116	3.7000e-004	0.0120	0.0000	43.8364	43.8364	1.3800e-003	0.0000	43.8709
Total	**0.0234**	**0.1228**	**0.2056**	**7.4000e-004**	**0.0492**	**9.0000e-004**	**0.0501**	**0.0133**	**8.5000e-004**	**0.0141**	**0.0000**	**68.3312**	**68.3312**	**2.9400e-003**	**0.0000**	**68.4046**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8900e-003	0.2189	0.0594	5.6000e-004	0.0140	4.5000e-004	0.0144	4.0300e-003	4.3000e-004	4.4600e-003	0.0000	54.6853	54.6853	3.3500e-003	0.0000	54.7691
Worker	0.0416	0.0324	0.3652	1.0600e-003	0.1058	8.7000e-004	0.1067	0.0281	8.0000e-004	0.0289	0.0000	95.4997	95.4997	2.8100e-003	0.0000	95.5700
Total	**0.0484**	**0.2513**	**0.4246**	**1.6200e-003**	**0.1198**	**1.3200e-003**	**0.1211**	**0.0321**	**1.2300e-003**	**0.0334**	**0.0000**	**150.1850**	**150.1850**	**6.1600e-003**	**0.0000**	**150.3391**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.8900e-003	0.2189	0.0594	5.6000e-004	0.0131	4.5000e-004	0.0135	3.8100e-003	4.3000e-004	4.2400e-003	0.0000	54.6853	54.6853	3.3500e-003	0.0000	54.7691
Worker	0.0416	0.0324	0.3652	1.0600e-003	0.0976	8.7000e-004	0.0984	0.0261	8.0000e-004	0.0269	0.0000	95.4997	95.4997	2.8100e-003	0.0000	95.5700
Total	**0.0484**	**0.2513**	**0.4246**	**1.6200e-003**	**0.1107**	**1.3200e-003**	**0.1120**	**0.0299**	**1.2300e-003**	**0.0311**	**0.0000**	**150.1850**	**150.1850**	**6.1600e-003**	**0.0000**	**150.3391**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0879	0.8042	0.8427	1.3900e-003		0.0417	0.0417		0.0392	0.0392	0.0000	119.3385	119.3385	0.0286	0.0000	120.0533
Total	**0.0879**	**0.8042**	**0.8427**	**1.3900e-003**		**0.0417**	**0.0417**		**0.0392**	**0.0392**	**0.0000**	**119.3385**	**119.3385**	**0.0286**	**0.0000**	**120.0533**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5500e-003	0.0821	0.0222	2.2000e-004	5.5100e-003	1.5000e-004	5.6700e-003	1.5900e-003	1.5000e-004	1.7400e-003	0.0000	21.3912	21.3912	1.2800e-003	0.0000	21.4232
Worker	0.0154	0.0115	0.1328	4.0000e-004	0.0418	3.3000e-004	0.0421	0.0111	3.1000e-004	0.0114	0.0000	36.3628	36.3628	1.0000e-003	0.0000	36.3879
Total	**0.0179**	**0.0936**	**0.1550**	**6.2000e-004**	**0.0473**	**4.8000e-004**	**0.0478**	**0.0127**	**4.6000e-004**	**0.0131**	**0.0000**	**57.7541**	**57.7541**	**2.2800e-003**	**0.0000**	**57.8110**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0879	0.8042	0.8427	1.3900e-003		0.0417	0.0417		0.0392	0.0392	0.0000	119.3384	119.3384	0.0286	0.0000	120.0531
Total	**0.0879**	**0.8042**	**0.8427**	**1.3900e-003**		**0.0417**	**0.0417**		**0.0392**	**0.0392**	**0.0000**	**119.3384**	**119.3384**	**0.0286**	**0.0000**	**120.0531**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5500e-003	0.0821	0.0222	2.2000e-004	5.1600e-003	1.5000e-004	5.3200e-003	1.5100e-003	1.5000e-004	1.6500e-003	0.0000	21.3912	21.3912	1.2800e-003	0.0000	21.4232
Worker	0.0154	0.0115	0.1328	4.0000e-004	0.0385	3.3000e-004	0.0388	0.0103	3.1000e-004	0.0106	0.0000	36.3628	36.3628	1.0000e-003	0.0000	36.3879
Total	**0.0179**	**0.0936**	**0.1550**	**6.2000e-004**	**0.0437**	**4.8000e-004**	**0.0442**	**0.0118**	**4.6000e-004**	**0.0123**	**0.0000**	**57.7541**	**57.7541**	**2.2800e-003**	**0.0000**	**57.8110**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2281	0.2989	4.7000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	41.0565	41.0565	0.0133	0.0000	41.3885
Paving	7.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0234**	**0.2281**	**0.2989**	**4.7000e-004**		**0.0116**	**0.0116**		**0.0107**	**0.0107**	**0.0000**	**41.0565**	**41.0565**	**0.0133**	**0.0000**	**41.3885**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	9.3000e-004	0.0107	3.0000e-005	3.3700e-003	3.0000e-005	3.4000e-003	8.9000e-004	2.0000e-005	9.2000e-004	0.0000	2.9340	2.9340	8.0000e-005	0.0000	2.9361
Total	**1.2400e-003**	**9.3000e-004**	**0.0107**	**3.0000e-005**	**3.3700e-003**	**3.0000e-005**	**3.4000e-003**	**8.9000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**2.9340**	**2.9340**	**8.0000e-005**	**0.0000**	**2.9361**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0226	0.2281	0.2989	4.7000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	41.0564	41.0564	0.0133	0.0000	41.3884
Paving	7.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0234**	**0.2281**	**0.2989**	**4.7000e-004**		**0.0116**	**0.0116**		**0.0107**	**0.0107**	**0.0000**	**41.0564**	**41.0564**	**0.0133**	**0.0000**	**41.3884**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	9.3000e-004	0.0107	3.0000e-005	3.1100e-003	3.0000e-005	3.1300e-003	8.3000e-004	2.0000e-005	8.6000e-004	0.0000	2.9340	2.9340	8.0000e-005	0.0000	2.9361
Total	**1.2400e-003**	**9.3000e-004**	**0.0107**	**3.0000e-005**	**3.1100e-003**	**3.0000e-005**	**3.1300e-003**	**8.3000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.9340**	**2.9340**	**8.0000e-005**	**0.0000**	**2.9361**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4526					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0289	0.0372	6.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	5.2342	5.2342	3.4000e-004	0.0000	5.2427
Total	**0.4568**	**0.0289**	**0.0372**	**6.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**5.2342**	**5.2342**	**3.4000e-004**	**0.0000**	**5.2427**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	9.3000e-004	0.0107	3.0000e-005	3.3700e-003	3.0000e-005	3.4000e-003	8.9000e-004	2.0000e-005	9.2000e-004	0.0000	2.9340	2.9340	8.0000e-005	0.0000	2.9361
Total	**1.2400e-003**	**9.3000e-004**	**0.0107**	**3.0000e-005**	**3.3700e-003**	**3.0000e-005**	**3.4000e-003**	**8.9000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**2.9340**	**2.9340**	**8.0000e-005**	**0.0000**	**2.9361**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4526					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1900e-003	0.0289	0.0372	6.0000e-005		1.6800e-003	1.6800e-003		1.6800e-003	1.6800e-003	0.0000	5.2342	5.2342	3.4000e-004	0.0000	5.2427
Total	**0.4568**	**0.0289**	**0.0372**	**6.0000e-005**		**1.6800e-003**	**1.6800e-003**		**1.6800e-003**	**1.6800e-003**	**0.0000**	**5.2342**	**5.2342**	**3.4000e-004**	**0.0000**	**5.2427**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	9.3000e-004	0.0107	3.0000e-005	3.1100e-003	3.0000e-005	3.1300e-003	8.3000e-004	2.0000e-005	8.6000e-004	0.0000	2.9340	2.9340	8.0000e-005	0.0000	2.9361
Total	**1.2400e-003**	**9.3000e-004**	**0.0107**	**3.0000e-005**	**3.1100e-003**	**3.0000e-005**	**3.1300e-003**	**8.3000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.9340**	**2.9340**	**8.0000e-005**	**0.0000**	**2.9361**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2858	1.5053	3.9448	0.0144	1.1906	0.0120	1.2026	0.3192	0.0112	0.3304	0.0000	1,330.3097	1,330.3097	0.0684	0.0000	1,332.0196
Unmitigated	0.2858	1.5053	3.9448	0.0144	1.1906	0.0120	1.2026	0.3192	0.0112	0.3304	0.0000	1,330.3097	1,330.3097	0.0684	0.0000	1,332.0196

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	918.00	918.00	918.00	3,136,945	3,136,945
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	918.00	918.00	918.00	3,136,945	3,136,945

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
General Office Building	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Parking Lot	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Regional Shopping Center	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Single Family Housing	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	161.5821	161.5821	9.1800e-003	1.9000e-003	162.3776
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	161.5821	161.5821	9.1800e-003	1.9000e-003	162.3776
NaturalGas Mitigated	9.8700e-003	0.0845	0.0368	5.4000e-004		6.8200e-003	6.8200e-003		6.8200e-003	6.8200e-003	0.0000	97.6989	97.6989	1.8700e-003	1.7900e-003	98.2795
NaturalGas Unmitigated	9.8700e-003	0.0845	0.0368	5.4000e-004		6.8200e-003	6.8200e-003		6.8200e-003	6.8200e-003	0.0000	97.6989	97.6989	1.8700e-003	1.7900e-003	98.2795

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	731357	3.9400e-003	0.0337	0.0143	2.2000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	39.0280	39.0280	7.5000e-004	7.2000e-004	39.2599
General Office Building	31350.2	1.7000e-004	1.5400e-003	1.2900e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6730	1.6730	3.0000e-005	3.0000e-005	1.6829
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	10100	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5390	0.5390	1.0000e-005	1.0000e-005	0.5422
Single Family Housing	1.058e+006	5.7000e-003	0.0488	0.0208	3.1000e-004		3.9400e-003	3.9400e-003		3.9400e-003	3.9400e-003	0.0000	56.4590	56.4590	1.0800e-003	1.0400e-003	56.7945
Total		**9.8600e-003**	**0.0845**	**0.0368**	**5.4000e-004**		**6.8200e-003**	**6.8200e-003**		**6.8200e-003**	**6.8200e-003**	**0.0000**	**97.6989**	**97.6989**	**1.8700e-003**	**1.8000e-003**	**98.2795**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	731357	3.9400e-003	0.0337	0.0143	2.2000e-004		2.7200e-003	2.7200e-003		2.7200e-003	2.7200e-003	0.0000	39.0280	39.0280	7.5000e-004	7.2000e-004	39.2599
General Office Building	31350.2	1.7000e-004	1.5400e-003	1.2900e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.6730	1.6730	3.0000e-005	3.0000e-005	1.6829
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	10100	5.0000e-005	5.0000e-004	4.2000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.5390	0.5390	1.0000e-005	1.0000e-005	0.5422
Single Family Housing	1.058e+006	5.7000e-003	0.0488	0.0208	3.1000e-004		3.9400e-003	3.9400e-003		3.9400e-003	3.9400e-003	0.0000	56.4590	56.4590	1.0800e-003	1.0400e-003	56.7945
Total		**9.8600e-003**	**0.0845**	**0.0368**	**5.4000e-004**		**6.8200e-003**	**6.8200e-003**		**6.8200e-003**	**6.8200e-003**	**0.0000**	**97.6989**	**97.6989**	**1.8700e-003**	**1.8000e-003**	**98.2795**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	254419	58.9050	3.3500e-003	6.9000e-004	59.1950
General Office Building	47985.7	11.1100	6.3000e-004	1.3000e-004	11.1647
Parking Lot	8960	2.0745	1.2000e-004	2.0000e-005	2.0847
Regional Shopping Center	57772	13.3758	7.6000e-004	1.6000e-004	13.4416
Single Family Housing	328760	76.1169	4.3200e-003	8.9000e-004	76.4917
Total		**161.5821**	**9.1800e-003**	**1.8900e-003**	**162.3776**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	254419	58.9050	3.3500e-003	6.9000e-004	59.1950
General Office Building	47985.7	11.1100	6.3000e-004	1.3000e-004	11.1647
Parking Lot	8960	2.0745	1.2000e-004	2.0000e-005	2.0847
Regional Shopping Center	57772	13.3758	7.6000e-004	1.6000e-004	13.4416
Single Family Housing	328760	76.1169	4.3200e-003	8.9000e-004	76.4917
Total		**161.5821**	**9.1800e-003**	**1.8900e-003**	**162.3776**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6083	0.0125	1.0849	6.0000e-005		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	1.7706	1.7706	1.7100e-003	0.0000	1.8134
Unmitigated	0.6107	0.0310	1.0928	1.8000e-004		7.4900e-003	7.4900e-003		7.4900e-003	7.4900e-003	0.0000	23.2028	23.2028	2.1200e-003	3.9000e-004	23.3730

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0454					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.1700e-003	0.0185	7.8800e-003	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.4322	21.4322	4.1000e-004	3.9000e-004	21.5596
Landscaping	0.0328	0.0125	1.0849	6.0000e-005		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	1.7706	1.7706	1.7100e-003	0.0000	1.8134
Total	**0.6107**	**0.0310**	**1.0928**	**1.8000e-004**		**7.4900e-003**	**7.4900e-003**		**7.4900e-003**	**7.4900e-003**	**0.0000**	**23.2028**	**23.2028**	**2.1200e-003**	**3.9000e-004**	**23.3730**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0453					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0328	0.0125	1.0849	6.0000e-005		5.9900e-003	5.9900e-003		5.9900e-003	5.9900e-003	0.0000	1.7706	1.7706	1.7100e-003	0.0000	1.8134
Total	**0.6083**	**0.0125**	**1.0849**	**6.0000e-005**		**5.9900e-003**	**5.9900e-003**		**5.9900e-003**	**5.9900e-003**	**0.0000**	**1.7706**	**1.7706**	**1.7100e-003**	**0.0000**	**1.8134**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	32.7312	0.2057	5.1800e-003	39.4174
Unmitigated	38.7170	0.2570	6.4500e-003	47.0638

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.16986 / 2.62882	20.6559	0.1370	3.4400e-003	25.1040
General Office Building	0.609627 / 0.373642	2.9924	0.0200	5.0000e-004	3.6425
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.374066 / 0.229266	1.8361	0.0123	3.1000e-004	2.2351
Single Family Housing	2.67132 / 1.68409	13.2327	0.0878	2.2000e-003	16.0823
Total		**38.7170**	**0.2570**	**6.4500e-003**	**47.0639**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	3.33589 / 2.46847	17.4646	0.1096	2.7600e-003	21.0278
General Office Building	0.487701 / 0.35085	2.5275	0.0160	4.0000e-004	3.0483
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.299253 / 0.215281	1.5509	9.8300e-003	2.5000e-004	1.8704
Single Family Housing	2.13705 / 1.58136	11.1883	0.0702	1.7700e-003	13.4709
Total		**32.7312**	**0.2057**	**5.1800e-003**	**39.4174**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8.7185	0.5153	0.0000	21.5996
Unmitigated	17.4369	1.0305	0.0000	43.1992

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	29.44	5.9761	0.3532	0.0000	14.8054
General Office Building	3.19	0.6475	0.0383	0.0000	1.6043
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	5.3	1.0759	0.0636	0.0000	2.6654
Single Family Housing	47.97	9.7375	0.5755	0.0000	24.1242
Total		**17.4369**	**1.0305**	**0.0000**	**43.1993**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	14.72	2.9880	0.1766	0.0000	7.4027
General Office Building	1.595	0.3238	0.0191	0.0000	0.8021
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	2.65	0.5379	0.0318	0.0000	1.3327
Single Family Housing	23.985	4.8687	0.2877	0.0000	12.0621
Total		**8.7185**	**0.5152**	**0.0000**	**21.5996**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gardner Rosecrans Project

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	3.43	1000sqft	0.00	3,430.00	0
Parking Lot	64.00	Space	0.58	25,600.00	0
Apartments Mid Rise	64.00	Dwelling Unit	3.00	64,000.00	183
Single Family Housing	41.00	Dwelling Unit	1.30	73,800.00	117
Regional Shopping Center	5.05	1000sqft	0.54	5,050.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	510.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Gardner Rosecrans Project - Los Angeles-South Coast County, Summer

Project Characteristics - Adjusted per the SCE 2018 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 513-25*0.029-298*0.00617=510.43 to avoid double counting.

Land Use - 41 single family, (50 3-story townhomes + 14 3-story live/work units) = 64, live/work workspace = 3,430 sf, retail = 5,050 sf
Density 21.3 DU/AC - site plan,
274 parking spaces / 210 garage and 64 parking lot1.59+

Construction Phase - used start and end construction dates and proportionally extended default schedule

Demolition - Construction Data Needs 175,000 sq ft of demo

Grading - Construction Data Needs Import 3615 CY

Architectural Coating - Architectural Coating - Rule 1113

Trips and VMT -

Vehicle Trips - 918 daily Trips with internal capture- from TIA, 918/64=14.34375

Woodstoves - no wood burning stoves

Energy Use -

Area Coating - low VOC

Operational Off-Road Equipment -

Construction Off-road Equipment Mitigation - Rule 403

Waste Mitigation -

Area Mitigation - use low VOC

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50

Gardner Rosecrans Project - Los Angeles-South Coast County, Summer

tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	230.00	480.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	10.00	21.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	3.20	0.00
tblFireplaces	NumberWood	2.05	0.00
tblGrading	MaterialImported	0.00	3,615.00
tblLandUse	LotAcreage	0.08	0.00
tblLandUse	LotAcreage	1.68	3.00
tblLandUse	LotAcreage	13.31	1.30
tblLandUse	LotAcreage	0.12	0.54
tblProjectCharacteristics	CO2IntensityFactor	702.44	510.43
tblVehicleTrips	ST_TR	6.39	14.34
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	5.86	14.34
tblVehicleTrips	SU_TR	1.05	0.00

tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	6.65	14.34
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1593	42.4763	23.6470	0.0559	18.2675	2.1991	20.4666	9.9840	2.0232	12.0072	0.0000	5,585.6880	5,585.6880	1.1985	0.0000	5,615.1032
2021	2.2698	19.3007	19.9872	0.0398	0.9360	0.9687	1.9047	0.2507	0.9107	1.1614	0.0000	3,863.3507	3,863.3507	0.6684	0.0000	3,880.0600
2022	22.3407	17.3822	19.5215	0.0394	0.9360	0.8184	1.7544	0.2507	0.7699	1.0207	0.0000	3,830.6067	3,830.6067	0.7186	0.0000	3,847.1309
Maximum	**22.3407**	**42.4763**	**23.6470**	**0.0559**	**18.2675**	**2.1991**	**20.4666**	**9.9840**	**2.0232**	**12.0072**	**0.0000**	**5,585.6880**	**5,585.6880**	**1.1985**	**0.0000**	**5,615.1032**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1593	42.4763	23.6470	0.0559	8.3153	2.1991	10.5144	4.5183	2.0232	6.5415	0.0000	5,585.6880	5,585.6880	1.1985	0.0000	5,615.1032
2021	2.2698	19.3007	19.9872	0.0398	0.8643	0.9687	1.8330	0.2331	0.9107	1.1438	0.0000	3,863.3507	3,863.3507	0.6684	0.0000	3,880.0600
2022	22.3407	17.3822	19.5215	0.0394	0.8643	0.8184	1.6827	0.2331	0.7699	1.0031	0.0000	3,830.6067	3,830.6067	0.7186	0.0000	3,847.1309
Maximum	**22.3407**	**42.4763**	**23.6470**	**0.0559**	**8.3153**	**2.1991**	**10.5144**	**4.5183**	**2.0232**	**6.5415**	**0.0000**	**5,585.6880**	**5,585.6880**	**1.1985**	**0.0000**	**5,615.1032**

Gardner Rosecrans Project - Los Angeles-South Coast County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.13**	**0.00**	**41.85**	**52.46**	**0.00**	**38.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.5902	1.5806	9.3094	9.9100e-003		0.1676	0.1676		0.1676	0.1676	0.0000	1,905.6139	1,905.6139	0.0513	0.0347	1,917.2224
Energy	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144
Mobile	1.6554	7.9254	22.5449	0.0820	6.6705	0.0661	6.7366	1.7852	0.0617	1.8468		8,347.5380	8,347.5380	0.4173		8,357.9710
Total	**5.2997**	**9.9689**	**32.0559**	**0.0949**	**6.6705**	**0.2711**	**6.9417**	**1.7852**	**0.2667**	**2.0518**	**0.0000**	**10,843.2595**	**10,843.2595**	**0.4800**	**0.0455**	**10,868.8078**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4160	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479	0.0000	15.6139	15.6139	0.0151	0.0000	15.9911
Energy	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144
Mobile	1.6554	7.9254	22.5449	0.0820	6.6705	0.0661	6.7366	1.7852	0.0617	1.8468		8,347.5380	8,347.5380	0.4173		8,357.9710
Total	**5.1255**	**8.4884**	**31.4259**	**0.0854**	**6.6705**	**0.1514**	**6.8220**	**1.7852**	**0.1470**	**1.9321**	**0.0000**	**8,953.2595**	**8,953.2595**	**0.4437**	**0.0108**	**8,967.5765**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.29**	**14.85**	**1.97**	**9.96**	**0.00**	**44.15**	**1.72**	**0.00**	**44.89**	**5.83**	**0.00**	**17.43**	**17.43**	**7.55**	**76.20**	**17.49**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/2/2020	4/27/2020	5	41	
2	Site Preparation	Site Preparation	4/28/2020	5/26/2020	5	21	
3	Grading	Grading	5/27/2020	7/22/2020	5	41	
4	Building Construction	Building Construction	7/23/2020	5/25/2022	5	480	
5	Paving	Paving	5/26/2022	7/21/2022	5	41	
6	Architectural Coating	Architectural Coating	7/22/2022	9/16/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 20.5

Acres of Paving: 0.58

Residential Indoor: 279,045; Residential Outdoor: 93,015; Non-Residential Indoor: 12,720; Non-Residential Outdoor: 4,240; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Gardner Rosecrans Project - Los Angeles-South Coast County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	796.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	452.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	74.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2015	0.0000	4.2015	0.6362	0.0000	0.6362			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**4.2015**	**1.6587**	**5.8602**	**0.6362**	**1.5419**	**2.1780**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1696	5.5825	1.2370	0.0153	0.3395	0.0178	0.3573	0.0931	0.0171	0.1101		1,661.5662	1,661.5662	0.1131		1,664.3936
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.2386**	**5.6316**	**1.8938**	**0.0171**	**0.5071**	**0.0192**	**0.5263**	**0.1375**	**0.0183**	**0.1559**		**1,837.9831**	**1,837.9831**	**0.1187**		**1,840.9496**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8907	0.0000	1.8907	0.2863	0.0000	0.2863			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**1.8907**	**1.6587**	**3.5494**	**0.2863**	**1.5419**	**1.8281**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1696	5.5825	1.2370	0.0153	0.3164	0.0178	0.3342	0.0874	0.0171	0.1044		1,661.5662	1,661.5662	0.1131		1,664.3936
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1546	1.4000e-003	0.1560	0.0413	1.2900e-003	0.0425		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.2386**	**5.6316**	**1.8938**	**0.0171**	**0.4709**	**0.0192**	**0.4901**	**0.1286**	**0.0183**	**0.1470**		**1,837.9831**	**1,837.9831**	**0.1187**		**1,840.9496**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.1855	1.6800e-003	0.1871	0.0495	1.5500e-003	0.0510		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.1855**	**1.6800e-003**	**0.1871**	**0.0495**	**1.5500e-003**	**0.0510**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5623	0.0000	6.5623	3.3690	0.0000	3.3690			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5623**	**1.2734**	**7.8357**	**3.3690**	**1.1716**	**4.5405**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0963	3.1700	0.7024	8.7100e-003	0.1928	0.0101	0.2029	0.0528	9.6800e-003	0.0625		943.5024	943.5024	0.0642		945.1079
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.1653**	**3.2191**	**1.3592**	**0.0105**	**0.3604**	**0.0115**	**0.3719**	**0.0973**	**0.0110**	**0.1083**		**1,119.9193**	**1,119.9193**	**0.0698**		**1,121.6639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9530	0.0000	2.9530	1.5161	0.0000	1.5161			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**2.9530**	**1.2734**	**4.2265**	**1.5161**	**1.1716**	**2.6876**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0963	3.1700	0.7024	8.7100e-003	0.1796	0.0101	0.1898	0.0496	9.6800e-003	0.0593		943.5024	943.5024	0.0642		945.1079
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1546	1.4000e-003	0.1560	0.0413	1.2900e-003	0.0425		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.1653**	**3.2191**	**1.3592**	**0.0105**	**0.3342**	**0.0115**	**0.3457**	**0.0909**	**0.0110**	**0.1018**		**1,119.9193**	**1,119.9193**	**0.0698**		**1,121.6639**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0605	1.8083	0.4738	4.4100e-003	0.1088	8.5100e-003	0.1174	0.0313	8.1400e-003	0.0395		470.9420	470.9420	0.0287		471.6604
Worker	0.3406	0.2423	3.2401	8.7400e-003	0.8272	6.9100e-003	0.8341	0.2194	6.3700e-003	0.2257		870.3235	870.3235	0.0274		871.0095
Total	**0.4010**	**2.0506**	**3.7139**	**0.0132**	**0.9360**	**0.0154**	**0.9514**	**0.2507**	**0.0145**	**0.2652**		**1,341.2655**	**1,341.2655**	**0.0562**		**1,342.6700**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0605	1.8083	0.4738	4.4100e-003	0.1019	8.5100e-003	0.1104	0.0296	8.1400e-003	0.0378		470.9420	470.9420	0.0287		471.6604
Worker	0.3406	0.2423	3.2401	8.7400e-003	0.7624	6.9100e-003	0.7693	0.2035	6.3700e-003	0.2099		870.3235	870.3235	0.0274		871.0095
Total	**0.4010**	**2.0506**	**3.7139**	**0.0132**	**0.8643**	**0.0154**	**0.8797**	**0.2331**	**0.0145**	**0.2476**		**1,341.2655**	**1,341.2655**	**0.0562**		**1,342.6700**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0517	1.6505	0.4315	4.3700e-003	0.1088	3.3800e-003	0.1122	0.0313	3.2300e-003	0.0346		467.2971	467.2971	0.0275		467.9853
Worker	0.3172	0.2180	2.9805	8.4600e-003	0.8272	6.6800e-003	0.8338	0.2194	6.1600e-003	0.2255		842.6897	842.6897	0.0248		843.3104
Total	**0.3689**	**1.8686**	**3.4120**	**0.0128**	**0.9360**	**0.0101**	**0.9460**	**0.2507**	**9.3900e-003**	**0.2601**		**1,309.9868**	**1,309.9868**	**0.0524**		**1,311.2958**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0517	1.6505	0.4315	4.3700e-003	0.1019	3.3800e-003	0.1052	0.0296	3.2300e-003	0.0329		467.2971	467.2971	0.0275		467.9853
Worker	0.3172	0.2180	2.9805	8.4600e-003	0.7624	6.6800e-003	0.7691	0.2035	6.1600e-003	0.2096		842.6897	842.6897	0.0248		843.3104
Total	**0.3689**	**1.8686**	**3.4120**	**0.0128**	**0.8643**	**0.0101**	**0.8743**	**0.2331**	**9.3900e-003**	**0.2425**		**1,309.9868**	**1,309.9868**	**0.0524**		**1,311.2958**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0485	1.5696	0.4083	4.3300e-003	0.1088	2.9500e-003	0.1118	0.0313	2.8200e-003	0.0342		463.2260	463.2260	0.0266		463.8906
Worker	0.2971	0.1970	2.7499	8.1600e-003	0.8272	6.4700e-003	0.8336	0.2194	5.9600e-003	0.2253		813.0471	813.0471	0.0224		813.6081
Total	**0.3456**	**1.7666**	**3.1581**	**0.0125**	**0.9360**	**9.4200e-003**	**0.9454**	**0.2507**	**8.7800e-003**	**0.2595**		**1,276.2731**	**1,276.2731**	**0.0490**		**1,277.4987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0485	1.5696	0.4083	4.3300e-003	0.1019	2.9500e-003	0.1048	0.0296	2.8200e-003	0.0325		463.2260	463.2260	0.0266		463.8906
Worker	0.2971	0.1970	2.7499	8.1600e-003	0.7624	6.4700e-003	0.7689	0.2035	5.9600e-003	0.2094		813.0471	813.0471	0.0224		813.6081
Total	**0.3456**	**1.7666**	**3.1581**	**0.0125**	**0.8643**	**9.4200e-003**	**0.8737**	**0.2331**	**8.7800e-003**	**0.2419**		**1,276.2731**	**1,276.2731**	**0.0490**		**1,277.4987**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1399**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1399**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1546**	**1.3100e-003**	**0.1559**	**0.0413**	**1.2100e-003**	**0.0425**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.0759					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**22.2805**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.0759					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**22.2805**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0602	0.0399	0.5574	1.6500e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1546**	**1.3100e-003**	**0.1559**	**0.0413**	**1.2100e-003**	**0.0425**		**164.8069**	**164.8069**	**4.5500e-003**		**164.9206**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6554	7.9254	22.5449	0.0820	6.6705	0.0661	6.7366	1.7852	0.0617	1.8468		8,347.5380	8,347.5380	0.4173		8,357.9710
Unmitigated	1.6554	7.9254	22.5449	0.0820	6.6705	0.0661	6.7366	1.7852	0.0617	1.8468		8,347.5380	8,347.5380	0.4173		8,357.9710

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	918.00	918.00	918.00	3,136,945	3,136,945
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	918.00	918.00	918.00	3,136,945	3,136,945

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
General Office Building	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Parking Lot	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Regional Shopping Center	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Single Family Housing	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144
NaturalGas Unmitigated	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2003.72	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149		235.7317	235.7317	4.5200e-003	4.3200e-003	237.1325
General Office Building	85.891	9.3000e-004	8.4200e-003	7.0700e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004		10.1048	10.1048	1.9000e-004	1.9000e-004	10.1649
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	27.6712	3.0000e-004	2.7100e-003	2.2800e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		3.2554	3.2554	6.0000e-005	6.0000e-005	3.2748
Single Family Housing	2898.63	0.0313	0.2671	0.1137	1.7100e-003		0.0216	0.0216		0.0216	0.0216		341.0157	341.0157	6.5400e-003	6.2500e-003	343.0422
Total		**0.0541**	**0.4629**	**0.2016**	**2.9600e-003**		**0.0374**	**0.0374**		**0.0374**	**0.0374**		**590.1076**	**590.1076**	**0.0113**	**0.0108**	**593.6144**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.00372	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149		235.7317	235.7317	4.5200e-003	4.3200e-003	237.1325
General Office Building	0.085891	9.3000e-004	8.4200e-003	7.0700e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004		10.1048	10.1048	1.9000e-004	1.9000e-004	10.1649
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0276712	3.0000e-004	2.7100e-003	2.2800e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		3.2554	3.2554	6.0000e-005	6.0000e-005	3.2748
Single Family Housing	2.89863	0.0313	0.2671	0.1137	1.7100e-003		0.0216	0.0216		0.0216	0.0216		341.0157	341.0157	6.5400e-003	6.2500e-003	343.0422
Total		**0.0541**	**0.4629**	**0.2016**	**2.9600e-003**		**0.0374**	**0.0374**		**0.0374**	**0.0374**		**590.1076**	**590.1076**	**0.0113**	**0.0108**	**593.6144**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4160	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479	0.0000	15.6139	15.6139	0.0151	0.0000	15.9911
Unmitigated	3.5902	1.5806	9.3094	9.9100e-003		0.1676	0.1676		0.1676	0.1676	0.0000	1,905.6139	1,905.6139	0.0513	0.0347	1,917.2224

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2490					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1733	1.4805	0.6300	9.4500e-003		0.1197	0.1197		0.1197	0.1197	0.0000	1,890.0000	1,890.0000	0.0362	0.0347	1,901.2313
Landscaping	0.2626	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479		15.6139	15.6139	0.0151		15.9911
Total	**3.5902**	**1.5806**	**9.3094**	**9.9100e-003**		**0.1676**	**0.1676**		**0.1676**	**0.1676**	**0.0000**	**1,905.6139**	**1,905.6139**	**0.0513**	**0.0347**	**1,917.2224**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2480					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2626	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479		15.6139	15.6139	0.0151		15.9911
Total	**3.4160**	**0.1001**	**8.6794**	**4.6000e-004**		**0.0479**	**0.0479**		**0.0479**	**0.0479**	**0.0000**	**15.6139**	**15.6139**	**0.0151**	**0.0000**	**15.9911**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gardner Rosecrans Project

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	3.43	1000sqft	0.00	3,430.00	0
Parking Lot	64.00	Space	0.58	25,600.00	0
Apartments Mid Rise	64.00	Dwelling Unit	3.00	64,000.00	183
Single Family Housing	41.00	Dwelling Unit	1.30	73,800.00	117
Regional Shopping Center	5.05	1000sqft	0.54	5,050.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	510.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Gardner Rosecrans Project - Los Angeles-South Coast County, Winter

Project Characteristics - Adjusted per the SCE 2018 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 513-25*0.029-298*0.00617=510.43 to avoid double counting.

Land Use - 41 single family, (50 3-story townhomes + 14 3-story live/work units) = 64, live/work workspace = 3,430 sf, retail = 5,050 sf
Density 21.3 DU/AC - site plan,
274 parking spaces / 210 garage and 64 parking lot1.59+

Construction Phase - used start and end construction dates and proportionally extended default schedule

Demolition - Construction Data Needs 175,000 sq ft of demo

Grading - Construction Data Needs Import 3615 CY

Architectural Coating - Architectural Coating - Rule 1113

Trips and VMT -

Vehicle Trips - 918 daily Trips with internal capture- from TIA, 918/64=14.34375

Woodstoves - no wood burning stoves

Energy Use -

Area Coating - low VOC

Operational Off-Road Equipment -

Construction Off-road Equipment Mitigation - Rule 403

Waste Mitigation -

Area Mitigation - use low VOC

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	50

Gardner Rosecrans Project - Los Angeles-South Coast County, Winter

tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblAreaMitigation	UseLowVOCPaintParkingValue	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	230.00	480.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	10.00	21.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	3.20	0.00
tblFireplaces	NumberWood	2.05	0.00
tblGrading	MaterialImported	0.00	3,615.00
tblLandUse	LotAcreage	0.08	0.00
tblLandUse	LotAcreage	1.68	3.00
tblLandUse	LotAcreage	13.31	1.30
tblLandUse	LotAcreage	0.12	0.54
tblProjectCharacteristics	CO2IntensityFactor	702.44	510.43
tblVehicleTrips	ST_TR	6.39	14.34
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	5.86	14.34
tblVehicleTrips	SU_TR	1.05	0.00

tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	6.65	14.34
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1685	42.4826	23.6694	0.0556	18.2675	2.1991	20.4666	9.9840	2.0232	12.0072	0.0000	5,546.7713	5,546.7713	1.1981	0.0000	5,576.2811
2021	2.3080	19.3206	19.7776	0.0391	0.9360	0.9688	1.9048	0.2507	0.9108	1.1615	0.0000	3,801.3171	3,801.3171	0.6687	0.0000	3,818.0347
2022	22.3477	17.3990	19.3251	0.0388	0.9360	0.8185	1.7545	0.2507	0.7700	1.0207	0.0000	3,770.3645	3,770.3645	0.7183	0.0000	3,786.8978
Maximum	**22.3477**	**42.4826**	**23.6694**	**0.0556**	**18.2675**	**2.1991**	**20.4666**	**9.9840**	**2.0232**	**12.0072**	**0.0000**	**5,546.7713**	**5,546.7713**	**1.1981**	**0.0000**	**5,576.2811**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1685	42.4826	23.6694	0.0556	8.3153	2.1991	10.5144	4.5183	2.0232	6.5415	0.0000	5,546.7713	5,546.7713	1.1981	0.0000	5,576.2811
2021	2.3080	19.3206	19.7776	0.0391	0.8643	0.9688	1.8331	0.2331	0.9108	1.1439	0.0000	3,801.3171	3,801.3171	0.6687	0.0000	3,818.0347
2022	22.3477	17.3990	19.3251	0.0388	0.8643	0.8185	1.6828	0.2331	0.7700	1.0031	0.0000	3,770.3645	3,770.3645	0.7183	0.0000	3,786.8978
Maximum	**22.3477**	**42.4826**	**23.6694**	**0.0556**	**8.3153**	**2.1991**	**10.5144**	**4.5183**	**2.0232**	**6.5415**	**0.0000**	**5,546.7713**	**5,546.7713**	**1.1981**	**0.0000**	**5,576.2811**

Gardner Rosecrans Project - Los Angeles-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**50.13**	**0.00**	**41.85**	**52.46**	**0.00**	**38.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.5902	1.5806	9.3094	9.9100e-003		0.1676	0.1676		0.1676	0.1676	0.0000	1,905.6139	1,905.6139	0.0513	0.0347	1,917.2224
Energy	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144
Mobile	1.6066	8.1200	21.3599	0.0780	6.6705	0.0664	6.7370	1.7852	0.0620	1.8471		7,945.9850	7,945.9850	0.4159		7,956.3819
Total	**5.2510**	**10.1635**	**30.8708**	**0.0909**	**6.6705**	**0.2714**	**6.9420**	**1.7852**	**0.2670**	**2.0521**	**0.0000**	**10,441.7065**	**10,441.7065**	**0.4785**	**0.0455**	**10,467.2187**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.4160	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479	0.0000	15.6139	15.6139	0.0151	0.0000	15.9911
Energy	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144
Mobile	1.6066	8.1200	21.3599	0.0780	6.6705	0.0664	6.7370	1.7852	0.0620	1.8471		7,945.9850	7,945.9850	0.4159		7,956.3819
Total	**5.0767**	**8.6830**	**30.2408**	**0.0814**	**6.6705**	**0.1517**	**6.8223**	**1.7852**	**0.1473**	**1.9324**	**0.0000**	**8,551.7065**	**8,551.7065**	**0.4423**	**0.0108**	**8,565.9874**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.32**	**14.57**	**2.04**	**10.40**	**0.00**	**44.10**	**1.72**	**0.00**	**44.83**	**5.83**	**0.00**	**18.10**	**18.10**	**7.57**	**76.20**	**18.16**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/2/2020	4/27/2020	5	41	
2	Site Preparation	Site Preparation	4/28/2020	5/26/2020	5	21	
3	Grading	Grading	5/27/2020	7/22/2020	5	41	
4	Building Construction	Building Construction	7/23/2020	5/25/2022	5	480	
5	Paving	Paving	5/26/2022	7/21/2022	5	41	
6	Architectural Coating	Architectural Coating	7/22/2022	9/16/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 20.5

Acres of Paving: 0.58

Residential Indoor: 279,045; Residential Outdoor: 93,015; Non-Residential Indoor: 12,720; Non-Residential Outdoor: 4,240; Striped Parking Area: 1,536 (Architectural Coating – sqft)

OffRoad Equipment

Gardner Rosecrans Project - Los Angeles-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	796.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	452.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	74.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.2015	0.0000	4.2015	0.6362	0.0000	0.6362			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**4.2015**	**1.6587**	**5.8602**	**0.6362**	**1.5419**	**2.1780**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1737	5.6548	1.3147	0.0151	0.3395	0.0181	0.3576	0.0931	0.0173	0.1104		1,632.9534	1,632.9534	0.1172		1,635.8836
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.2504**	**5.7091**	**1.9162**	**0.0167**	**0.5071**	**0.0195**	**0.5266**	**0.1375**	**0.0186**	**0.1561**		**1,799.0664**	**1,799.0664**	**0.1225**		**1,802.1275**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8907	0.0000	1.8907	0.2863	0.0000	0.2863			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**1.8907**	**1.6587**	**3.5494**	**0.2863**	**1.5419**	**1.8281**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1737	5.6548	1.3147	0.0151	0.3164	0.0181	0.3344	0.0874	0.0173	0.1047		1,632.9534	1,632.9534	0.1172		1,635.8836
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1546	1.4000e-003	0.1560	0.0413	1.2900e-003	0.0425		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.2504**	**5.7091**	**1.9162**	**0.0167**	**0.4709**	**0.0195**	**0.4904**	**0.1286**	**0.0186**	**0.1472**		**1,799.0664**	**1,799.0664**	**0.1225**		**1,802.1275**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.1298**	**2.1974**	**10.3272**	**4.4688**	**2.0216**	**6.4904**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.1855	1.6800e-003	0.1871	0.0495	1.5500e-003	0.0510		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.1855**	**1.6800e-003**	**0.1871**	**0.0495**	**1.5500e-003**	**0.0510**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5623	0.0000	6.5623	3.3690	0.0000	3.3690			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5623**	**1.2734**	**7.8357**	**3.3690**	**1.1716**	**4.5405**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0986	3.2110	0.7465	8.5600e-003	0.1928	0.0103	0.2030	0.0528	9.8300e-003	0.0627		927.2549	927.2549	0.0666		928.9188
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.1753**	**3.2654**	**1.3480**	**0.0102**	**0.3604**	**0.0117**	**0.3721**	**0.0973**	**0.0111**	**0.1084**		**1,093.3680**	**1,093.3680**	**0.0718**		**1,095.1628**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9530	0.0000	2.9530	1.5161	0.0000	1.5161			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**2.9530**	**1.2734**	**4.2265**	**1.5161**	**1.1716**	**2.6876**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0986	3.2110	0.7465	8.5600e-003	0.1796	0.0103	0.1899	0.0496	9.8300e-003	0.0595		927.2549	927.2549	0.0666		928.9188
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1546	1.4000e-003	0.1560	0.0413	1.2900e-003	0.0425		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.1753**	**3.2654**	**1.3480**	**0.0102**	**0.3342**	**0.0117**	**0.3459**	**0.0909**	**0.0111**	**0.1020**		**1,093.3680**	**1,093.3680**	**0.0718**		**1,095.1628**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0632	1.8080	0.5226	4.2900e-003	0.1088	8.6500e-003	0.1175	0.0313	8.2700e-003	0.0396		458.0634	458.0634	0.0306		458.8292
Worker	0.3782	0.2682	2.9675	8.2300e-003	0.8272	6.9100e-003	0.8341	0.2194	6.3700e-003	0.2257		819.4911	819.4911	0.0258		820.1368
Total	**0.4414**	**2.0762**	**3.4900**	**0.0125**	**0.9360**	**0.0156**	**0.9515**	**0.2507**	**0.0146**	**0.2653**		**1,277.5545**	**1,277.5545**	**0.0565**		**1,278.9660**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0632	1.8080	0.5226	4.2900e-003	0.1019	8.6500e-003	0.1105	0.0296	8.2700e-003	0.0379		458.0634	458.0634	0.0306		458.8292
Worker	0.3782	0.2682	2.9675	8.2300e-003	0.7624	6.9100e-003	0.7693	0.2035	6.3700e-003	0.2099		819.4911	819.4911	0.0258		820.1368
Total	**0.4414**	**2.0762**	**3.4900**	**0.0125**	**0.8643**	**0.0156**	**0.8798**	**0.2331**	**0.0146**	**0.2477**		**1,277.5545**	**1,277.5545**	**0.0565**		**1,278.9660**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0543	1.6471	0.4773	4.2500e-003	0.1088	3.4800e-003	0.1123	0.0313	3.3300e-003	0.0347		454.4874	454.4874	0.0293		455.2209
Worker	0.3529	0.2414	2.7251	7.9600e-003	0.8272	6.6800e-003	0.8338	0.2194	6.1600e-003	0.2255		793.4658	793.4658	0.0234		794.0495
Total	**0.4071**	**1.8885**	**3.2024**	**0.0122**	**0.9360**	**0.0102**	**0.9462**	**0.2507**	**9.4900e-003**	**0.2602**		**1,247.9532**	**1,247.9532**	**0.0527**		**1,249.2704**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0543	1.6471	0.4773	4.2500e-003	0.1019	3.4800e-003	0.1053	0.0296	3.3300e-003	0.0330		454.4874	454.4874	0.0293		455.2209
Worker	0.3529	0.2414	2.7251	7.9600e-003	0.7624	6.6800e-003	0.7691	0.2035	6.1600e-003	0.2096		793.4658	793.4658	0.0234		794.0495
Total	**0.4071**	**1.8885**	**3.2024**	**0.0122**	**0.8643**	**0.0102**	**0.8745**	**0.2331**	**9.4900e-003**	**0.2426**		**1,247.9532**	**1,247.9532**	**0.0527**		**1,249.2704**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0509	1.5654	0.4518	4.2100e-003	0.1088	3.0500e-003	0.1119	0.0313	2.9100e-003	0.0343		450.4495	450.4495	0.0283		451.1572
Worker	0.3314	0.2180	2.5099	7.6800e-003	0.8272	6.4700e-003	0.8336	0.2194	5.9600e-003	0.2253		765.5814	765.5814	0.0211		766.1084
Total	**0.3823**	**1.7833**	**2.9617**	**0.0119**	**0.9360**	**9.5200e-003**	**0.9455**	**0.2507**	**8.8700e-003**	**0.2596**		**1,216.0309**	**1,216.0309**	**0.0494**		**1,217.2656**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0509	1.5654	0.4518	4.2100e-003	0.1019	3.0500e-003	0.1049	0.0296	2.9100e-003	0.0325		450.4495	450.4495	0.0283		451.1572
Worker	0.3314	0.2180	2.5099	7.6800e-003	0.7624	6.4700e-003	0.7689	0.2035	5.9600e-003	0.2094		765.5814	765.5814	0.0211		766.1084
Total	**0.3823**	**1.7833**	**2.9617**	**0.0119**	**0.8643**	**9.5200e-003**	**0.8738**	**0.2331**	**8.8700e-003**	**0.2420**		**1,216.0309**	**1,216.0309**	**0.0494**		**1,217.2656**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1399**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0371					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1399**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1546**	**1.3100e-003**	**0.1559**	**0.0413**	**1.2100e-003**	**0.0425**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.0759					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**22.2805**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1677	1.3100e-003	0.1690	0.0445	1.2100e-003	0.0457		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1677**	**1.3100e-003**	**0.1690**	**0.0445**	**1.2100e-003**	**0.0457**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	22.0759					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**22.2805**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0442	0.5088	1.5600e-003	0.1546	1.3100e-003	0.1559	0.0413	1.2100e-003	0.0425		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1546**	**1.3100e-003**	**0.1559**	**0.0413**	**1.2100e-003**	**0.0425**		**155.1854**	**155.1854**	**4.2700e-003**		**155.2922**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6066	8.1200	21.3599	0.0780	6.6705	0.0664	6.7370	1.7852	0.0620	1.8471		7,945.9850	7,945.9850	0.4159		7,956.3819
Unmitigated	1.6066	8.1200	21.3599	0.0780	6.6705	0.0664	6.7370	1.7852	0.0620	1.8471		7,945.9850	7,945.9850	0.4159		7,956.3819

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	918.00	918.00	918.00	3,136,945	3,136,945
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	918.00	918.00	918.00	3,136,945	3,136,945

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
General Office Building	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Parking Lot	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Regional Shopping Center	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876
Single Family Housing	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144
NaturalGas Unmitigated	0.0541	0.4629	0.2016	2.9500e-003		0.0374	0.0374		0.0374	0.0374		590.1076	590.1076	0.0113	0.0108	593.6144

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2003.72	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149		235.7317	235.7317	4.5200e-003	4.3200e-003	237.1325
General Office Building	85.891	9.3000e-004	8.4200e-003	7.0700e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004		10.1048	10.1048	1.9000e-004	1.9000e-004	10.1649
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	27.6712	3.0000e-004	2.7100e-003	2.2800e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		3.2554	3.2554	6.0000e-005	6.0000e-005	3.2748
Single Family Housing	2898.63	0.0313	0.2671	0.1137	1.7100e-003		0.0216	0.0216		0.0216	0.0216		341.0157	341.0157	6.5400e-003	6.2500e-003	343.0422
Total		**0.0541**	**0.4629**	**0.2016**	**2.9600e-003**		**0.0374**	**0.0374**		**0.0374**	**0.0374**		**590.1076**	**590.1076**	**0.0113**	**0.0108**	**593.6144**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	2.00372	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149		235.7317	235.7317	4.5200e-003	4.3200e-003	237.1325
General Office Building	0.085891	9.3000e-004	8.4200e-003	7.0700e-003	5.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004		10.1048	10.1048	1.9000e-004	1.9000e-004	10.1649
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0276712	3.0000e-004	2.7100e-003	2.2800e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004		3.2554	3.2554	6.0000e-005	6.0000e-005	3.2748
Single Family Housing	2.89863	0.0313	0.2671	0.1137	1.7100e-003		0.0216	0.0216		0.0216	0.0216		341.0157	341.0157	6.5400e-003	6.2500e-003	343.0422
Total		**0.0541**	**0.4629**	**0.2016**	**2.9600e-003**		**0.0374**	**0.0374**		**0.0374**	**0.0374**		**590.1076**	**590.1076**	**0.0113**	**0.0108**	**593.6144**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.4160	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479	0.0000	15.6139	15.6139	0.0151	0.0000	15.9911
Unmitigated	3.5902	1.5806	9.3094	9.9100e-003		0.1676	0.1676		0.1676	0.1676	0.0000	1,905.6139	1,905.6139	0.0513	0.0347	1,917.2224

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2490					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1733	1.4805	0.6300	9.4500e-003		0.1197	0.1197		0.1197	0.1197	0.0000	1,890.0000	1,890.0000	0.0362	0.0347	1,901.2313
Landscaping	0.2626	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479		15.6139	15.6139	0.0151		15.9911
Total	**3.5902**	**1.5806**	**9.3094**	**9.9100e-003**		**0.1676**	**0.1676**		**0.1676**	**0.1676**	**0.0000**	**1,905.6139**	**1,905.6139**	**0.0513**	**0.0347**	**1,917.2224**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2480					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.9054					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2626	0.1001	8.6794	4.6000e-004		0.0479	0.0479		0.0479	0.0479		15.6139	15.6139	0.0151		15.9911
Total	**3.4160**	**0.1001**	**8.6794**	**4.6000e-004**		**0.0479**	**0.0479**		**0.0479**	**0.0479**	**0.0000**	**15.6139**	**15.6139**	**0.0151**	**0.0000**	**15.9911**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gardner Rosecrans Project - Existing (Opperations Only)

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	16.90	1000sqft	0.39	16,900.00	0
Parking Lot	2.88	Acre	2.88	125,452.80	0
Automobile Care Center	25.50	1000sqft	0.59	25,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	510.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per the SCE 2018 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 513-25*0.029-298*0.00617=510.43 to avoid double counting.

Land Use - Total Site = 5.46 ac, 3.86 ca developed and 1.6 ac undeveloped

Construction Phase - Model Operations only

Vehicle Trips - 212 ADT based on Traffic Memo, 212/42.4(total building area) = 5

Energy Use -

Gardner Rosecrans Project - Existing (Opperations Only) - Los Angeles-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	510.43
tblVehicleTrips	ST_TR	23.72	5.00
tblVehicleTrips	ST_TR	2.46	5.00
tblVehicleTrips	SU_TR	11.88	5.00
tblVehicleTrips	SU_TR	1.05	5.00
tblVehicleTrips	WD_TR	23.72	5.00
tblVehicleTrips	WD_TR	11.03	5.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2905	2.5836	2.3445	4.7800e-003	0.1035	0.1308	0.2343	0.0279	0.1230	0.1509	0.0000	423.8652	423.8652	0.0725	0.0000	425.6779
Maximum	**0.2905**	**2.5836**	**2.3445**	**4.7800e-003**	**0.1035**	**0.1308**	**0.2343**	**0.0279**	**0.1230**	**0.1509**	**0.0000**	**423.8652**	**423.8652**	**0.0725**	**0.0000**	**425.6779**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2905	2.5836	2.3445	4.7800e-003	0.1035	0.1308	0.2343	0.0279	0.1230	0.1509	0.0000	423.8649	423.8649	0.0725	0.0000	425.6776
Maximum	**0.2905**	**2.5836**	**2.3445**	**4.7800e-003**	**0.1035**	**0.1308**	**0.2343**	**0.0279**	**0.1230**	**0.1509**	**0.0000**	**423.8649**	**423.8649**	**0.0725**	**0.0000**	**425.6776**

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

Gardner Rosecrans Project - Existing (Opperations Only) - Los Angeles-South Coast County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-12-2019	3-11-2020	0.3923	0.3923
2	3-12-2020	6-11-2020	0.8187	0.8187
3	6-12-2020	9-11-2020	0.8183	0.8183
4	9-12-2020	9-30-2020	0.1690	0.1690
		Highest	0.8187	0.8187

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1828	1.0000e-005	5.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1200e-003	1.1200e-003	0.0000	0.0000	1.2000e-003
Energy	3.7100e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	151.4777	151.4777	7.2300e-003	2.0200e-003	152.2608
Mobile	0.0688	0.3200	0.7984	2.2600e-003	0.1682	2.6700e-003	0.1708	0.0451	2.5100e-003	0.0476	0.0000	208.4816	208.4816	0.0130	0.0000	208.8065
Waste						0.0000	0.0000		0.0000	0.0000	22.9644	0.0000	22.9644	1.3572	0.0000	56.8933
Water						0.0000	0.0000		0.0000	0.0000	1.7141	24.8056	26.5196	0.1775	4.4500e-003	32.2817
Total	**0.2553**	**0.3537**	**0.8272**	**2.4600e-003**	**0.1682**	**5.2300e-003**	**0.1734**	**0.0451**	**5.0700e-003**	**0.0502**	**24.6784**	**384.7659**	**409.4443**	**1.5549**	**6.4700e-003**	**450.2435**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1828	1.0000e-005	5.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1200e-003	1.1200e-003	0.0000	0.0000	1.2000e-003
Energy	3.7100e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	151.4777	151.4777	7.2300e-003	2.0200e-003	152.2608
Mobile	0.0688	0.3200	0.7984	2.2600e-003	0.1682	2.6700e-003	0.1708	0.0451	2.5100e-003	0.0476	0.0000	208.4816	208.4816	0.0130	0.0000	208.8065
Waste						0.0000	0.0000		0.0000	0.0000	22.9644	0.0000	22.9644	1.3572	0.0000	56.8933
Water						0.0000	0.0000		0.0000	0.0000	1.7141	24.8056	26.5196	0.1775	4.4500e-003	32.2817
Total	**0.2553**	**0.3537**	**0.8272**	**2.4600e-003**	**0.1682**	**5.2300e-003**	**0.1734**	**0.0451**	**5.0700e-003**	**0.0502**	**24.6784**	**384.7659**	**409.4443**	**1.5549**	**6.4700e-003**	**450.2435**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/28/2020	12/14/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.88

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	66.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2438	2.2064	1.9376	3.1000e-003		0.1285	0.1285		0.1208	0.1208	0.0000	266.3515	266.3515	0.0650	0.0000	267.9760
Total	**0.2438**	**2.2064**	**1.9376**	**3.1000e-003**		**0.1285**	**0.1285**		**0.1208**	**0.1208**	**0.0000**	**266.3515**	**266.3515**	**0.0650**	**0.0000**	**267.9760**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0117	0.3489	0.0945	8.3000e-004	0.0203	1.6200e-003	0.0219	5.8500e-003	1.5500e-003	7.4100e-003	0.0000	79.9932	79.9932	5.0800e-003	0.0000	80.1203
Worker	0.0350	0.0283	0.3124	8.6000e-004	0.0832	7.1000e-004	0.0839	0.0221	6.5000e-004	0.0227	0.0000	77.5205	77.5205	2.4400e-003	0.0000	77.5816
Total	**0.0467**	**0.3772**	**0.4069**	**1.6900e-003**	**0.1035**	**2.3300e-003**	**0.1058**	**0.0279**	**2.2000e-003**	**0.0302**	**0.0000**	**157.5138**	**157.5138**	**7.5200e-003**	**0.0000**	**157.7019**

3.2 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2438	2.2064	1.9376	3.1000e-003		0.1285	0.1285		0.1208	0.1208	0.0000	266.3512	266.3512	0.0650	0.0000	267.9757
Total	**0.2438**	**2.2064**	**1.9376**	**3.1000e-003**		**0.1285**	**0.1285**		**0.1208**	**0.1208**	**0.0000**	**266.3512**	**266.3512**	**0.0650**	**0.0000**	**267.9757**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0117	0.3489	0.0945	8.3000e-004	0.0203	1.6200e-003	0.0219	5.8500e-003	1.5500e-003	7.4100e-003	0.0000	79.9932	79.9932	5.0800e-003	0.0000	80.1203
Worker	0.0350	0.0283	0.3124	8.6000e-004	0.0832	7.1000e-004	0.0839	0.0221	6.5000e-004	0.0227	0.0000	77.5205	77.5205	2.4400e-003	0.0000	77.5816
Total	**0.0467**	**0.3772**	**0.4069**	**1.6900e-003**	**0.1035**	**2.3300e-003**	**0.1058**	**0.0279**	**2.2000e-003**	**0.0302**	**0.0000**	**157.5138**	**157.5138**	**7.5200e-003**	**0.0000**	**157.7019**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0688	0.3200	0.7984	2.2600e-003	0.1682	2.6700e-003	0.1708	0.0451	2.5100e-003	0.0476	0.0000	208.4816	208.4816	0.0130	0.0000	208.8065
Unmitigated	0.0688	0.3200	0.7984	2.2600e-003	0.1682	2.6700e-003	0.1708	0.0451	2.5100e-003	0.0476	0.0000	208.4816	208.4816	0.0130	0.0000	208.8065

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	127.50	127.50	127.50	170,793	170,793
General Office Building	84.50	84.50	84.50	272,213	272,213
Parking Lot	0.00	0.00	0.00		
Total	212.00	212.00	212.00	443,006	443,006

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
General Office Building	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Parking Lot	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	114.7945	114.7945	6.5200e-003	1.3500e-003	115.3597
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	114.7945	114.7945	6.5200e-003	1.3500e-003	115.3597
NaturalGas Mitigated	3.7100e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	36.6831	36.6831	7.0000e-004	6.7000e-004	36.9011
NaturalGas Unmitigated	3.7100e-003	0.0337	0.0283	2.0000e-004		2.5600e-003	2.5600e-003		2.5600e-003	2.5600e-003	0.0000	36.6831	36.6831	7.0000e-004	6.7000e-004	36.9011

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	532950	2.8700e-003	0.0261	0.0220	1.6000e-004		1.9900e-003	1.9900e-003		1.9900e-003	1.9900e-003	0.0000	28.4402	28.4402	5.5000e-004	5.2000e-004	28.6093
General Office Building	154466	8.3000e-004	7.5700e-003	6.3600e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	8.2429	8.2429	1.6000e-004	1.5000e-004	8.2919
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.7000e-003**	**0.0337**	**0.0283**	**2.1000e-004**		**2.5700e-003**	**2.5700e-003**		**2.5700e-003**	**2.5700e-003**	**0.0000**	**36.6831**	**36.6831**	**7.1000e-004**	**6.7000e-004**	**36.9011**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	532950	2.8700e-003	0.0261	0.0220	1.6000e-004		1.9900e-003	1.9900e-003		1.9900e-003	1.9900e-003	0.0000	28.4402	28.4402	5.5000e-004	5.2000e-004	28.6093
General Office Building	154466	8.3000e-004	7.5700e-003	6.3600e-003	5.0000e-005		5.8000e-004	5.8000e-004		5.8000e-004	5.8000e-004	0.0000	8.2429	8.2429	1.6000e-004	1.5000e-004	8.2919
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.7000e-003**	**0.0337**	**0.0283**	**2.1000e-004**		**2.5700e-003**	**2.5700e-003**		**2.5700e-003**	**2.5700e-003**	**0.0000**	**36.6831**	**36.6831**	**7.1000e-004**	**6.7000e-004**	**36.9011**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	215475	49.8883	2.8300e-003	5.9000e-004	50.1339
General Office Building	236431	54.7402	3.1100e-003	6.4000e-004	55.0097
Parking Lot	43908.5	10.1660	5.8000e-004	1.2000e-004	10.2161
Total		**114.7945**	**6.5200e-003**	**1.3500e-003**	**115.3597**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	215475	49.8883	2.8300e-003	5.9000e-004	50.1339
General Office Building	236431	54.7402	3.1100e-003	6.4000e-004	55.0097
Parking Lot	43908.5	10.1660	5.8000e-004	1.2000e-004	10.2161
Total		**114.7945**	**6.5200e-003**	**1.3500e-003**	**115.3597**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1828	1.0000e-005	5.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1200e-003	1.1200e-003	0.0000	0.0000	1.2000e-003
Unmitigated	0.1828	1.0000e-005	5.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1200e-003	1.1200e-003	0.0000	0.0000	1.2000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	5.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1200e-003	1.1200e-003	0.0000	0.0000	1.2000e-003
Total	**0.1828**	**1.0000e-005**	**5.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1200e-003**	**1.1200e-003**	**0.0000**	**0.0000**	**1.2000e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1613					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	5.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1200e-003	1.1200e-003	0.0000	0.0000	1.2000e-003
Total	**0.1828**	**1.0000e-005**	**5.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1200e-003**	**1.1200e-003**	**0.0000**	**0.0000**	**1.2000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	26.5196	0.1775	4.4500e-003	32.2817
Unmitigated	26.5196	0.1775	4.4500e-003	32.2817

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	2.39907 / 1.4704	11.7759	0.0788	1.9800e-003	14.3345
General Office Building	3.0037 / 1.84098	14.7437	0.0987	2.4700e-003	17.9472
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.5196**	**0.1775**	**4.4500e-003**	**32.2817**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	2.39907 / 1.4704	11.7759	0.0788	1.9800e-003	14.3345
General Office Building	3.0037 / 1.84098	14.7437	0.0987	2.4700e-003	17.9472
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**26.5196**	**0.1775**	**4.4500e-003**	**32.2817**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.9644	1.3572	0.0000	56.8933
Unmitigated	22.9644	1.3572	0.0000	56.8933

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	97.41	19.7734	1.1686	0.0000	48.9876
General Office Building	15.72	3.1910	0.1886	0.0000	7.9056
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**22.9644**	**1.3572**	**0.0000**	**56.8933**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	97.41	19.7734	1.1686	0.0000	48.9876
General Office Building	15.72	3.1910	0.1886	0.0000	7.9056
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**22.9644**	**1.3572**	**0.0000**	**56.8933**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gardner Rosecrans Project - Existing (Opperations Only)

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	16.90	1000sqft	0.39	16,900.00	0
Parking Lot	2.88	Acre	2.88	125,452.80	0
Automobile Care Center	25.50	1000sqft	0.59	25,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	510.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per the SCE 2018 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 513-25*0.029-298*0.00617=510.43 to avoid double counting.

Land Use - Total Site = 5.46 ac, 3.86 ca developed and 1.6 ac undeveloped

Construction Phase - Model Operations only

Vehicle Trips - 212 ADT based on Traffic Memo, 212/42.4(total building area) = 5

Energy Use -

Gardner Rosecrans Project - Existing (Opperations Only) - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	510.43
tblVehicleTrips	ST_TR	23.72	5.00
tblVehicleTrips	ST_TR	2.46	5.00
tblVehicleTrips	SU_TR	11.88	5.00
tblVehicleTrips	SU_TR	1.05	5.00
tblVehicleTrips	WD_TR	23.72	5.00
tblVehicleTrips	WD_TR	11.03	5.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.5232	22.3806	20.5187	0.0420	0.9170	1.1372	2.0542	0.2473	1.0694	1.3167	0.0000	4,104.9667	4,104.9667	0.6947	0.0000	4,122.3333
Maximum	**2.5232**	**22.3806**	**20.5187**	**0.0420**	**0.9170**	**1.1372**	**2.0542**	**0.2473**	**1.0694**	**1.3167**	**0.0000**	**4,104.9667**	**4,104.9667**	**0.6947**	**0.0000**	**4,122.3333**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.5232	22.3806	20.5187	0.0420	0.9170	1.1372	2.0542	0.2473	1.0694	1.3167	0.0000	4,104.9667	4,104.9667	0.6947	0.0000	4,122.3333
Maximum	**2.5232**	**22.3806**	**20.5187**	**0.0420**	**0.9170**	**1.1372**	**2.0542**	**0.2473**	**1.0694**	**1.3167**	**0.0000**	**4,104.9667**	**4,104.9667**	**0.6947**	**0.0000**	**4,122.3333**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Energy	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851
Mobile	0.3997	1.6913	4.4735	0.0129	0.9421	0.0147	0.9568	0.2522	0.0138	0.2659		1,309.3393	1,309.3393	0.0789		1,311.3116
Total	**1.4216**	**1.8760**	**4.6332**	**0.0140**	**0.9421**	**0.0287**	**0.9708**	**0.2522**	**0.0278**	**0.2800**		**1,530.9176**	**1,530.9176**	**0.0832**	**4.0600e-003**	**1,534.2073**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Energy	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851
Mobile	0.3997	1.6913	4.4735	0.0129	0.9421	0.0147	0.9568	0.2522	0.0138	0.2659		1,309.3393	1,309.3393	0.0789		1,311.3116
Total	**1.4216**	**1.8760**	**4.6332**	**0.0140**	**0.9421**	**0.0287**	**0.9708**	**0.2522**	**0.0278**	**0.2800**		**1,530.9176**	**1,530.9176**	**0.0832**	**4.0600e-003**	**1,534.2073**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/28/2020	12/14/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.88

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	66.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.2 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0996	2.9784	0.7804	7.2600e-003	0.1793	0.0140	0.1933	0.0516	0.0134	0.0650		775.6692	775.6692	0.0473		776.8525
Worker	0.3037	0.2161	2.8898	7.7900e-003	0.7377	6.1700e-003	0.7439	0.1957	5.6800e-003	0.2013		776.2345	776.2345	0.0245		776.8463
Total	**0.4033**	**3.1945**	**3.6702**	**0.0151**	**0.9170**	**0.0202**	**0.9372**	**0.2473**	**0.0191**	**0.2664**		**1,551.9037**	**1,551.9037**	**0.0718**		**1,553.6988**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.2 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0996	2.9784	0.7804	7.2600e-003	0.1793	0.0140	0.1933	0.0516	0.0134	0.0650		775.6692	775.6692	0.0473		776.8525
Worker	0.3037	0.2161	2.8898	7.7900e-003	0.7377	6.1700e-003	0.7439	0.1957	5.6800e-003	0.2013		776.2345	776.2345	0.0245		776.8463
Total	**0.4033**	**3.1945**	**3.6702**	**0.0151**	**0.9170**	**0.0202**	**0.9372**	**0.2473**	**0.0191**	**0.2664**		**1,551.9037**	**1,551.9037**	**0.0718**		**1,553.6988**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3997	1.6913	4.4735	0.0129	0.9421	0.0147	0.9568	0.2522	0.0138	0.2659		1,309.3393	1,309.3393	0.0789		1,311.3116
Unmitigated	0.3997	1.6913	4.4735	0.0129	0.9421	0.0147	0.9568	0.2522	0.0138	0.2659		1,309.3393	1,309.3393	0.0789		1,311.3116

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	127.50	127.50	127.50	170,793	170,793
General Office Building	84.50	84.50	84.50	272,213	272,213
Parking Lot	0.00	0.00	0.00		
Total	212.00	212.00	212.00	443,006	443,006

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
General Office Building	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Parking Lot	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851
NaturalGas Unmitigated	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	1460.14	0.0158	0.1432	0.1203	8.6000e-004		0.0109	0.0109		0.0109	0.0109		171.7808	171.7808	3.2900e-003	3.1500e-003	172.8016
General Office Building	423.195	4.5600e-003	0.0415	0.0349	2.5000e-004		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003		49.7876	49.7876	9.5000e-004	9.1000e-004	50.0835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0203**	**0.1846**	**0.1551**	**1.1100e-003**		**0.0140**	**0.0140**		**0.0140**	**0.0140**		**221.5684**	**221.5684**	**4.2400e-003**	**4.0600e-003**	**222.8851**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	1.46014	0.0158	0.1432	0.1203	8.6000e-004		0.0109	0.0109		0.0109	0.0109		171.7808	171.7808	3.2900e-003	3.1500e-003	172.8016
General Office Building	0.423195	4.5600e-003	0.0415	0.0349	2.5000e-004		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003		49.7876	49.7876	9.5000e-004	9.1000e-004	50.0835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0203**	**0.1846**	**0.1551**	**1.1100e-003**		**0.0140**	**0.0140**		**0.0140**	**0.0140**		**221.5684**	**221.5684**	**4.2400e-003**	**4.0600e-003**	**222.8851**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Unmitigated	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8840					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Total	**1.0016**	**4.0000e-005**	**4.6700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.9100e-003**	**9.9100e-003**	**3.0000e-005**		**0.0106**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8840					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Total	**1.0016**	**4.0000e-005**	**4.6700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.9100e-003**	**9.9100e-003**	**3.0000e-005**		**0.0106**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Gardner Rosecrans Project - Existing (Opperations Only)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	16.90	1000sqft	0.39	16,900.00	0
Parking Lot	2.88	Acre	2.88	125,452.80	0
Automobile Care Center	25.50	1000sqft	0.59	25,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	510.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per the SCE 2018 Corporate Responsibility and Sustainability Report. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 513-25*0.029-298*0.00617=510.43 to avoid double counting.

Land Use - Total Site = 5.46 ac, 3.86 ca developed and 1.6 ac undeveloped

Construction Phase - Model Operations only

Vehicle Trips - 212 ADT based on Traffic Memo, 212/42.4(total building area) = 5

Energy Use -

Gardner Rosecrans Project - Existing (Opperations Only) - Los Angeles-South Coast County, Winter

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tblConstructionPhase	NumDays	230.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	510.43
tblVehicleTrips	ST_TR	23.72	5.00
tblVehicleTrips	ST_TR	2.46	5.00
tblVehicleTrips	SU_TR	11.88	5.00
tblVehicleTrips	SU_TR	1.05	5.00
tblVehicleTrips	WD_TR	23.72	5.00
tblVehicleTrips	WD_TR	11.03	5.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.5612	22.4031	20.3559	0.0413	0.9170	1.1375	2.0544	0.2473	1.0696	1.3169	0.0000	4,038.4179	4,038.4179	0.6964	0.0000	4,055.8265
Maximum	**2.5612**	**22.4031**	**20.3559**	**0.0413**	**0.9170**	**1.1375**	**2.0544**	**0.2473**	**1.0696**	**1.3169**	**0.0000**	**4,038.4179**	**4,038.4179**	**0.6964**	**0.0000**	**4,055.8265**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.5612	22.4031	20.3559	0.0413	0.9170	1.1375	2.0544	0.2473	1.0696	1.3169	0.0000	4,038.4179	4,038.4179	0.6964	0.0000	4,055.8265
Maximum	**2.5612**	**22.4031**	**20.3559**	**0.0413**	**0.9170**	**1.1375**	**2.0544**	**0.2473**	**1.0696**	**1.3169**	**0.0000**	**4,038.4179**	**4,038.4179**	**0.6964**	**0.0000**	**4,055.8265**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Energy	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851
Mobile	0.3896	1.7261	4.3496	0.0123	0.9421	0.0148	0.9569	0.2522	0.0139	0.2661		1,243.8073	1,243.8073	0.0793		1,245.7888
Total	**1.4116**	**1.9108**	**4.5093**	**0.0134**	**0.9421**	**0.0288**	**0.9710**	**0.2522**	**0.0280**	**0.2801**		**1,465.3856**	**1,465.3856**	**0.0835**	**4.0600e-003**	**1,468.6845**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Energy	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851
Mobile	0.3896	1.7261	4.3496	0.0123	0.9421	0.0148	0.9569	0.2522	0.0139	0.2661		1,243.8073	1,243.8073	0.0793		1,245.7888
Total	**1.4116**	**1.9108**	**4.5093**	**0.0134**	**0.9421**	**0.0288**	**0.9710**	**0.2522**	**0.0280**	**0.2801**		**1,465.3856**	**1,465.3856**	**0.0835**	**4.0600e-003**	**1,468.6845**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/28/2020	12/14/2020	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.88

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	66.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.2 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1041	2.9778	0.8607	7.0700e-003	0.1793	0.0142	0.1935	0.0516	0.0136	0.0652		754.4574	754.4574	0.0505		755.7186
Worker	0.3373	0.2392	2.6467	7.3400e-003	0.7377	6.1700e-003	0.7439	0.1957	5.6800e-003	0.2013		730.8975	730.8975	0.0230		731.4734
Total	**0.4414**	**3.2170**	**3.5074**	**0.0144**	**0.9170**	**0.0204**	**0.9374**	**0.2473**	**0.0193**	**0.2666**		**1,485.3548**	**1,485.3548**	**0.0735**		**1,487.1920**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.2 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1041	2.9778	0.8607	7.0700e-003	0.1793	0.0142	0.1935	0.0516	0.0136	0.0652		754.4574	754.4574	0.0505		755.7186
Worker	0.3373	0.2392	2.6467	7.3400e-003	0.7377	6.1700e-003	0.7439	0.1957	5.6800e-003	0.2013		730.8975	730.8975	0.0230		731.4734
Total	**0.4414**	**3.2170**	**3.5074**	**0.0144**	**0.9170**	**0.0204**	**0.9374**	**0.2473**	**0.0193**	**0.2666**		**1,485.3548**	**1,485.3548**	**0.0735**		**1,487.1920**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3896	1.7261	4.3496	0.0123	0.9421	0.0148	0.9569	0.2522	0.0139	0.2661		1,243.8073	1,243.8073	0.0793		1,245.7888
Unmitigated	0.3896	1.7261	4.3496	0.0123	0.9421	0.0148	0.9569	0.2522	0.0139	0.2661		1,243.8073	1,243.8073	0.0793		1,245.7888

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	127.50	127.50	127.50	170,793	170,793
General Office Building	84.50	84.50	84.50	272,213	272,213
Parking Lot	0.00	0.00	0.00		
Total	212.00	212.00	212.00	443,006	443,006

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	33.00	48.00	19.00	21	51	28
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
General Office Building	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Parking Lot	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851
NaturalGas Unmitigated	0.0203	0.1846	0.1551	1.1100e-003		0.0140	0.0140		0.0140	0.0140		221.5684	221.5684	4.2500e-003	4.0600e-003	222.8851

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	1460.14	0.0158	0.1432	0.1203	8.6000e-004		0.0109	0.0109		0.0109	0.0109		171.7808	171.7808	3.2900e-003	3.1500e-003	172.8016
General Office Building	423.195	4.5600e-003	0.0415	0.0349	2.5000e-004		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003		49.7876	49.7876	9.5000e-004	9.1000e-004	50.0835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0203**	**0.1846**	**0.1551**	**1.1100e-003**		**0.0140**	**0.0140**		**0.0140**	**0.0140**		**221.5684**	**221.5684**	**4.2400e-003**	**4.0600e-003**	**222.8851**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	1.46014	0.0158	0.1432	0.1203	8.6000e-004		0.0109	0.0109		0.0109	0.0109		171.7808	171.7808	3.2900e-003	3.1500e-003	172.8016
General Office Building	0.423195	4.5600e-003	0.0415	0.0349	2.5000e-004		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003		49.7876	49.7876	9.5000e-004	9.1000e-004	50.0835
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0203**	**0.1846**	**0.1551**	**1.1100e-003**		**0.0140**	**0.0140**		**0.0140**	**0.0140**		**221.5684**	**221.5684**	**4.2400e-003**	**4.0600e-003**	**222.8851**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Unmitigated	1.0016	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8840					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Total	**1.0016**	**4.0000e-005**	**4.6700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.9100e-003**	**9.9100e-003**	**3.0000e-005**		**0.0106**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1172					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8840					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.4000e-004	4.0000e-005	4.6700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		9.9100e-003	9.9100e-003	3.0000e-005		0.0106
Total	**1.0016**	**4.0000e-005**	**4.6700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**9.9100e-003**	**9.9100e-003**	**3.0000e-005**		**0.0106**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

DEPARTMENT of COMMUNITY DEVELOPMENT
1700 WEST 162nd STREET / GARDENA, CALIFORNIA 90247-3732 / WWW.CITYOFGARDENA.ORG / PHONE (310) 217-9530

March 4, 2020

Mr. Andrew Salas
Gabrieleno Band of Mission Indians – Kizh Nation
PO Box 393
Covina, California 91723

Subject: ***Notification of the Proposed Gardner Rosecrans Project, Pursuant to Assembly Bill 52***

Dear Mr. Salas,

Pursuant to California Assembly Bill 52 (AB52), the City of Gardena (City) is providing you with notification of the proposed Gardner Rosecrans Project (Project), in the City of Gardena, County of Los Angeles, California. This project is scheduled to go to public hearing on May 5, 2020. We apologize for the late notice and are asking you for expedited review. We thought we had previously consulted on this project last year. As it turns out, that was for another project by the same developer, 2,700 feet to the south at 2415 Marine Avenue. Attached is your May 29, 2019 email concerning that nearby project, as well as **Exhibit 2-1: Regional Vicinity Map**, and **Exhibit 2-2: Site Vicinity Map**, showing the proximity of the two projects. We are hopeful that given the proximity, your conclusion of not needing any mitigation will be true for this project as well.

Project Location and Description. The Project site involves a 5.47-gross-acre property comprised of two parcels (APN # 4061-028-049 and -018), located at 2101 and 2129 Rosecrans Avenue. Exhibit 2-1, Regional Vicinity Map and Exhibit 2-2, Site Vicinity Map depict the Project site in a regional and local context, respectively. The site is fully developed except an approximately 1.6-acre undeveloped area on the southeastern corner. Existing development consists of approximately 42,400 square feet (SF) of commercial uses (circa 1976) comprised of three buildings, surface parking, and drive aisles. The Project proposes to remove all existing onsite improvements, and in their place construct a mixed-use development. The mixed-use development would include an approximately 0.54-acre commercial lot, with one approximately 5,080-SF retail building and 35 parking spaces, and an approximately 4.93-acre residential lot, with 105 three-story residential dwelling units and 274 parking spaces.

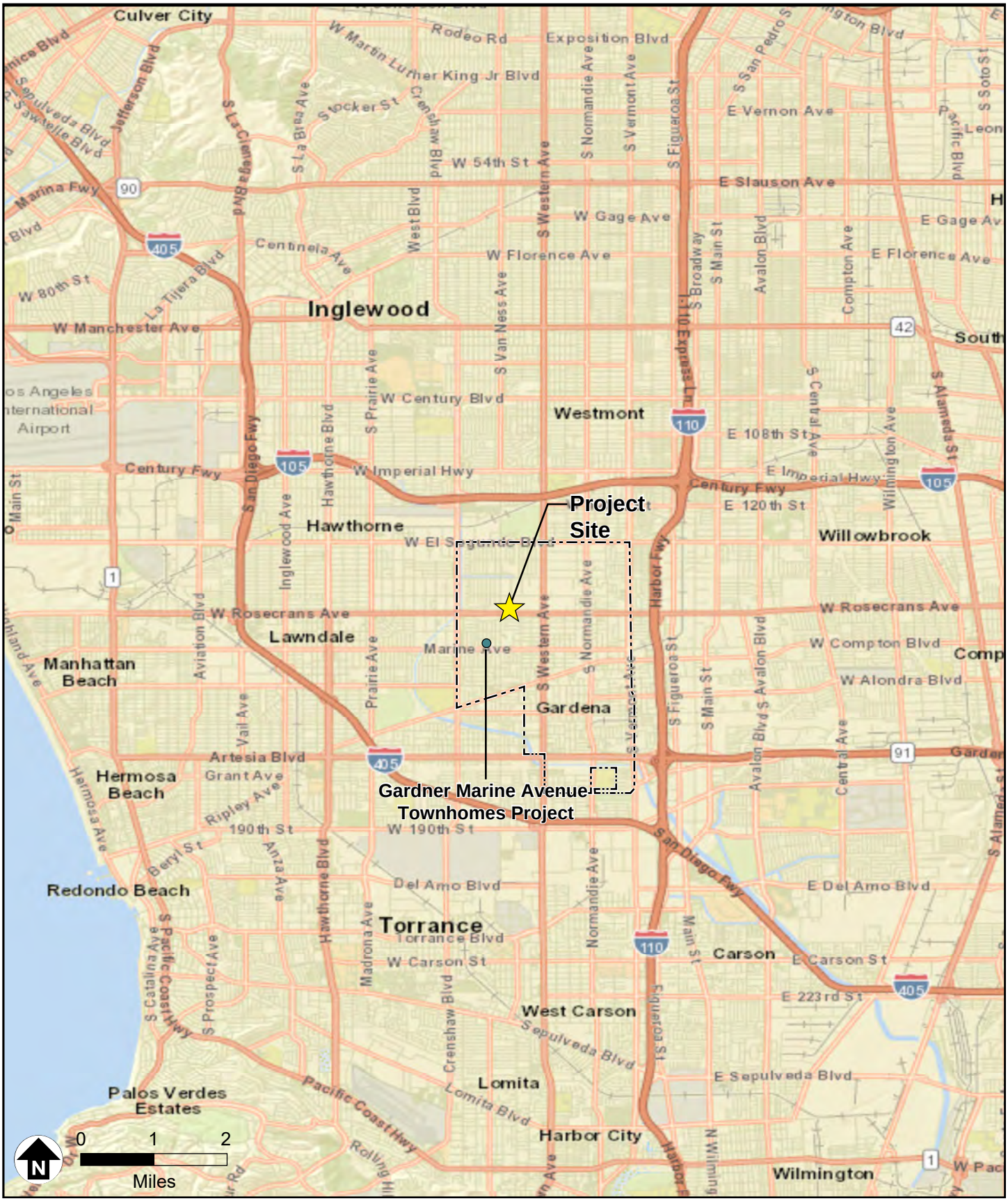
If you have any comments or concerns regarding potential impacts to tribal cultural resources (as defined in Public Resources Code § 21074) in relation to the proposed Project, please provide a written request for consultation to the address above or via email to rbarragan@cityofgardena.org within 30 days of receipt of this letter and include the name of a designated lead contact person.

Sincerely,

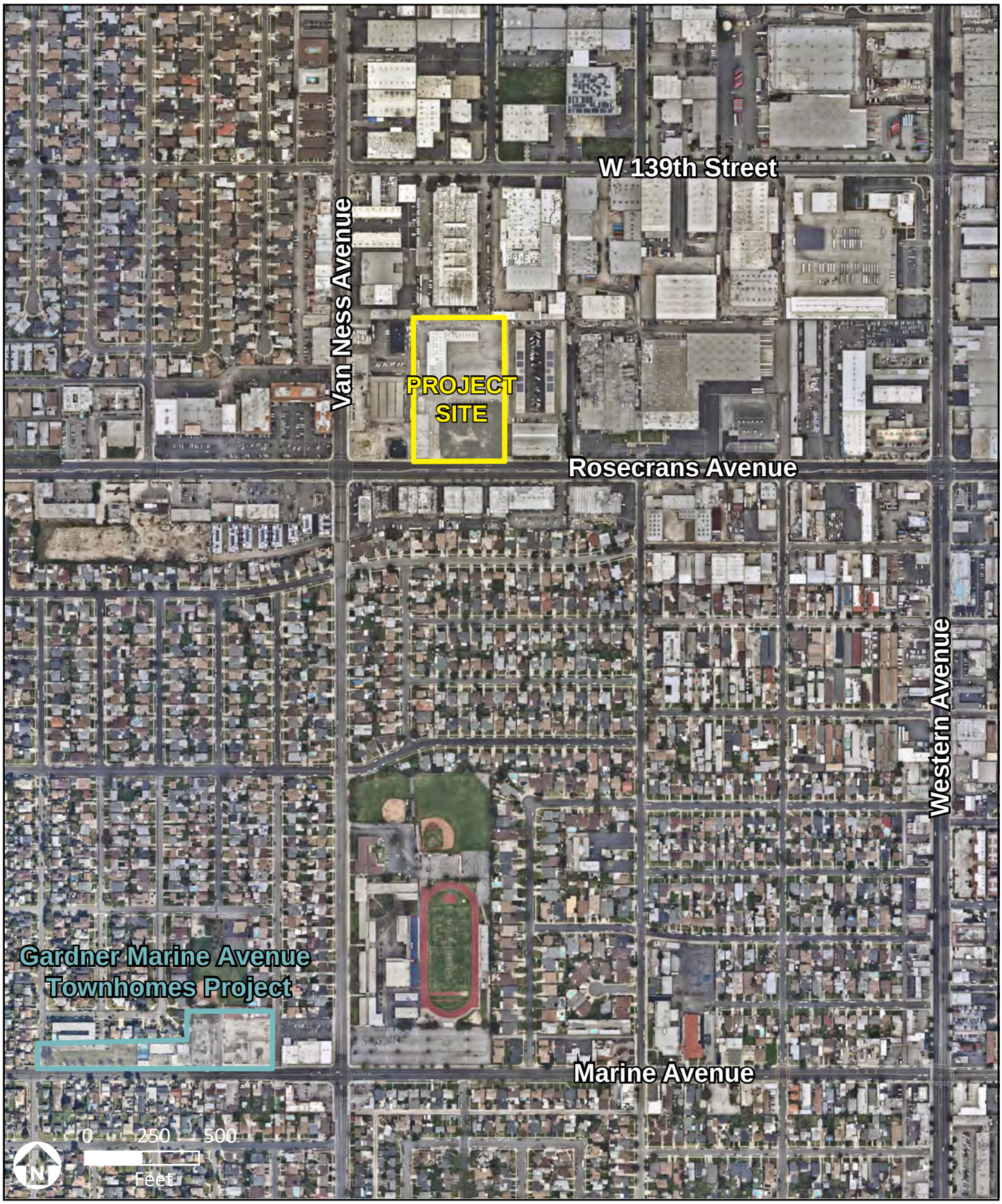
Mr. Raymond Barragan
Community Development Manager

Attachments:
Exhibit 2-1: Regional Vicinity Map
Exhibit 2-2: Site Vicinity Map

TASHA CERDA, Mayor / ART KASKANIAN, Mayor Pro Tem
MARK E. HENDERSON, Councilmember / DAN MEDINA, Councilmember / RODNEY G. TANAKA, Councilmember
MINA SEMENZA, City Clerk / J. INGRID TSUKIYAMA, City Treasurer / CLINT OSORIO, City Manager / CARMEN VASQUEZ, City Attorney



Source: ESRI World Street Map



Source: Near Maps - Image Dated January 18, 2020

Kimley»Horn

Welcome To GARDENA

Gardner Rosecrans Avenue Project
Initial Study/Mitigated Negative Declaration

Exhibit 2-2
Site Vicinity Map

From: Administration Gabrieleno <admin@gabrielenoindians.org>
Sent: Wednesday, May 29, 2019 2:00 PM
To: John F. Signo <jsigno@cityofgardena.org>
Cc: Matthew Teutimez <Matthew.Teutimez@gabrielenoindians.org>; Andy Salas <chairman@gabrielenoindians.org>
Subject: AB52 Consultation - 2415 Marine Ave_Gardena

Mr. Signo,

Thank you for your time during the AB52 consultation for the Gardner Marine Avenue project at 2415 Marine Avenue in the City of Gardena. Thank you for explaining the ground disturbance activities as part of this project. After reviewing the project activities and its distance from known indicators for our resources, we have concluded that your project has a low potential to impact Tribal Cultural Resources (TCR) as part of your ground disturbance activities. Therefore, additional mitigation for TCR protection is not necessary for this project. However, there is always a chance for discoveries, so if something is inadvertently found please have the project staff contact our Tribal Government. Thank you for your time and consideration of our concerns.

Sincerely,

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

Attachments area

ALBUS-KEEFE & ASSOCIATES, INC.
GEOTECHNICAL CONSULTANTS

April 5, 2019
J.N.: 2789.00

Mr. Mitchell Gardner
G3 Urban
15235 S. Western Avenue
Gardena, CA 90249

Subject: **Preliminary Geotechnical Investigation, Proposed Commercial and Residential Development, 2129 W. Rosecrans Avenue, Gardena, California**

Dear Mr. Gardner,

Pursuant to your request, ***Albus-Keefe & Associates, Inc***. is pleased to present to you our preliminary geotechnical investigation report for the subject development. This report presents the results of our field investigation, laboratory testing, engineering analyses, as well as our preliminary geotechnical recommendations for design and construction of the subject development.

We appreciate this opportunity to be of service to you. If you have any questions regarding the contents of this report, please do not hesitate to call this office.

Sincerely,

ALBUS-KEEFE & ASSOCIATES, INC.

Paul Kim
Associate Engineer

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The purposes of our preliminary geotechnical investigation were to evaluate geotechnical conditions within the project area and to provide conclusions and recommendations relevant to the design and construction of the proposed improvements at the subject site. The scope of this investigation included the following:

- Review of the referenced historical aerial photographs and environmental report
- Review of published geologic and seismic data for the site and surrounding area
- Exploratory drilling and soil sampling
- Laboratory testing of selected soil samples
- Engineering analyses of data obtained from our review, exploration, and laboratory testing
- Evaluation of site seismicity, liquefaction, and settlement potential
- Preparation of this report

1.2 SITE LOCATION AND DESCRIPTION

The site is located at 2129 West Rosecrans Avenue, in the city of Gardena, California. The site consists of approximately 5 acres of land. Currently, the site consists of a taxi-cab facility that also provides auto maintenance of their vehicles. The site is developed with a single-story commercial building and a shed area where maintenance of auto vehicles take place. A small car wash facility is located at the northeast portion of the site. Undeveloped land is also present at the southeast corner of the site. Concrete- and asphalt-paving is present in the remainder of the site. The site is bordered by West Rosecrans Avenue to the south and industrial buildings to the west, north, and east. In addition, a large industrial structure is situated along the east property line. The location of the site and its relationship to the surrounding areas is shown on the Site Location Map, Figure 1.

The site is relatively level with elevations that vary from approximately 49 feet above mean sea level (MSL) to 52 feet above MSL based on Google Earth 2018. Drainage at the site appears to be directed toward concrete v-gutters located throughout the site which is then directed to the south towards West Rosecrans Avenue. Vegetation within the taxi cab facility is sparse and consists of a few trees within the surface lot. Ground cover and a few trees are also located within the undeveloped portion of the site.

© 2019 Google Earth

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SITE LOCATION MAP

G3 Urban
Proposed Commercial and Residential Development
2129 W. Rosecrans Avenue
Gardena, California

NOT TO SCALE

FIGURE 1

1.3 PROPOSED DEVELOPMENT

We understand that the site will be redeveloped for residential use. It is anticipated that the proposed site development will consist of 105 residential units and associated interior driveways, perimeter/retaining walls and underground utilities. Minor rough grading is also anticipated. We also understand that approximately 0.56 acre of the southwest portion of the site will be developed with a retail building.

No grading or structural plans were available in preparing this report. However, we anticipate that minor rough grading of the site will be required to achieve future surface configuration and we expect the proposed residential dwellings will be up to 3-story, wood-framed structures with concrete slabs on grade yielding relatively light foundation loads. For the retail building, we have assumed maximum column loads of less than 75 kips per column and maximum wall loads of less than 3 kips per linear foot.

2.0 INVESTIGATION

2.1 RESEARCH

We have reviewed the referenced geologic publications, geologic maps, environmental report, and historic aerial photos (see references). Data from these sources were utilized to develop some of the findings and conclusions presented herein.

Based on our review, the site was divided into several sections since at least 1962. A car storage lot was located at the west portion of the site, a waste facility to the southeast, and an undeveloped land to the northeast. By 1963, the waste facility was expanded to the northeast to the northern limits of the site. Between 1972 to 1980, the current industrial building at the southwest corner of the site was constructed. In addition, the car storage lot was removed and the waste facility was expanded to the west to the property line. The waste facility was later removed by 1994 leaving the southeast portion of the site undeveloped and the current shed area was constructed to the northwest. By 2003, the west parking lot was expanded. The site has remained relatively unchanged since 2003.

2.2 SUBSURFACE EXPLORATION

Subsurface exploration for this investigation was conducted on January 22, 2019 and March 28, 2019. Our initial investigation consisted of four (4) exploratory borings and six (6) cone penetration test soundings to depths ranging from approximately 21.5 to 51.5 feet below the existing ground surface (bgs). The borings were drilled using a truck-mounted, continuous flight, hollow-stem-auger drill rig.

The CPT soundings were advanced using a 30-ton CPT truck. As the cone is advanced through the soil, direct measurements are obtained and recorded for tip resistance, side resistance and porewater measurements. The relationship between the tip resistance and the side resistance allows a determination of the general soil type. Following completion of the CPT boring, a log is generated that provides a continuous profile of the tip resistance, side resistance and porewater measurements. Copies of the CPT logs are provided in Appendix A.

Our secondary investigation was completed to investigate the magnetic anomalies determined by the geophysical survey performed on the site. This investigation consisted of excavating twelve (12) test pits (TP-1 through TP-12) to the depths of 3 to 7 feet bgs. The test pits were excavated using a rubber-tired backhoe. The locations of the test pits are shown on the *Geophysical Interpretation Map DRAFT* provided by the environmental consultant.

A representative of *Albus-Keefe & Associates, Inc.* logged the exploratory borings and test pits. Visual and tactile identifications were made of the materials encountered within the borings and test pits, and their descriptions are presented in the Exploration Logs in Appendix A. The approximate locations of the exploratory excavations completed by this firm are shown on the enclosed Geotechnical Map, Plate 1 and Plot Plan, Plate 2.

Bulk, relatively undisturbed and Standard Penetration Test (SPT) samples were obtained at selected depths within the exploratory borings and test pits for subsequent laboratory testing. Relatively undisturbed samples were obtained using a 3-inch O.D., 2.5-inch I.D., California split-spoon soil sampler lined with brass rings. SPT samples were obtained from the borings using a standard, unlined SPT soil sampler. During each sampling interval, the sampler was driven 18 inches with successive drops of a 140-pound automatic hammer falling 30 inches. The number of blows required to advance the sampler was recorded for each six inches of advancement. The total blow count for the lower 12 inches of advancement per soil sample is recorded on the exploration log. Samples were placed in sealed containers or plastic bags and transported to our laboratory for analyses. The borings were backfilled with auger cuttings upon completion of sampling. Borings within asphalt-paved areas were capped with asphalt cold patch.

In addition, a percolation test well, P-1 was utilized for percolation testing. The percolation test well was excavated to an approximated depth of 15 feet in the vicinity of exploratory boring B-1. The percolation test well was later backfilled upon completion of testing. Results of our percolation testing are discussed in a separate report.

2.3 LABORATORY TESTING

Selected samples of representative earth materials from our borings and test pits were tested in the laboratory. Tests consisted of USCS classification, in-situ moisture content and dry density, maximum dry density and optimum moisture content, consolidation/collapse, direct shear strength, sieve analysis, expansion index, Atterberg Limits, corrosivity (pH, chloride, and resistivity), percent passing No. 200 sieve, and soluble sulfate content. Descriptions of laboratory testing and the test results are presented in Appendix B and on the Exploration Logs in Appendix A.

3.0 GEOLOGIC CONDITIONS

3.1 SOIL CONDITIONS

Descriptions of the earth materials encountered during our investigation are summarized below and are presented in detail on the Exploration Logs presented in Appendix A.

The soils encountered within the site generally consist of artificial fill materials overlying older alluvial deposits. The artificial materials were observed in borings B-1 through B-4 to be up to approximately 7.5 feet thick. The artificial fill materials generally consisted of gray, brown, and black clay, silty sand, and clayey sand that are typically medium dense /stiff to very stiff. Debris was observed within the artificial fill. Specifically, the debris was observed in all of the test pits and borings B-1 and B-2. On average, the amount of debris is estimated to be less than 5% by volume. Debris is likely anticipated within the upper 2 to 3 feet of the artificial fill and generally limited to the eastern 2/3 of the site where the waste facility was located. Debris may be likely more present within the southern portion where the waste facility was originally located.

The older alluvial materials were encountered beneath the artificial fills to the maximum depth explored, 51.5 feet below the existing ground surface. The alluvial materials are alternating fine-grained and coarse-grained material. The fine-grained material consisted of brown clay and silt with varying amounts of sand that are damp to wet and very stiff to hard. The coarse-grained material consisted of brown silty and clayey sand that are damp to wet and medium dense to dense.

3.2 GROUNDWATER CONDITIONS

Groundwater was encountered during this firm's investigation to the depth of 23.6 feet below the existing ground surface. A review of the referenced Seismic Hazard Zone Report 027 indicates that historical high groundwater level for the general site area was estimated at approximately 25 feet below the existing ground surface.

3.3 FAULTING

Based on our review of the referenced publications and seismic data, no active faults are known to project through or immediately adjacent the site and the site does not lie within an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act. Table 3.1 presents a summary of known seismically active faults within 10 miles of the site, based on the 2008 National Seismic Hazard Maps.

TABLE 3.1
SUMMARY OF ACTIVE FAULTS

Name	Distance (miles)	Slip Rate (mm/yr.)	Preferred Dip (degrees)	Slip Sense	Rupture Top (km)	Fault Length (km)
Newport-Inglewood, alt 1	1.65	1	88	strike slip	0	65

Newport Inglewood Connected alt 1	1.65	1.3	89	strike slip	0	208
Newport Inglewood Connected alt 2	1.93	1.3	90	strike slip	0	208
Puente Hills (LA)	6.84	0.7	27	thrust	2.1	22
Palos Verdes	7.36	3	90	strike slip	0	99
Palos Verdes Connected	7.36	3	90	strike slip	0	285

4.0 ANALYSES

4.1 SEISMICITY

We have performed probabilistic seismic analyses utilizing the U.S. Seismic Design Maps web application by the U.S. Geological Survey (USGS). From our analyses, we obtain a PGA of 0.597g in accordance with Figure 22-7 of ASCE 7-10. The site factor for Site Class D in this range of PGA is F_{PGA} = 1.0. Therefore, the PGA_M = 1.0 x 0.597 = 0.60g. The mean event associated with a probability of exceedance equal to 2% over 50 years has a moment magnitude of 6.73 with a mean distance to the seismic source of 7.0 miles.

4.2 SETTLEMENT

Analyses were performed to evaluate potential for static settlement especially on the existing artificial fill and alluvial deposits. Our analyses were based on the results of consolidation tests performed on selected samples from our borings as well as the recorded blow counts during the exploration. Results of our testing indicate the native site materials has a relatively low compressibility. Due to its unsuitability, we have assumed that the artificial fill will be removed and recompacted. We estimate that settlement of foundations would undergo a total settlement less than 1 inch.

4.3 LIQUEFACTION

We have performed engineering analyses to evaluate the liquefaction potential at the site should the risk-targeted maximum earthquake event occur. We reviewed the subsurface data from both the borings and CPT soundings and have determined that the site is underlain relatively uniform materials. As a result, we utilized the information obtained from CPT-1 in our CLiq analyses. The analyses followed the guidelines presented in the CGS Special Publication 117A (2008), as modified in the procedures by Youd, et al. (2001) using seismicity parameters discussed in Section 4.1 above.

The results of CPT-based liquefaction analyses and its consequences are also provided in Appendix C which includes the related CLiq report, based on Robertson (NCEER 2001). Groundwater was assumed at depth 23.6 feet below ground surface corresponding to the groundwater level encountered during the investigation, and shallower than historically high groundwater level per CGS Seismic Hazard Zone Report 027. Soils with a plasticity index above 12 or Soil Behavior Type Index, IC, greater than 2.6 were assumed not susceptible to liquefaction.

Based on our analyses, liquefaction may occur below the site during periods of strong ground shaking. Our analyses indicate liquefaction could lead to a total settlement of the ground surface of less than approximately 0.5 inch due to seismic consolidation during liquefaction. Differential settlement due to seismic settlement would likely be on the order of ½ of the total settlement or approximately 0.25 inch over 30 feet. The details of the liquefaction-induced settlement analyses are provided within Appendix C.

5.0 CONCLUSIONS

5.1 FEASIBILITY OF PROPOSED DEVELOPMENT

From a geotechnical point of view, the proposed site improvements are considered feasible provided the recommendations presented in this report are incorporated into the design and construction of the project. Furthermore, it is also our opinion that the proposed development will not adversely impact the stability of adjoining properties if the recommendations presented in this report are incorporated into site development. Key issues that could have significant fiscal impacts on the geotechnical aspects of the proposed site development are discussed in the following sections of this report.

5.2 GEOLOGIC HAZARDS

5.2.1 Ground Rupture

No active faults are known to project through the site nor does the site lie within the bounds of an "Earthquake Fault Zone" as defined by the State of California in the Alquist-Priolo Earthquake Fault Zoning Act. As such, the potential for ground rupture due to fault displacement beneath the site is considered very low. The nearest zoned fault is the Newport-Inglewood fault located approximately 1.65 miles to the east.

5.2.2 Ground Shaking

The site is located in a seismically active area that has historically been affected by moderate to occasionally high levels of ground motion. The site lies in relatively close proximity to several seismically active faults; therefore, during the life of the proposed development, the property will probably experience moderate to occasionally high ground shaking from these fault zones, as well as some background shaking from other seismically active areas of the southern California region. Design of proposed structures in accordance with the current CBC is anticipated to adequately mitigate concerns with ground shaking.

5.2.3 Liquefaction

Based on our engineering analyses discussed previously, a number of thin layers of granular soils below groundwater are susceptible to liquefaction. The results of our analyses indicate a total seismic settlement of less than 0.5 inch and differential settlement of 0.5 inches over 30 feet.

Based on the State of California Special Publication 117A, hazards from liquefaction should be mitigated to the extent required to reduce seismic risk to “acceptable levels”. The acceptable level of risk means, “that level that provides reasonable protection of the public safety” [California Code of Regulations Title 14, Section 3721 (a)]. Protection of public safety does not require that structures be

resistant to cracking or general distress due to differential movements. As such, a greater allowance for differential movement during liquefaction events is acceptable compared to the design requirements for static conditions.

The use of well-reinforced foundations, such as robust post-tensioned slabs, grade beams with structural slabs, or mat foundations have been proven to adequately provide basal support for similar structures during liquefaction events comparable to the predicted site event. Specific design recommendations for such systems are provided in Section 6.3.6.

5.3 STATIC SETTLEMENT

Provided grading and construction are performed in accordance with the recommendations provided herein, estimated total and differential settlement of proposed site improvements are anticipated to be less than 1 inch and ½ inch over 30 feet, respectively. These magnitudes of settlement are considered within tolerable limits of proposed site development.

5.4 EARTHWORK AND MATERIAL CHARACTERISTICS

The subsurface soils are anticipated to be relatively easy to excavate with conventional heavy earthmoving equipment. Most of the existing fill materials are near or above optimum moisture content and may require drying and/or mixing to achieve proper compaction.

Debris from the previous site development are expected within the upper 2 to 3 feet of the existing artificial fill. Deleterious debris, such as scrap metal, wires, etc. will require removal. Some of the debris, such as brick, asphalt and concrete, may be incorporated into the engineered fill.

Offsite improvements exist near the property lines. The presence of the existing improvements may limit removals of unsuitable materials adjacent the property lines. Special grading techniques, such as slot cutting or other acceptable criteria, may be required when grading adjacent the property lines. Specific recommendations can be provided by the geotechnical consultant upon request.

Onsite disposal systems, clarifiers and other underground improvements may be present beneath the site. If encountered during future rough grading, these improvements will require proper abandonment or removal.

5.5 SHRINKAGE/BULKAGE AND SUBSIDENCE

Volumetric changes in earth quantities will occur when excavated onsite soil materials are replaced as properly compacted fill. We estimate the existing fill soils will shrink less than 5 percent. In addition, excavations into site materials located within the eastern 2/3 of the site is also anticipated to expose deleterious debris within the upper 2 to 3 feet. These debris will require removal and have a potential for loss of materials less than 5 percent. Subsidence is not anticipated during removals. We estimate an overall loss of about 5 percent due to shrinkage. The estimates are intended as an aid for project engineers in determining earthwork quantities. However, these estimates should be used with some caution since they are not absolute values. Contingencies should be made for balancing earthwork quantities based on actual bulkage and debris excavated that occurs during the grading process.

5.6 SOIL EXPANSION

Based on our laboratory test results and experience of the surrounding area, the near-surface soils within the site are generally anticipated to possess **Low to High** expansion potentials. Additional testing for soil expansion will be required subsequent to rough grading and prior to construction of foundations and other concrete flatwork to confirm these conditions. The presence of expansive soils will tend to swell when wetted and shrink when dried. This characteristic will result in differential movement of structures and other site improvements. Specific recommendations to mitigate the adverse effects of expansive soils are provided in the following sections.

6.0 RECOMMENDATIONS

6.1 EARTHWORK

6.1.1 General Earthwork and Grading Specifications

All earthwork and grading should be performed in accordance with all applicable requirements of the grading codes of the City of Gardena, California and CAL OSHA, in addition to recommendations presented herein.

6.1.2 Pre-Grade Meeting and Geotechnical Observation

Prior to commencement of earthwork operations and foundation installation, we recommend a meeting be held between City Inspector, general contractor, civil engineer, and geotechnical consultant to discuss proposed earthwork and logistics.

We also recommend that a geotechnical consultant be retained to provide soil engineering and engineering geologic services during site development. This is to observe compliance with the design specifications and recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated. If conditions are encountered during construction that appears to be different than those indicated in this report, the project geotechnical consultant should be notified immediately. Design and construction revisions may be required.

6.1.3 Site Clearing

All previous structures, foundation elements, vegetation, and deleterious materials should be removed from areas to receive fill placement. The project geotechnical consultant should be notified at the appropriate times to provide observation services during clearing operations to verify compliance with the above recommendations. Voids created by clearing should be left open for observation by the geotechnical consultant. Any unusual soil conditions or subsurface structures encountered during site clearing and/or grading should be brought to the immediate attention of the project geotechnical consultant for corrective recommendations.

Deleterious debris located within the eastern 2/3 of the site should be removed. The amount of deleterious debris is anticipated to be less than 5%. A track mounted vehicle should be utilized to excavated the upper 2 to 3 feet of surficial soil to expose the deleterious debris. The exposed deleterious debris should then be removed and not placed within the fill. A thin layer of asphalt was observed within the artificial fill and may be considered for re-use provided it is crushed to less than

4 inches and thoroughly blended into the engineered fill. Concrete and brick fragments may also be incorporated provided they are crushed to less than 4 inches.

6.1.4 Site Preparation (Removals and Overexcavations)

In general, all artificial fill is considered unsuitable for support of proposed engineered fill and site improvements. These materials should be removed from proposed building pads, retaining walls and any other "structural" areas, and replaced as engineered compacted fill. The depth of removal is anticipated to range from approximately 2 to 7.5 feet below existing grades. The observed artificial fill depths within the borings and test pits are provided in the *Geotechnical Map,* Plate 1. In addition to general removal of unsuitable soils above, the existing soils should be over-excavated to a depth of at least 2 foot below the bottom of footings for the structures.

Locally deeper removals of fill are anticipated throughout the site. Based on the referenced Phase II report by Fulcrum Resources Environmental, two underground storage tanks (UST) were removed within the northern portion of the site. These USTs were excavated and removed before 1991. The excavations for the removal of the two USTs measured approximately 200 feet by 75 feet and 200 feet by 50 feet. In addition, a couple of more USTs were mapped along the west-central and south-central perimeters of the site. The excavation depth was not indicated within the report nor the details of backfill of the abandoned void. The actual depth of removal of the existing fill should be determined by the geotechnical consultant during grading.

Within the limits of pavement, retaining walls less than 3 feet in height and free-standing walls, a minimum 1 foot of engineered fill should be provided below the proposed footings.

The lateral extent of removals should extend at least 5 feet beyond the limits of the proposed structures or a distance equal to the depth of overexcavation below the bottom of the structural elements, whichever is greater.

Removals for pavement and free-standing retaining walls may be limited to the edge of the foundations or pavement where lateral restrictions to removals are present such as property lines. The actual depth of removals should be verified by the geotechnical consultant during site grading.

Where removals are limited by existing structures, protected trees or property lines, special considerations may be required in the construction of affected improvements. Under such conditions, specific recommendations should be provided by this firm.

All removal excavations should be evaluated by the geotechnical consultant during grading to confirm the exposed conditions are as anticipated and to provide supplemental recommendations if required.

Following removals/overexcavation, the exposed grade should first be scarified to a depth of 6 inches, brought to at least 120 percent of the optimum moisture content, and then compacted to at least 90 percent of the laboratory standard (ASTM D 1557).

6.1.5 Fill Placement

In general, materials excavated from the site may be reused as fill provided they are free of deleterious materials, metallic debris, and particles greater than 4 inches in maximum dimension (oversized

materials). Asphaltic and concrete debris generated during site demolition can likely be reduced to no more than 4 inches in maximum dimension and incorporated within fill soils during earthwork operations. Such materials should be mixed thoroughly with fill soils to prevent nesting. All fill should be placed in lifts no greater than 8 inches in loose thickness, moisture conditioned to a uniform moisture of at least 120 percent of the optimum moisture content, then compacted in place to at least 90 percent of the laboratory standard. Each lift should be treated in a similar manner. Subsequent lifts should not be placed until the project geotechnical consultant has approved the preceding lift.

6.1.6 Import Materials

If import materials are required to achieve the proposed finish grades, the proposed import soils should have an Expansion Index (EI, ASTM D 4829) less than 90 and possess negligible soluble sulfate concentrations. Import sources should be indicated to the geotechnical consultant prior to hauling the materials to the site so that appropriate testing and evaluation of the fill materials can be performed in advance.

6.1.7 Temporary Excavations

Temporary construction slopes or trench excavations in site materials may be cut vertically up to a height of 4 feet provided that no surcharging of the excavations is present. Temporary slopes over 4 feet in height but no more than 10 feet in height should be laid back at a maximum gradient of 1:1 (H:V) or properly shored. If steeper cuts are required to avoid existing site improvements, then additional analyses by the geotechnical consultant will be required or the excavation should be shored.

Excavations should not be left open for prolonged periods of time. The project geotechnical consultant should observe all temporary cuts to confirm anticipated conditions and to provide alternate recommendations if conditions dictate. All excavations should conform to the requirements of CAL OSHA.

Where temporary excavations cannot accommodate a 1:1 layback or where surcharging occurs, shoring, slot cutting, underpinning, or other methods should be used. Consideration should be given to perform slot-cutting during rough grading along the east property due to the adjacent structure being separated from planned development approximately 5 feet. Specific recommendations for other options if considered should be provided by the geotechnical consultant based on review of the final design plans.

6.2 SEISMIC DESIGN PARAMETERS

For design of the project in accordance with Chapter 16 of the 2016 CBC, the following table presents the seismic design factors:

TABLE 6.1
2016 CBC Seismic Design Parameters

Parameter	Value
Site Class	D
Mapped MCE Spectral Response Acceleration, short periods, S_S	1.624

Mapped MCE Spectral Response Acceleration, at 1-sec. period, S_1	0.599
Site Coefficient, Fa	1.0
Site Coefficient, Fv	1.5
Adjusted MCE Spectral Response Acceleration, short periods, S_{MS}	1.624
Adjusted MCE Spectral Response Acceleration, at 1-sec. period, S_{M1}	0.899
Design Spectral Response Acceleration, short periods, S_{DS}	1.082
Design Spectral Response Acceleration, at 1-sec. period, S_{D1}	0.599

MCE = Maximum Considered Earthquake

6.3 FOUNDATION DESIGN

The following recommendations are provided for preliminary design purposes. These recommendations have been based on the site materials exposed during our investigation, our understanding of the proposed development, and the assumption that the recommendations presented herein are incorporated into the design and construction of the project. Final recommendations should be provided by the project geotechnical consultant following review of final foundation plans as well as observation and testing of site materials during grading. Depending upon the design plans and actual site conditions, the recommendations provided herein may require modification.

6.3.1 Soil Expansion

Expansion potential of existing site materials is expected to vary from **Low** to **High**. As such, we are providing recommendation for both conventional footings and post-tension foundation slabs. Additional testing of site soils should be performed by the project geotechnical consultant to confirm the basis of these recommendations during site grading.

6.3.2 Settlement

Foundations should be designed for total and differential static settlement up to 1 inch and ½-inch over 30 feet, respectively. For seismic considerations on the site, foundation systems should also be designed to prevent collapse or failure of structures due to the estimated liquefaction-induced total seismic settlement of up to 0.5 inch and differential settlement of 0.25 inch over 30 feet.

6.3.3 Allowable Bearing Value

Provided foundations are bearing into engineered fill, a bearing value of 2,500 pounds per square foot (psf) may be used for continuous and pad footings that have a minimum width of 12 inches and founded at a minimum depth of 12 inches below the lowest adjacent grade. This value may be increased by 150 psf and 450 psf for each additional foot in width and depth, respectively, up to a maximum value of 4,000 psf. Recommended allowable bearing values include both dead and live loads, and may be increased by one-third for wind and seismic forces.

6.3.4 Lateral Resistance

Provided site grading is performed and that foundations are founded in engineered fill, a passive earth pressure of 300 pounds per square foot per foot of depth (psf/ft) up to a maximum value of 1800 pounds per square foot (psf) may be used to determine lateral bearing for footings. This value may be increased by one-third when designing for wind and seismic forces. A coefficient of friction of 0.28

times the dead load forces may also be used between concrete and the supporting soils to determine lateral sliding resistance. No increase in the coefficient of friction should be used when designing for wind and seismic forces.

The above values are based on footings placed directly against engineered fill. In the case where footing sides are formed, all backfill against the footings should be compacted to at least 90 percent of the laboratory standard.

6.3.5 Post-Tensioned Slabs/Mat on Grade

Perimeter edge beams for the post-tensioned slabs should have a minimum effective width of 12 inches and be founded at a minimum depth of 18 inches below the lowest adjacent final ground surface. Interior beams may be founded at a minimum depth of 12 inches below the tops of the finish floor slabs. Where a post-tensioned mat is utilized, the exterior edge of the mat should be embedded at least 8 inches below the lowest adjacent grade. The thickness of the floor slab/mat should be determined by the project structural engineer; however, we recommend a minimum slab thickness of 5.0 inches.

Design of the mat may be based on a modulus of subgrade reaction (Kv1) of 95 pounds per cubic inch (pci). The modulus is based on an effective loading area of 1 foot by 1 foot. The modulus may be adjusted for other effective loading areas using the equation provided below.

$k_b(pci) = 95\left\{\frac{b+1}{2b}\right\}^2$ where "b" is the effective width of loading (minimum dimension) in feet.

Concrete floor slabs in areas to receive carpet, tile, or other moisture sensitive coverings should be underlain with a minimum of 10-mil moisture vapor retarder conforming to ASTM E 1745, Class A. The membrane should be properly lapped, sealed, and underlain within a layer of sand at least 4 inches thick. One inch of sand may be placed over the membrane to aid in the curing of the concrete. The sand should have a SE no less than 30. This vapor retarder system is anticipated to be suitable for most flooring finishes that can accommodate some vapor emissions. However, this system may emit more than 4 pounds of water per 1000 sq. ft. and therefore, may not be suitable for all flooring finishes. Additional steps should be taken if such vapor emission levels are too high for anticipated flooring finishes. Where a mat is utilized, the sand may be reduced to 1 inch provided the mat is at least 6 inches thick.

Prior to placing concrete, subgrade soils below slab-on-grade/mat areas should be thoroughly moistened to provide moisture contents that are at least 120 percent of the optimum moisture content to a depth of 12 inches.

Based on the guidelines provided in the "Design of Post-Tensioned Slabs-on-Ground" 3rd Edition by Post-Tensioning Institute, the em and ym values are summarized below:

TABLE 6.2
PTI Design Parameters

Parameter	Value
Edge Lift Moisture Variation Distance, e_m	3.4 feet
Edge Lift, y_m	2.838 inches
Center Lift Moisture Variation Distance, e_m	5.7 feet
Center Lift, y_m	2.164 inches

6.3.6 Foundation Observations

Foundation excavation should be observed by the project geotechnical consultant to verify that they have been excavated into competent bearing soils and to the minimum embedment recommended above. These observations should be performed prior to placement of forms or reinforcement. The excavations should be trimmed neat, level and square. Loose, sloughed or moisture-softened materials and debris should be removed prior to placing concrete.

6.4 RETAINING/SCREEN WALLS

6.4.1 General

The following preliminary design and construction recommendations are provided for general retaining and screen walls. Final wall designs specific to the site development should be provided for review once completed. The structural engineer and architect should provide appropriate recommendations for sealing at all joints and applying moisture-proofing material on the back of the walls.

6.4.2 Allowable Bearing Value and Lateral Resistance

Retaining walls may be supported by conventional spread footings that utilize the bearing capacities and lateral resistance values provided in Sections 6.3.3 and 6.3.4. The passive pressure used for lateral bearing should be reduced by 50% for walls that have a descending slope below the face of the wall or for walls along property lines.

The above values are based on footings placed directly against properly compacted fill or competent native soils and embedded a minimum of 18 inches below the lowest adjacent grade. In the case where footing sides are formed, all backfill against the footings should be compacted to at least 90 percent of the Modified Proctor standard.

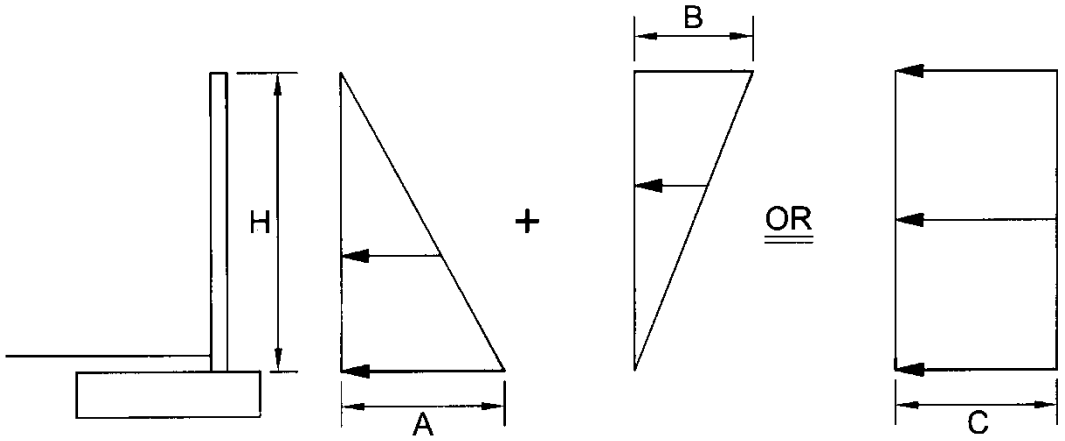
6.4.3 Active Earth Pressures

Static and seismic earth pressures for level and 2:1 (H:V) backfill conditions are provided in Table 6.3. Seismic earth pressures provided herein are based on the method provided by Seed & Whitman (1970) using a peak ground acceleration (PGA) of 0.39g for 10% probability of exceedance in 50 years. As indicated in the 2016 CBC, retaining walls supporting 6 feet of backfill or less are not required to be designed for seismic earth pressures. Two sets of values are provided in the following table; one for select import with Expansion Index (EI) less than 20, and one for onsite materials with an expansion index

between 20 and 60. The backfill material should be placed within a 1:1 plane projected up from the base of the wall stem. In addition, the values are based on drained backfill conditions and do not consider hydrostatic pressure. Furthermore, retaining walls should be designed to support adjacent surcharge loads imposed by other nearby footings or traffic loads in addition to the earth pressure.

TABLE 6.3

SEISMIC EARTH PRESSURES
Pressure Diagram



Active Pressure Values
Walls Using Select Import Backfill
(Soils with EI <20 & <30% passing 200 sieve)

Value	Level Backfill	2:1 Backfill
A	35H	60H
B	12H	12H
C	23.5H	36H

Active Pressure Values
Walls Using Select Onsite Soil Backfill
(Soils with 20≤EI <60)

Value	Backfill Condition	
	Level	**2H:1V Slope**
A	50H	85H
B	12H	12H
C	31H	48.5H

Note: H is in feet and resulting pressure is in psf. Design may utilize either the sum of the static component and the seismic component force diagrams or the total force diagram above. SEAOSC has suggested using a load factor of 1.7 for the static component and 1.0 for the seismic component. The actual load factors should be determined by the structural engineer.

6.4.4 Footing Reinforcement

All continuous footings should be reinforced with a minimum of two No. 4 bars on top and two No. 4 bars on the bottom. The structural engineer may require different reinforcement and should dictate if greater than the recommendations provided herein. Where recommended removals are limited due to space restrictions, greater reinforcement may be recommended. Specific recommendations should be provided by the geotechnical consultant during grading based on as-built conditions exposed in the field.

6.4.5 Footing Observations

Footing excavations should be observed by the project geotechnical consultant to verify that they have been excavated into competent bearing soils and to the minimum embedment recommended herein. These observations should be performed prior to placement of forms or reinforcement. The excavations should be trimmed neat, level, and square. Loose, sloughed or moisture-softened materials and debris should be removed prior to placing concrete.

6.4.6 Drainage and Moisture-Proofing

Retaining walls should be constructed with a perforated pipe and gravel subdrain to prevent entrapment of water in the backfill. The perforated pipe should consist of 4-inch-diameter, ABS SDR-35 or PVC Schedule 40 with the perforations laid down. The pipe should be embedded in ¾- to 1½-inch open-graded gravel wrapped in filter fabric. The gravel should be at least one foot wide and extend at least one foot up the wall above the footing and drainage outlet. Drainage gravel and piping should not be placed below outlets and weepholes. Filter fabric should consist of Mirafi 140N, or equal. Outlet pipes should be directed to positive drainage devices.

The use of weepholes may be considered in locations where aesthetic issues from potential nuisance water are not a concern. Weepholes should be 2 inches in diameter and provided at least every 6 feet on center. Where weepholes are used, perforated pipe may be omitted from the gravel subdrain.

Retaining walls supporting backfill should also be coated with a moisture-proofing compound or covered with such material to inhibit infiltration of moisture through the walls. Moisture-proofing material should cover any portion of the back of wall that will be in contact with soil and should lap over and onto the top of footing. A drainage panel should be provided between the soil backfill and water proofing. The panel should extend from the top of the backdrain gravel up to within 12 inches of finish grade. The top of footing should be finished smooth with a trowel to inhibit the infiltration of water through the wall. The project structural engineer should provide specific recommendations for moisture-proofing, water stops, and joint details.

If select backfill soil is used, the backfill should be placed within the zone defined by a 1:1 plane projected up from the back of the footing. Active pressures may be used for walls free to move at the top. For walls restrained from movement at the time of backfilling, at-rest pressures should be used.

6.4.7 Retaining Wall Backfill

Some of the onsite soils are generally not suitable for use as backfill of retaining walls. Select onsite soils having expansion index (EI) in the range of $20 \leq EI < 60$ or select imported soils having $EI < 20$ may be used for backfill behind retaining walls provided the wall has been designed for earth pressures as discussed in Section 6.4.3. The project geotechnical consultant should approve the backfill used for retaining walls. Wall backfill should be thoroughly moistened to provide moisture contents slightly over optimum moisture content; placed in lifts no greater than 12 inches in thickness, and then mechanically compacted with appropriate equipment to at least 90 percent of the laboratory standard. Hand-operated compaction equipment should be used to compact the backfill placed immediately adjacent the wall to avoid damage to the wall. Flooding or jetting of backfill material is not recommended.

6.4.8 Wall Jointing

All site walls should be provided with cold joints through the masonry block section at horizontal spacing generally not exceeding 20 feet. If walls will be constructed in locations where removal of unsuitable soils was restricted to less than a 1 to 1 projection down from the foundation (such as property boundaries) the joints should be provided every 10 feet or other mitigation as recommended by the project geotechnical consultant. Joints should not extend through the footing nor should they be covered by a brittle finish such as stucco. Joints may be filled with a mastic caulking or covered by a facing strip attached to one side of the wall at the joint.

6.5 EXTERIOR FLATWORK

Exterior flatwork should be a minimum 4 inches thick. Cold joints or saw cuts should be provided at least every 5 feet in each direction. Flatwork more than 5 feet in width across the minimum dimension should be reinforced with 4" by 4", W4 by W4 welded wire mesh or No 4 bars spaced 18 inches center to center in both directions. Cold joints should be keyed or provided with dowels spaced 24 inches on center. Flatwork that meets the structure at points of entry should be doweled into the footing or grade beam of the structure. Consideration should also be given to doweling flatwork into curbs where they meet. Special jointing detail should be provided in areas of block-outs, notches, or other irregularities to avoid cracking at points of high stress. Subgrade soils below flatwork should be thoroughly moistened to a moisture content of at least 120 percent of optimum to a depth of 12 inches. Moistening should be accomplished by lightly spraying the area over a period of a few days just prior to pouring concrete.

Drainage from flatwork areas should be directed to local area drains and/or other appropriate collection devices designed to carry runoff water to the street or other approved drainage structures. The concrete flatwork should also be sloped at a minimum gradient of 2% away from building foundations and masonry walls.

The geotechnical consultant should observe and verify the density and moisture content of subgrade soils prior to pouring concrete to verify the recommended pre-moistening recommendations have been met.

6.6 CONCRETE MIX DESIGN

Laboratory testing of onsite soil indicates **negligible** soluble sulfate content. Concrete designed to follow the procedures provided in ACI 318, Section 4.3, Table 4.3.1 for negligible sulfate exposure are anticipated to be adequate for mitigation of sulfate attack on concrete. Upon completion of rough grading, an evaluation of as-graded conditions and further laboratory testing will be required for the site to confirm or modify the conclusions provided in this section.

6.7 CORROSION

Results of preliminary testing of soils for pH, chloride content, and minimum resistivity indicate the site is potentially **Severely Corrosive** to metals that are in contact or close proximity to onsite soils. As such, structures fabricated from metals should have appropriate corrosion protection if they will be in direct contact with site soils. Under such conditions, a corrosion specialist should provide specific recommendations.

6.8 PRELIMINARY PAVEMENT DESIGN

6.8.1 Pavement Structural Sections

Based on the soil conditions present at the site and estimated traffic index, preliminary pavement structural sections are recommended in Table 6.4 below. Soil conditions vary significantly with respect to R-value. An assumed "R-value" of 5 was used for this preliminary pavement design to represent the typical condition we anticipate to be present following site grading. The sections provided below are for planning purposes only and should be re-evaluated subsequent to site grading. Final pavement sections should be based on actual R-value testing of in-place soils and analysis of anticipated traffic.

TABLE 6.4
PRELIMINARY PAVEMENT STRUCTURAL SECTIONS

Location	Traffic Index	Asphaltic Concrete (inches)	Concrete Pavers (mm)	Portland Cement Concrete (inches)	Aggregate Base (inches)
Entry Way and Main Driveway	6.0	4.0	--	--	13.0
		--	80	--	16.0
		--	--	9.0	--
Alley Ways	5.0	4.0	--	--	8.0
		--	80	--	12.0
		--	--	7.5	--

Commercial Drive Aisles	6.0	4.0	--	--	12.0
			80	--	16.0
		--	--	9.0	--
Parking Stalls	N/A	4.0	--	--	6.0

6.8.1 Subgrade Preparation

Prior to placement of paving elements, subgrade soils should be scarified 6 inches, moisture-conditioned to at least 120 percent of the optimum moisture content then compacted to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557. Areas observed to pump or yield under vehicle traffic should be removed and replaced with firm and unyielding engineered compacted soil or aggregate base materials.

6.8.2 Aggregate Base

Aggregate base should be moisture conditioned to slightly over the optimum moisture content, placed in lifts no greater than 6 inches in thickness, then compacted to at least 95 percent of the laboratory standard (ASTM D 1557). Aggregate base materials should be Class 2 Aggregate Base conforming to Section 26-1 of the latest edition of the Caltrans Standard Specifications, Crushed Aggregate Base conforming to Section 200-2.2 of the latest edition of the Standard Specifications for Public Works Construction (Greenbook) or Crushed Miscellaneous Base conforming to Section 200-2.4 of the Greenbook.

6.8.3 Asphaltic Concrete

Aggregate base should be moisture conditioned to slightly over the optimum moisture content, placed in lifts no greater than 6 inches in thickness, then compacted to at least 95 percent of the laboratory standard (ASTM D 1557). Aggregate base materials should be Class 2 Aggregate Base conforming to Section 26-1 of the latest edition of the Caltrans Standard Specifications, Crushed Aggregate Base conforming to Section 200-2.2 of the latest edition of the Standard Specifications for Public Works Construction (Greenbook) or Crushed Miscellaneous Base conforming to Section 200-2.4 of the Greenbook.

6.8.4 Asphaltic Concrete

Aggregate base should be moisture conditioned to slightly over the optimum moisture content, placed in lifts no greater than 6 inches in thickness, then compacted to at least 95 percent of the laboratory standard (ASTM D 1557). Aggregate base materials should be Class 2 Aggregate Base conforming to Section 26-1 of the latest edition of the Caltrans Standard Specifications, Crushed Aggregate Base conforming to Section 200-2.2 of the latest edition of the Standard Specifications for Public Works Construction (Greenbook) or Crushed Miscellaneous Base conforming to Section 200-2.4 of the Greenbook.

6.8.5 Concrete Paver

Concrete pavers should conform to the requirements of ASTM C 936. Construction of the pavers, including bedding sand, should follow manufacturer's specifications. Typical thickness of bedding sand is about 1 inch. The gradation of bedding sand should meet the requirement in Table 6.5.

TABLE 6.5
Gradation for Sand Bedding

Sieve Size	Percent Passing
⅜"	100
No. 4	95 - 100
No. 8	80 - 100
No. 16	50 - 85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	0 - 1

6.9 POST GRADING CONSIDERATIONS

6.9.1 Site Drainage and Irrigation

The ground immediately adjacent to foundations should be provided with positive drainage away from the structures in accordance with 2016 CBC, Section 1804.4. No rain or excess water should be allowed to pond against structures such as walls, foundations, flatwork, etc.

Excessive irrigation water can be detrimental to the performance of the proposed site development. Water applied in excess of the needs of vegetation will tend to percolate into the ground. Such percolation can lead to nuisance seepage and shallow perched groundwater. Seepage can form on slope faces, on the faces of retaining walls, in streets, or other low-lying areas. These conditions could lead to adverse effects such as the formation of stagnant water that breeds insects, distress or damage of trees, surface erosion, slope instability, discoloration and salt buildup on wall faces, and premature failure of pavement. Excessive watering can also lead to elevated vapor emissions within buildings that can damage flooring finishes or lead to mold growth inside the home.

Key factors that can help mitigate the potential for adverse effects of overwatering include the judicious use of water for irrigation, use of irrigation systems that are appropriate for the type of vegetation and geometric configuration of the planted area, the use of soil amendments to enhance moisture retention, use of low-water demand vegetation, regular use of appropriate fertilizers, and seasonal adjustments of irrigation systems to match the water requirements of vegetation. Specific recommendations should be provided by a landscape architect or other knowledgeable professional.

6.9.2 Utility Trenches

Trench excavations should be constructed in accordance with the recommendations contained in Section 6.1.7 of this report. Trench excavations must also conform to the requirements of Cal/OSHA.

Trench backfill materials and compaction criteria should conform to the requirements of the local municipalities. As a minimum, utility trench backfill should be compacted to at least 90 percent of the laboratory standard. Materials placed within the pipe zone (6 inches below and 12 inches above the pipe) should consist of particles no greater than ¾ inches and have a SE of at least 30. The materials within the pipe zone should be moisture-conditioned and compacted by hand-operated compaction equipment. Above the pipe zone (>1 foot above pipe), the backfill may consist of general fill materials. Trench backfill should be moisture-conditioned to slightly over the optimum moisture content, placed in lifts no greater than 12 inches in thickness, and then mechanically compacted with appropriate equipment to at least 90 percent of the laboratory standard. For trenches with sloped walls, backfill material should be placed in lifts no greater than 8 inches in loose thickness, and then compacted by rolling with a sheepsfoot roller or similar equipment. The project geotechnical consultant should perform density testing along with probing to verify that adequate compaction has been achieved.

Within shallow trenches (less than 18 inches deep) where pipes may be damaged by heavy compaction equipment, imported clean sand having a SE of 30 or greater may be utilized. The sand should be placed in the trench, thoroughly watered, and then compacted with a vibratory compactor. For utility trenches located below a 1:1 (H:V) plane projecting downward from the outside edge of the adjacent footing base or crossing footing trenches, concrete or slurry should be used as trench backfill.

6.10 PLAN REVIEW AND CONSTRUCTION SERVICES

We recommend ***Albus-Keefe & Associates, Inc.*** be engaged to review any future development plans, including foundation plans prior to construction. This is to verify that the assumptions of this report are valid and that the preliminary conclusions and recommendations contained in this report have been properly interpreted and are incorporated into the project plans and specifications. If we are not provided the opportunity to review these documents, we take no responsibility for misinterpretation of our preliminary conclusions and recommendations.

We recommend that a geotechnical consultant be retained to provide soil engineering services during construction of the project. These services are to observe compliance with the design, specifications or recommendations, and to allow design changes in the event that subsurface conditions differ from those anticipated prior to the start of construction.

If the project plans change significantly from the assumed development described herein, the project geotechnical consultant should review our preliminary design recommendations and their applicability to the revised construction. If conditions are encountered during construction that appear to be different than those indicated in this report or subsequent design reports, the project geotechnical consultant should be notified immediately. Design and construction revisions may be required.

7.0 LIMITATIONS

This report is based on the proposed development and geotechnical data as described herein. The materials encountered on the project site, described in other literature, and utilized in our laboratory testing for this investigation are believed representative of the total project area, and the conclusions and recommendations contained in this report are presented on that basis. However, soil and bedrock materials can vary in characteristics between points of exploration, both laterally and vertically, and those variations could affect the conclusions and recommendations contained herein. As such, observation and testing by a geotechnical consultant during the grading and construction phases of the project are essential to confirming the basis of this report.

This report has been prepared consistent with that level of care being provided by other professionals providing similar services at the same locale and time period. The contents of this report are professional opinions and as such, are not to be considered a guaranty or warranty.

This report should be reviewed and updated after a period of one year or if the site ownership or project concept changes from that described herein.

This report has been prepared for the exclusive use of **G3 Urban** and their project consultants in the planning and design of the proposed development. This report has not been prepared for use by parties or projects other than those named or described herein. This report may not contain sufficient information for other parties or other purposes.

This report is subject to review by the controlling governmental agency.

Respectfully submitted,

ALBUS-KEEFE & ASSOCIATES, INC

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Staff Engineer

Paul Hyun Jin Kim
Associate Engineer
G.E. 3106

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Plans

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Reports

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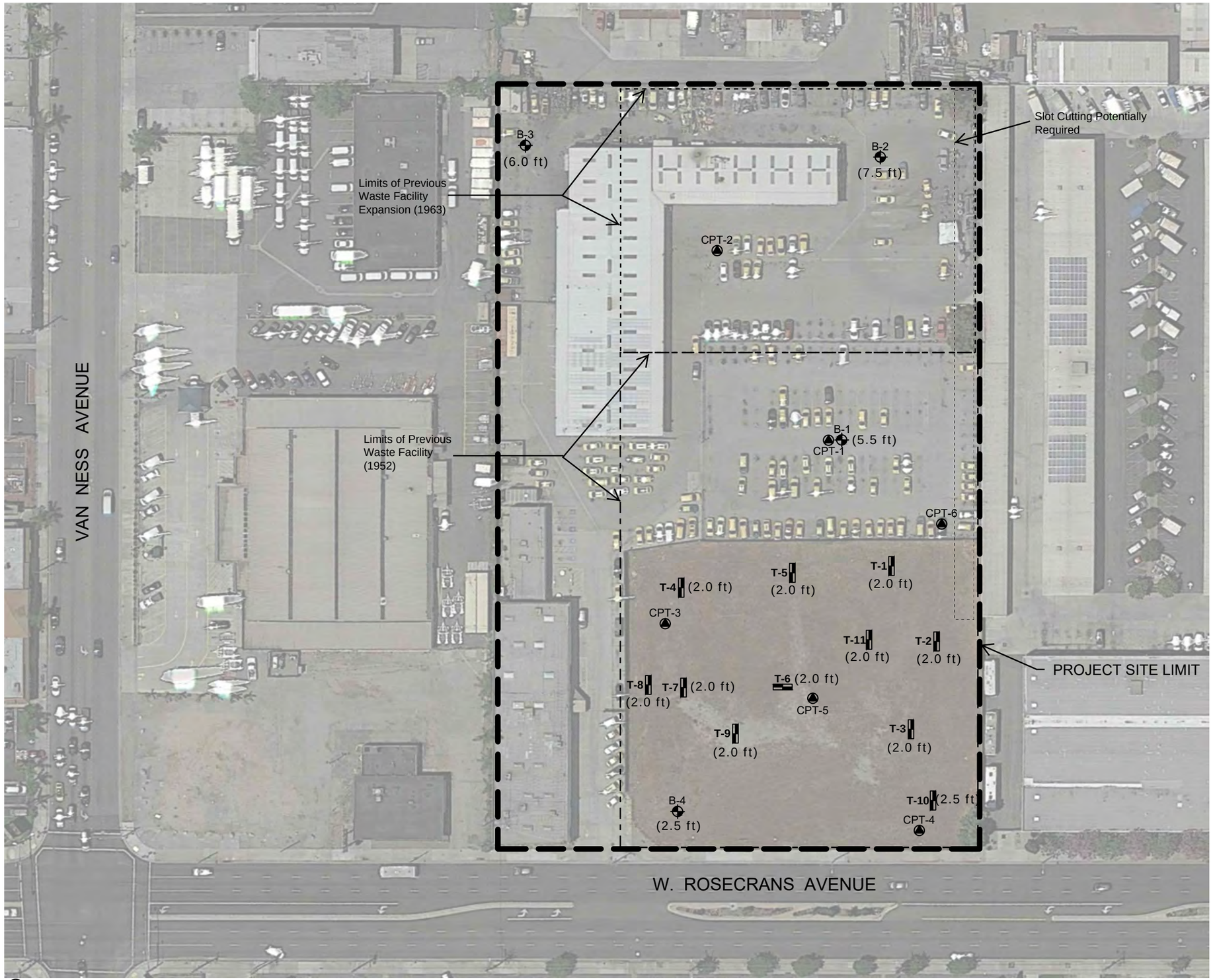
Maps

Geophysical Interpretation Map Draft, Former Salvage Yard, 2129 Rosecrans Avenue, Gardena, California, prepared by Spectrum Geophysics, Figure 1, scale 1 inch = 30 feet, dated September 7, 2018, Project No. 1808031R



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0 40 80 160

APPROX SCALE : 1" = 80'

EXPLANATION

(Locations Approximate)

- (5.5 ft) - Exploratory Boring with fill depth
- - Exploratory Cone Penetrometer Test (CPT)
- (5.5 ft) - Exploratory Test Pit with fill depth

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GEOTECHNICAL CONSULTANTS

GEOTECHNICAL MAP

Job No.: 2789.00	Date: 04/03/19	Plate: 1