Air Quality Assessment

845 El Centro Street Project

City of South Pasadena, California

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LIST OF ABBREVIATED TERMS

AQMP	air quality management plan
AB	Assembly Bill
ADT	average daily traffic
APN	Assessor's Parcel Number
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
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
MSSP	Mission Street Specific Plan
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
RM	Residential Medium Density
ROG	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SPGP	South Pasadena General Plan
SPMC	South Pasadena Municipal Code
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

VMT	Vehicle Miles Traveled
C_2H_3Cl	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

This report documents the results of an Air Quality Assessment completed for the 845 El Centro Street 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 & Setting

The Project site is located along the south side of El Centro Street, immediately west of the Metro Gold Line right-of-way and north of Orange Grove Place in the City of South Pasadena, within Los Angeles County; refer to **Exhibit 1: Regional Vicinity**. The Project site is more specifically located at 845 El Centro Street/832 Orange Grove Place, with a common reference of 899 El Centro Street. Local access to the Project area is provided via Mission Street to the north, Fremont Avenue to the east and Monterey Road to the south. Regional access is available via the 110 Freeway, accessible from both the north and west of the subject site; refer to **Exhibit 2: Site Vicinity**.

The Project site consists of three parcels (Assessor's Parcel Numbers [APNs] 5315-019-045, 046, and 048) totaling approximately 1.61 acres. The site is currently developed with an approximately 36,000 square-foot, two-story office building (built in 1980) and 159 parking spaces in both covered (gated) and surface parking. Access to the surface parking area is provided at the Project site's eastern boundary from El Centro Street. Access to the covered parking area is provided at the site's western boundary, from El Centro Street. Other noted site conditions include parking lot light standards, ornamental landscaping and a cinderblock wall along the eastern, southern and the southernmost portion of the site's western perimeter.

The Project site is designated Missions Street Specific Plan and Medium Density Residential by the General Plan and is zoned Mission Street Specific Plan (MSSP) and Residential Medium Density (RM). The MSSP was developed to address the impacts of the Metro Gold Line and to implement the Community Vision of Mission Street as South Pasadena's pedestrian oriented historic shopping street.

The Project site is bordered by a variety of land uses, including El Centro Street, Orange Grove Park, a self-storage facility, and the City of South Pasadena Public Works Department Maintenance and Operations facility to the north; the Metro Gold Line South Pasadena to the northeast; the Metro Gold Line rail and right-of-way, and single-family residential uses to the east; the terminus of Orange Grove Place and single-family residential uses located across Orange Grove Place to the south; and single-family residential uses to the west.

1.2 Project Description

The Project proposes to remove the existing office building and parking and develop a mixed-use project with underground parking. The proposed Project would combine the three parcels into a single 70,116 square-foot parcel, retaining the existing split of zoning (MSSP and RM), referenced herein as Zone 1: MSSP and Zone 2: RM.

Within Zone 1, the Project proposes a 79,860 square-foot structure with 57 residential units and 6,100 square-feet of commercial uses; refer to **Exhibit 3: Conceptual Site Plan**. The commercial uses would be located on the ground level fronting El Centro Street and are anticipated to be a mixture of restaurant and

retail uses. The residential uses would be comprised of studios, lofts, flats, and townhomes within a maximum of three stories. On-site amenities, including a lobby, gym and community rooms would be located within the ground floor of the mixed-use structure. Within Zone 2, the Project proposes three, two-story bungalow cottages with two to four bedrooms with a maximum height of 30 feet.

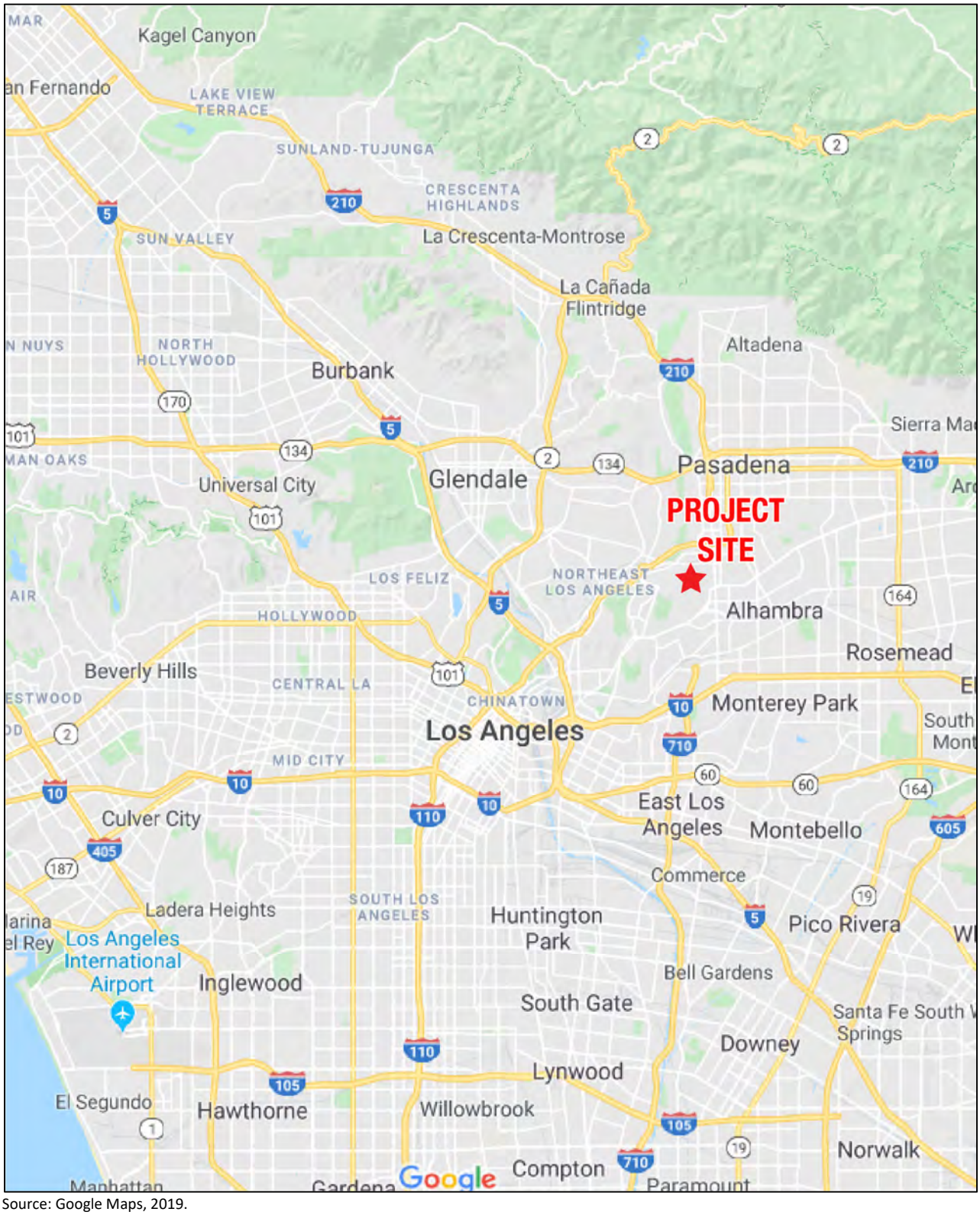
Parking for the non-residential (65 spaces) and the residential (112 spaces) uses would be provided within two levels accessed from El Centro Street along the western Project boundary. Residential parking for Zone 1 would be gated and located within Basement Plan 1. Residential parking for Zone 2 would be gated and located within Basement Plan 2 under the cottage bungalows. The remainder of the parking spaces, including five ADA spaces within Basement Plan 2, would be available for visitors accessing the non-residential uses. Six bicycle parking spaces would also be provided.

The Project also proposes open space within six patios distributed throughout the development. Extensive landscaping would be provided along the site's perimeter and throughout the site. Several existing trees, including one street tree and one protected tree, would be removed. The Project proposes to protect in place the remaining street trees and protected trees and provide 95 replacement trees.

Project Construction and Phasing

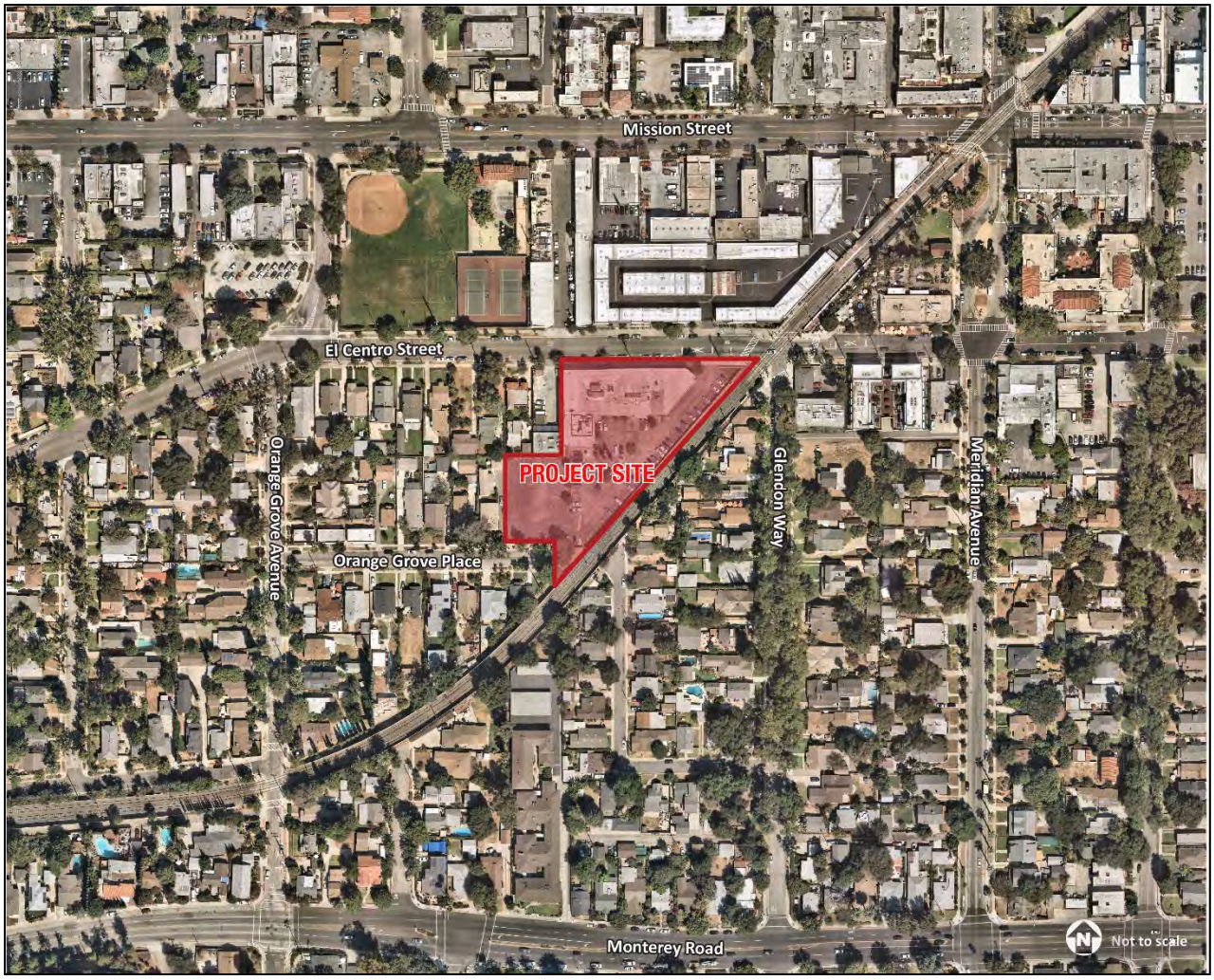
The Project would be developed in one phase. It is assumed that Project construction would occur over approximately 12 months beginning in the summer of 2021. For analysis purposes, it is anticipated that the Project would open in the fall of 2022.

Exhibit 1: Regional Vicinity



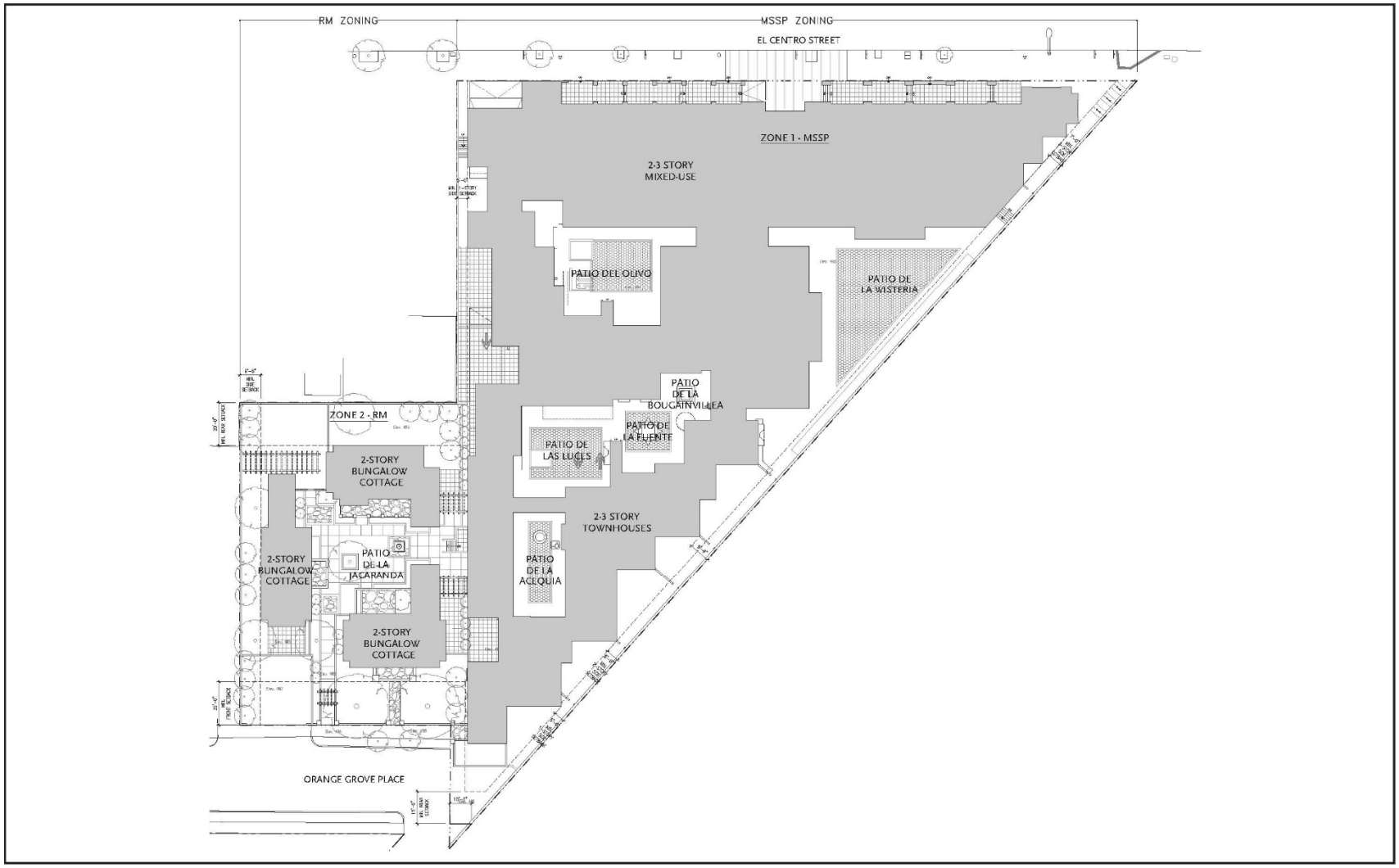
Source: Google Maps, 2019.

Exhibit 2: Site Vicinity



Source: Nearmap, 2019.

Exhibit 3: Conceptual Site Plan



Source: Moule & Polyzoides, 2019.

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.[1] 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.

[1] 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.
[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 November 20, 2019.		

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 Pasadena-South Wilson Monitoring Station located at 752 South Wilson Avenue, approximately 2.2 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	Pasadena-South Wilson Monitoring Station[1]		
	2016	2017	2018
Ozone (O_3)			
1-hour Maximum Concentration (ppm)	0.126	0.139	0.112
8-hour Maximum Concentration (ppm)	0.090	0.100	0.090
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	12	18	8
NAAQS 8-hour (>0.070 ppm)	18	36	19
Nitrogen Dioxide (NO_2)			
1-hour Maximum Concentration (ppm)	71.9	72.3	68.2
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})[2]			
National 24-hour Maximum Concentration	64.0	64.6	68.2
State 24-hour Maximum Concentration	74.6	96.2	81.2
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m^3)	0	0	0
CAAQS 24-hour (>50 µg/m^3)	21	40	31
Particulate Matter Less Than 2.5 Microns ($PM_{2.5}$)			
National 24-hour Maximum Concentration	29.2	22.8	32.5
State 24-hour Maximum Concentration	29.2	22.8	32.5
Number of Days Standard Exceeded			
NAAQS 24-hour (>35 µg/m^3)	0	0	0

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; µg/m^3 = micrograms per cubic meter; NM = not measured

1. Measurements taken at the Pasadena-South Wilson Monitoring Station located at 752 South Wilson Avenue, Pasadena, California 91106 (# 70088).
2. Measurements taken at the Los Angeles-North Main Street Monitoring Station located at 1630 North Main Street, Los Angeles, California 90012 (#70087)

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 nearest sensitive uses to the Project site include residential uses to the east, south, and west. **Table 3: Sensitive Receptors**, lists the distances and locations of nearby sensitive receptors, which primarily include single-religious institutions, educational institutions, recreational facilities, and medical and healthcare facilities.

Table 3: Sensitive Receptors

Receptor Type/Description	Distance and Direction from the Project Site[1,2]
RESIDENTIAL	
Single-Family Residences	Adjoining to the west, south, and east
RELIGIOUS INSTITUTIONS	
South Pasadena Assembly of God	989 feet west
Pasadena United Methodist Church	1,099 feet southwest
Holy Family Catholic Church	2,483 feet southeast
Calvary Presbyterian Church	1,662 feet east
Grace Brethren Church	1,658 feet east
EDUCATIONAL INSTITUTIONS	
El Centro School	704 feet east
Arroyo Vista Elementary School	1,929 feet west
South Pasadena Senior High School	1,634 feet southeast
South Pasadena Public Library	765 feet east
RECREATIONAL FACILITIES	
Orange Grove Park	43 feet northwest
MEDICAL AND HEALTHCARE FACILITIES	
South Pasadena Convalescent Hospital	413 feet to the north

1. Distances measured in Google Earth, 2019.
2. Distance measured from the nearest Project site boundary to the area of frequent receptor exposure (e.g., at a residence, recreational activity area at a park, playground facilities at a school, etc.).

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

Notes:
ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = 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/m^3.

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/m^3. 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 *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)*, January 31, 2020.		

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.

3.4 Local

City of South Pasadena General Plan

The *City of South Pasadena General Plan*[2] (SPGP, adopted October 1998) is the City's blueprint for development. Project-relevant policies specific to air quality are mentioned in this section. Where inconsistencies exist, if any, they are addressed in the respective impact analysis below. SPGP policies that address air quality impacts include the following:

[2] The City of South Pasadena is currently updating its General Plan and released the draft South Pasadena General Plan Update on November 4, 2019. However, since the proposed South Pasadena General Plan Update has not been adopted at the time this Air Quality Assessment was prepared, the relevant policies listed herein are from the SPGP.

Policy 18.1 Improve air quality. Improve the air quality in South Pasadena and the region.

Mission Street Specific Plan

The Mission Street Specific Plan was developed to address the impacts of the Metro Gold Line and to implement the Community Vision of Mission Street as South Pasadena's pedestrian oriented historic shopping street. The Plan includes detailed regulatory mechanisms tailored to the particular needs of the Mission Street area. The Mission Street Specific Plan does not include any relevant policies that address air quality.

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 shown 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, *South Coast AQMD 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 significance of localized impacts depends on whether ambient CO levels near the Project site are above state and federal CO standards (the more stringent California standards are 20 ppm for 1-hour and 9 ppm for 8-hour). The Basin 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 emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ 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 acres or less on a single day. The City of South Pasadena is located within SCAQMD SRA 8 (West San Gabriel Valley). **Table 7: Local Significance Thresholds (Construction/Operations)**, shows the LSTs for a 1-acre, 2-acre, and 5-acre project site in SRA 8 with sensitive receptors located within 25 meters of the 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 Acre	69/69	535/535	4/1	3/1
2 Acres	98/98	812/812	6/2	4/1
5 Acres	148/148	1,540/1,540	12/3	7/2

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 emissions of criteria air pollutants and precursors. 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 version 2016.3.2 (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 located within SCAB, which is under SCAQMD's jurisdiction. The SCAQMD is required, pursuant to the FCAA, to reduce emissions of criteria pollutants 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 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 shown 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, no impact is expected, and the Project would be consistent with the first criterion.

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 the development of the AQMP 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 Project site is designated Medium Density Residential in the SPGP and is in the Mission Street Specific Plan area. The Medium Density Residential designation is intended to support the development of duplexes, triplexes, fourplexes, and other attached dwellings at a density of 6-14 units per acre, not exceeding two stories, in combination with single-family dwellings as "bungalow courts".[3] The site is zoned RM (Residential Medium Density). Within Zone 1, the Project proposes a 79,860 square-foot mixed-use facility with 57 residential units and 6,100 square-feet of commercial uses. Within Zone 2, the Project proposes three, two-story bungalow cottages. These proposed uses are permitted by-right within the Mission Street Specific Plan area (RM zoning district).

As such, the Project is consistent with the intended use for the site and would not conflict with or exceed SCAG's regional growth forecasts for the City of South Pasadena. It is also noted that the Project's construction and operational air emissions would not exceed the SCAQMD regional thresholds, and localized emissions during construction and operations would be below SCAQMD LST thresholds; see the impact discussions for Thresholds 5.2 and 5.3 below. Therefore, the Project would be consistent with the second criterion and a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

[3] City of South Pasadena, *City of South Pasadena General Plan*, adopted October 1998.

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 emissions of criteria air pollutants. 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-generated 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 pollutants generated exceeds the SCAQMD's thresholds of significance.

Construction results in the temporary generation of 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. Emissions of airborne particulate matter 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 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 were assumed to begin in Summer of 2021. Building construction was assumed to begin in the Winter of 2021 and last until Summer 2022. Paving was modeled to be completed by Winter 2021, and architectural coating was modeled to be completed by Fall 2022. See **Appendix A: Air Quality Data** for additional information regarding the construction assumptions used in this analysis.

The Project's predicted maximum daily construction-related emissions are summarized in **Table 8: Construction-Related Emissions**. As shown in **Table 8**, all criteria pollutant emissions would remain below their respective thresholds with implementation of required SCAQMD Rule 403. The Project would also be required to comply with SCAQMD Rules 402 and 1113, which prohibit nuisances and limit VOC content in paints, respectively, and would further reduce specific construction-related emissions. SCAQMD Rules 402, 403, and 1113 are described in described in the *Regulatory Setting – Regional* section above. As shown in **Table 8**, all criteria pollutant emissions would remain below their respective thresholds and would not worsen ambient air quality, create additional violations of federal and state standards, or delay SCAB's goal for meeting attainment standards. Impacts would be less than significant in this regard.

Operational Emissions

The Project's operational emissions would be associated with motor vehicle use and area sources. Area sources include natural gas for space and water heating, gasoline-powered landscaping and maintenance equipment, consumer products (such as household cleaners). Mobile sources emissions are generated from vehicle operations associated with Project operations. Typically, area 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 source emissions. The estimated net increase in emissions from Project operations were calculated using CalEEMod and are summarized in **Table 9: Operational Emissions**.

Table 8: Construction-Related Emissions

Construction Year	Emissions (pounds per day)[1,2]					
	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
2021	4.78	86.37	39.76	0.20	8.93	5.61
2022	14.09	30.20	37.04	0.07	3.56	1.92
SCAQMD Threshold	*75*	*100*	*550*	*150*	*55*	*150*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

1. Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported.
2. SCAQMD Rule 403 Fugitive Dust applied for construction emissions. 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; replace ground cover of area disturbed; 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.

Table 9: Operational Emissions

Source	Emissions (pounds per day)[1]					
	Reactive Organic Gases (ROG)	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Area Source Emissions	1.64	0.90	5.10	0.00	0.09	0.09
Energy Emissions	0.04	0.40	0.25	0.00	0.03	0.03
Mobile Emissions	1.36	6.60	16.30	0.06	4.86	1.33
Total Emissions	**3.04**	**7.90**	**21.62**	**0.06**	**4.99**	**1.46**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceeds Threshold?	***No***	***No***	***No***	***No***	***No***	***No***

1. Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case unmitigated maximum daily emissions are reported.

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

Area Source Emissions

Area source emissions would be generated due to consumer products, architectural coating, and landscaping. As shown in **Table 9**, the Project's area source emissions would not exceed SCAQMD thresholds. Therefore, mitigation measures are not required, and a less than significant impact is anticipated.

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 shown in **Table 9**, the Project's energy source emissions would not exceed SCAQMD thresholds for criteria pollutants. As such, the Project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation. Therefore, the Project's operational air quality impacts would be less than significant.

Mobile Source

Mobile sources are emissions 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. According to the *Seven Patios Mixed Use Residential/Commercial Retail Project Traffic Impact Analysis* prepared by Ganddini Group, Inc. (February 2020), the proposed Project would generate 757 daily trips. As shown in **Table 9**, mobile source emissions would not exceed SCAQMD thresholds for criteria pollutants. Therefore, the Project's air quality impacts associated with mobile source emissions would be less than significant.

Total Operational Emissions

As shown 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.

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

As shown 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 the single-family residential dwellings located approximately 20 feet (6.1 meters) to the west of the Project construction zone. 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 West San Gabriel Valley (SRA 8), since this area includes the Project site. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The SCAQMD produced 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
	Graders	0	0.5	8	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 are the single-family residential dwellings located approximately 20 feet (6.1 meters)

to the west of the Project construction zone. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, as recommended by the SCAQMD, LSTs for receptors located at 25 meters were utilized in this analysis for receptors closer than 25 meters. **Table 11: Localized Significance of Construction Emissions**, presents the results of localized emissions during Project construction.

Table 11 shows that the emissions of these pollutants 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.

Table 11: Localized Significance of Construction Emissions

Construction Activity	Emissions (pounds per day)[1,2]			
	Nitrogen Oxide (NO_x)	Carbon Monoxide (CO)	Coarse Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Demolition (2021)	31.44	21.56	4.62	1.90
Site Preparation (2021)	40.50	21.15	8.74	5.56
Grading (2021)	31.20	25.67	1.47	2.60
Building Construction (2021)	30.35	31.23	1.64	1.52
Building Construction (2022)	26.74	30.94	1.38	1.28
Paving (2021)	12.92	14.65	0.68	0.62
Architectural Coating (2022)	1.41	1.81	0.08	0.08
Maximum Daily Emissions	*40.50*	*31.23*	*8.74*	*5.56*
SCAQMD Localized Screening Threshold (adjusted for 3.5 acres at 25 meters)	123	1,176	9	6
Maximum Daily Emissions Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**

1. Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported.
2. SCAQMD Rule 403 Fugitive Dust applied for construction emissions. 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; replace ground cover of area disturbed; 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.

Localized Operational Significance Analysis

LSTs for receptors located at 25 meters for SRA 8 were utilized in this analysis. As the Project site is 1.61 acres, the 1-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** shows 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.

Table 12: Localized Significance of Operational Emissions				
Activity	**Emissions (pounds per day)[1]**			
	Nitrogen Oxides (NO_X)	**Carbon Monoxide (CO)**	**Coarse Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**
On-Site Emissions (Area and Energy Sources)	1.30	5.33	0.13	0.13
SCAQMD Localized Screening Threshold (1 acre at 25 meters)	*69*	*535*	*1*	*1*
Exceed SCAQMD Threshold?	**No**	**No**	**No**	**No**
1. Emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod), as recommended by the SCAQMD. Worst-case seasonal maximum daily emissions are reported.				
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 regional, State, and federal level 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.

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[4] 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.

[4] 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).

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.

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 be less than significant and would not exceed SCAQMD thresholds (refer to **Table 8** and **Table 9**). Localized effects of on-site Project emissions on nearby receptors were also found to be less than significant (refer to **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

An analysis of CO "hot spots" 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, the CO standard in California 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 average daily trips (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 229 daily trips attributable to the Project (187 net daily trips). Therefore, impacts would be less than significant.

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 closest sensitive receptors to the Project site are single-family residential uses located approximately 20 feet west of the Project construction zone.

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 five minutes to further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. Additionally, it should be noted that the proposed Project would replace an existing industrial park which currently uses diesel vehicles (TAC sources) that idle on-site. With Project implementation TAC emissions from the existing industrial park would no longer occur. For these reasons, DPM generated by Project construction activities, in and of

itself, would not expose sensitive receptors to substantial amounts of air toxics and the Project would result in a less than significant impact.

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 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.

Operational

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 the development of a mixed-use project including a mixture of restaurant and retail uses. 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 South Pasadena and the SCAB. The SCAB is designated as a nonattainment area for state standards of ozone, PM_{10}, and $PM_{2.5}$. For federal standards, the SCAB is designated as a nonattainment area for 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 requirements of the FCAA and CCAA. 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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4. California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005.
5. California Air Resources Board, *Current Air Quality Standards*, 2016.
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12. Federal Highway Administration*, Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents,* 2016.
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14. Google Earth, 2019.
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16. Southern California Association of Governments, *2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction*, https://www.scag.ca.gov/Documents/2016_2040RTPSCS_FinalGrowthForecastbyJurisdiction.pdf, accessed November 20, 2019.
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21. United States Environmental Protection Agency, *National Ambient Air Quality Standards Table*, 2016.
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23. 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

Seven Patios Mixed Use - Los Angeles-South Coast County, Summer

Seven Patios Mixed Use

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant w/o Drive Thru	3.05	1000sqft	0.07	3,050.00	0
Strip Mall	3.05	1000sqft	0.07	3,050.00	0
Apartments Low Rise	57.00	Dwelling Unit	3.56	57,000.00	163
Enclosed Parking with Elevator	177.00	Space	1.59	70,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**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 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029.208*0.00617=546.4363 to avoid double counting

Land Use - Per project information

Off-road Equipment - Additional excavators for underground parking

Grading - 48,720 CY of export

Demolition - Demolition of 1,200 tons of debris (parking lot) and 36,000 SF office building

Vehicle Trips - Per Project Trip Generation Table

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per SCAQMD rules and regulations

Area Mitigation -

Energy Mitigation - Exceed Title 24 by 15%-25% for 2019 standards

Water Mitigation -

Waste Mitigation -

Construction Phase - Anticipated construction schedule

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	230.00	187.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	11/22/2022	9/26/2022
tblConstructionPhase	PhaseEndDate	9/27/2022	9/8/2022
tblConstructionPhase	PhaseEndDate	11/9/2021	11/23/2021
tblConstructionPhase	PhaseEndDate	10/25/2022	12/21/2021
tblConstructionPhase	PhaseStartDate	10/26/2022	8/1/2022
tblConstructionPhase	PhaseStartDate	11/10/2021	12/22/2021
tblConstructionPhase	PhaseStartDate	9/28/2022	11/24/2021
tblGrading	AcresOfGrading	15.00	10.00
tblGrading	MaterialExported	0.00	48,720.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	73.00	15.00
tblVehicleTrips	ST_TR	7.16	7.32

tblVehicleTrips	ST_TR	696.00	112.18
tblVehicleTrips	ST_TR	42.04	37.75
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	SU_TR	500.00	112.18
tblVehicleTrips	SU_TR	20.43	37.75
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	716.00	112.18
tblVehicleTrips	WD_TR	44.32	37.75

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					
2021	4.7348	85.6945	39.0448	0.2052	18.2675	2.0461	20.3135	9.9840	1.8824	11.8664	0.0000	21,726.1792	21,726.1792	2.5853	0.0000	21,790.8112
2022	14.0399	30.1774	37.0413	0.0689	2.2147	1.4709	3.6857	0.5715	1.3768	1.9483	0.0000	6,692.8388	6,692.8388	1.4052	0.0000	6,727.9692
Maximum	**14.0399**	**85.6945**	**39.0448**	**0.2052**	**18.2675**	**2.0461**	**20.3135**	**9.9840**	**1.8824**	**11.8664**	**0.0000**	**21,726.1792**	**21,726.1792**	**2.5853**	**0.0000**	**21,790.8112**

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					
2021	4.7348	85.6945	39.0448	0.2052	6.8843	2.0461	8.9303	3.7301	1.8824	5.6125	0.0000	21,726.1792	21,726.1792	2.5853	0.0000	21,790.8112
2022	14.0399	30.1774	37.0413	0.0689	2.0930	1.4709	3.5639	0.5416	1.3768	1.9185	0.0000	6,692.8388	6,692.8388	1.4052	0.0000	6,727.9692
Maximum	**14.0399**	**85.6945**	**39.0448**	**0.2052**	**6.8843**	**2.0461**	**8.9303**	**3.7301**	**1.8824**	**5.6125**	**0.0000**	**21,726.1792**	**21,726.1792**	**2.5853**	**0.0000**	**21,790.8112**

	ROG	NOx	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**	**56.17**	**0.00**	**47.94**	**59.53**	**0.00**	**45.49**	**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	16.4730	1.2371	33.7138	0.0742		4.3802	4.3802		4.3802	4.3802	533.9144	1,034.5076	1,568.4219	1.6005	0.0362	1,619.2337
Energy	0.0485	0.4256	0.2600	2.6400e-003		0.0335	0.0335		0.0335	0.0335		528.6662	528.6662	0.0101	9.6900e-003	531.8078
Mobile	1.4028	6.4776	16.9985	0.0602	4.8153	0.0489	4.8642	1.2887	0.0457	1.3343		6,129.6734	6,129.6734	0.3149		6,137.5460
Total	**17.9243**	**8.1402**	**50.9723**	**0.1370**	**4.8153**	**4.4626**	**9.2779**	**1.2887**	**4.4593**	**5.7480**	**533.9144**	**7,692.8472**	**8,226.7616**	**1.9255**	**0.0459**	**8,288.5875**

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	1.6366	0.9054	5.0885	5.6800e-003		0.0949	0.0949		0.0949	0.0949	0.0000	1,094.8605	1,094.8605	0.0291	0.0199	1,101.5230
Energy	0.0454	0.3986	0.2463	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.7222	494.7222	9.4800e-003	9.0700e-003	497.6621
Mobile	1.4028	6.4776	16.9985	0.0602	4.8153	0.0489	4.8642	1.2887	0.0457	1.3343		6,129.6734	6,129.6734	0.3149		6,137.5460
Total	**3.0847**	**7.7816**	**22.3332**	**0.0684**	**4.8153**	**0.1752**	**4.9905**	**1.2887**	**0.1719**	**1.4605**	**0.0000**	**7,719.2561**	**7,719.2561**	**0.3535**	**0.0290**	**7,736.7311**

	ROG	NOx	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	**82.79**	**4.41**	**56.19**	**50.12**	**0.00**	**96.08**	**46.21**	**0.00**	**96.15**	**74.59**	**100.00**	**-0.34**	**6.17**	**81.64**	**36.88**	**6.66**

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	9/1/2021	9/28/2021	5	20	
2	Site Preparation	Site Preparation	9/29/2021	10/12/2021	5	10	
3	Grading	Grading	10/13/2021	11/23/2021	5	30	
4	Paving	Paving	11/24/2021	12/21/2021	5	20	
5	Building Construction	Building Construction	12/22/2021	9/8/2022	5	187	
6	Architectural Coating	Architectural Coating	8/1/2022	9/26/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.59

Residential Indoor: 115,425; Residential Outdoor: 38,475; Non-Residential Indoor: 9,150; Non-Residential Outdoor: 3,050; Striped

OffRoad Equipment

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

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	283.00	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	9	15.00	0.00	6,090.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	73.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	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
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 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					
Fugitive Dust					3.0676	0.0000	3.0676	0.4645	0.0000	0.4645			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.0676**	**1.5513**	**4.6189**	**0.4645**	**1.4411**	**1.9055**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

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	0.1180	3.7956	0.8900	0.0110	0.2474	0.0117	0.2591	0.0678	0.0112	0.0790		1,197.7215	1,197.7215	0.0813		1,199.7535
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	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.1823**	**3.8398**	**1.4941**	**0.0128**	**0.4151**	**0.0130**	**0.4281**	**0.1123**	**0.0124**	**0.1247**		**1,368.5370**	**1,368.5370**	**0.0863**		**1,370.6948**

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					1.1365	0.0000	1.1365	0.1721	0.0000	0.1721			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**1.1365**	**1.5513**	**2.6879**	**0.1721**	**1.4411**	**1.6132**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

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	0.1180	3.7956	0.8900	0.0110	0.2362	0.0117	0.2478	0.0651	0.0112	0.0762		1,197.7215	1,197.7215	0.0813		1,199.7535
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	0.0643	0.0442	0.6042	1.7100e-003	0.1589	1.3500e-003	0.1603	0.0423	1.2500e-003	0.0436		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.1823**	**3.8398**	**1.4941**	**0.0128**	**0.3951**	**0.0130**	**0.4081**	**0.1074**	**0.0124**	**0.1198**		**1,368.5370**	**1,368.5370**	**0.0863**		**1,370.6948**

3.3 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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	0.0772	0.0530	0.7250	2.0600e-003	0.2012	1.6300e-003	0.2028	0.0534	1.5000e-003	0.0549		204.9786	204.9786	6.0400e-003		205.1296
Total	**0.0772**	**0.0530**	**0.7250**	**2.0600e-003**	**0.2012**	**1.6300e-003**	**0.2028**	**0.0534**	**1.5000e-003**	**0.0549**		**204.9786**	**204.9786**	**6.0400e-003**		**205.1296**

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					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**6.6936**	**2.0445**	**8.7380**	**3.6793**	**1.8809**	**5.5602**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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	0.0772	0.0530	0.7250	2.0600e-003	0.1907	1.6300e-003	0.1923	0.0508	1.5000e-003	0.0523		204.9786	204.9786	6.0400e-003		205.1296
Total	**0.0772**	**0.0530**	**0.7250**	**2.0600e-003**	**0.1907**	**1.6300e-003**	**0.1923**	**0.0508**	**1.5000e-003**	**0.0523**		**204.9786**	**204.9786**	**6.0400e-003**		**205.1296**

3.4 Grading - 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					
Fugitive Dust					6.5592	0.0000	6.5592	3.3762	0.0000	3.3762			0.0000			0.0000
Off-Road	2.9779	31.1969	25.6729	0.0452		1.4732	1.4732		1.3554	1.3554		4,372.5044	4,372.5044	1.4142		4,407.8583
Total	**2.9779**	**31.1969**	**25.6729**	**0.0452**	**6.5592**	**1.4732**	**8.0325**	**3.3762**	**1.3554**	**4.7316**		**4,372.5044**	**4,372.5044**	**1.4142**		**4,407.8583**

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	1.6926	54.4534	12.7678	0.1584	3.5495	0.1671	3.7167	0.9730	0.1599	1.1329		17,182.8593	17,182.8593	1.1661		17,212.0115
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	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**1.7569**	**54.4976**	**13.3719**	**0.1601**	**3.7172**	**0.1685**	**3.8857**	**1.0175**	**0.1612**	**1.1786**		**17,353.6748**	**17,353.6748**	**1.1711**		**17,382.9528**

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					2.4302	0.0000	2.4302	1.2509	0.0000	1.2509			0.0000			0.0000
Off-Road	2.9779	31.1969	25.6729	0.0452		1.4732	1.4732		1.3554	1.3554	0.0000	4,372.5044	4,372.5044	1.4142		4,407.8583
Total	**2.9779**	**31.1969**	**25.6729**	**0.0452**	**2.4302**	**1.4732**	**3.9034**	**1.2509**	**1.3554**	**2.6063**	**0.0000**	**4,372.5044**	**4,372.5044**	**1.4142**		**4,407.8583**

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	1.6926	54.4534	12.7678	0.1584	3.3885	0.1671	3.5556	0.9335	0.1599	1.0934		17,182.8593	17,182.8593	1.1661		17,212.0115
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	0.0643	0.0442	0.6042	1.7100e-003	0.1589	1.3500e-003	0.1603	0.0423	1.2500e-003	0.0436		170.8155	170.8155	5.0300e-003		170.9413
Total	**1.7569**	**54.4976**	**13.3719**	**0.1601**	**3.5474**	**0.1685**	**3.7159**	**0.9758**	**0.1612**	**1.1369**		**17,353.6748**	**17,353.6748**	**1.1711**		**17,382.9528**

3.5 Paving - 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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0643	0.0442	0.6042	1.7100e-003	0.1589	1.3500e-003	0.1603	0.0423	1.2500e-003	0.0436		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1589**	**1.3500e-003**	**0.1603**	**0.0423**	**1.2500e-003**	**0.0436**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

3.6 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	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248		4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**		**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

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	0.0578	1.8447	0.4823	4.8900e-003	0.2083	3.7700e-003	0.2121	0.0563	3.6100e-003	0.0599		522.2732	522.2732	0.0308		523.0424
Worker	0.3772	0.2593	3.5444	0.0101	1.8388	7.9500e-003	1.8467	0.4708	7.3200e-003	0.4781		1,002.1175	1,002.1175	0.0295		1,002.8557
Total	**0.4350**	**2.1040**	**4.0267**	**0.0150**	**2.0471**	**0.0117**	**2.0588**	**0.5271**	**0.0109**	**0.5380**		**1,524.3907**	**1,524.3907**	**0.0603**		**1,525.8981**

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	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248	0.0000	4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**	**0.0000**	**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

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	0.0578	1.8447	0.4823	4.8900e-003	0.1979	3.7700e-003	0.2017	0.0537	3.6100e-003	0.0574		522.2732	522.2732	0.0308		523.0424
Worker	0.3772	0.2593	3.5444	0.0101	1.7362	7.9500e-003	1.7441	0.4456	7.3200e-003	0.4529		1,002.1175	1,002.1175	0.0295		1,002.8557
Total	**0.4350**	**2.1040**	**4.0267**	**0.0150**	**1.9341**	**0.0117**	**1.9458**	**0.4993**	**0.0109**	**0.5103**		**1,524.3907**	**1,524.3907**	**0.0603**		**1,525.8981**

3.6 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	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836		4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**		**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

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	0.0542	1.7543	0.4563	4.8400e-003	0.2083	3.3000e-003	0.2116	0.0563	3.1500e-003	0.0595		517.7232	517.7232	0.0297		518.4659
Worker	0.3533	0.2342	3.2701	9.7000e-003	1.8388	7.7000e-003	1.8465	0.4708	7.0900e-003	0.4779		966.8668	966.8668	0.0267		967.5340
Total	**0.4075**	**1.9885**	**3.7264**	**0.0145**	**2.0471**	**0.0110**	**2.0581**	**0.5271**	**0.0102**	**0.5373**		**1,484.5900**	**1,484.5900**	**0.0564**		**1,485.9999**

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	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836	0.0000	4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**	**0.0000**	**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

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	0.0542	1.7543	0.4563	4.8400e-003	0.1979	3.3000e-003	0.2012	0.0537	3.1500e-003	0.0569		517.7232	517.7232	0.0297		518.4659
Worker	0.3533	0.2342	3.2701	9.7000e-003	1.7362	7.7000e-003	1.7439	0.4456	7.0900e-003	0.4527		966.8668	966.8668	0.0267		967.5340
Total	**0.4075**	**1.9885**	**3.7264**	**0.0145**	**1.9341**	**0.0110**	**1.9451**	**0.4993**	**0.0102**	**0.5096**		**1,484.5900**	**1,484.5900**	**0.0564**		**1,485.9999**

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	10.5585					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	**10.7631**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	10.5585					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	**10.7631**	**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**

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	0.1589	1.3100e-003	0.1602	0.0423	1.2100e-003	0.0435		164.8069	164.8069	4.5500e-003		164.9206
Total	**0.0602**	**0.0399**	**0.5574**	**1.6500e-003**	**0.1589**	**1.3100e-003**	**0.1602**	**0.0423**	**1.2100e-003**	**0.0435**		**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	1.4028	6.4776	16.9985	0.0602	4.8153	0.0489	4.8642	1.2887	0.0457	1.3343		6,129.6734	6,129.6734	0.3149		6,137.5460
Unmitigated	1.4028	6.4776	16.9985	0.0602	4.8153	0.0489	4.8642	1.2887	0.0457	1.3343		6,129.6734	6,129.6734	0.3149		6,137.5460

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	417.24	417.24	417.24	1,425,772	1,425,772
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	342.15	342.15	342.15	619,647	619,647
Strip Mall	115.14	115.14	115.14	219,060	219,060
Total	874.53	874.53	874.53	2,264,479	2,264,479

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 Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive Thru	16.60	8.40	6.90	1.50	79.50	19.00	51	37	12
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low 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
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	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
Strip Mall	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

Exceed Title 24

	ROG	NOx	CO	SO2	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	0.0454	0.3986	0.2463	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.7222	494.7222	9.4800e-003	9.0700e-003	497.6621
NaturalGas Unmitigated	0.0485	0.4256	0.2600	2.6400e-003		0.0335	0.0335		0.0335	0.0335		528.6662	528.6662	0.0101	9.6900e-003	531.8078

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 Low Rise	2551.69	0.0275	0.2352	0.1001	1.5000e-003		0.0190	0.0190		0.0190	0.0190		300.1988	300.1988	5.7500e-003	5.5000e-003	301.9828
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	1928.27	0.0208	0.1891	0.1588	1.1300e-003		0.0144	0.0144		0.0144	0.0144		226.8551	226.8551	4.3500e-003	4.1600e-003	228.2032
Strip Mall	13.7041	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6123	1.6123	3.0000e-005	3.0000e-005	1.6218
Total		**0.0485**	**0.4256**	**0.2600**	**2.6400e-003**		**0.0335**	**0.0335**		**0.0335**	**0.0335**		**528.6662**	**528.6662**	**0.0101**	**9.6900e-003**	**531.8078**

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 Low Rise	2.31848	0.0250	0.2137	0.0909	1.3600e-003		0.0173	0.0173		0.0173	0.0173		272.7623	272.7623	5.2300e-003	5.0000e-003	274.3832
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	1.8744	0.0202	0.1838	0.1544	1.1000e-003		0.0140	0.0140		0.0140	0.0140		220.5172	220.5172	4.2300e-003	4.0400e-003	221.8276
Strip Mall	0.0122627	1.3000e-004	1.2000e-003	1.0100e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		1.4427	1.4427	3.0000e-005	3.0000e-005	1.4512
Total		**0.0453**	**0.3986**	**0.2463**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**		**494.7222**	**494.7222**	**9.4900e-003**	**9.0700e-003**	**497.6621**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	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	1.6366	0.9054	5.0885	5.6800e-003		0.0949	0.0949		0.0949	0.0949	0.0000	1,094.8605	1,094.8605	0.0291	0.0199	1,101.5230
Unmitigated	16.4730	1.2371	33.7138	0.0742		4.3802	4.3802		4.3802	4.3802	533.9144	1,034.5076	1,568.4219	1.6005	0.0362	1,619.2337

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	0.1186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	14.9361	1.1827	28.9875	0.0740		4.3541	4.3541		4.3541	4.3541	533.9144	1,026.0000	1,559.9144	1.5922	0.0362	1,610.5193
Landscaping	0.1439	0.0545	4.7264	2.5000e-004		0.0261	0.0261		0.0261	0.0261		8.5076	8.5076	8.2700e-003		8.7144
Total	**16.4730**	**1.2371**	**33.7138**	**0.0742**		**4.3802**	**4.3802**		**4.3802**	**4.3802**	**533.9144**	**1,034.5076**	**1,568.4219**	**1.6005**	**0.0362**	**1,619.2337**

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	0.1186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0996	0.8510	0.3621	5.4300e-003		0.0688	0.0688		0.0688	0.0688	0.0000	1,086.3529	1,086.3529	0.0208	0.0199	1,092.8086
Landscaping	0.1439	0.0545	4.7264	2.5000e-004		0.0261	0.0261		0.0261	0.0261		8.5076	8.5076	8.2700e-003		8.7144
Total	**1.6366**	**0.9054**	**5.0885**	**5.6800e-003**		**0.0949**	**0.0949**		**0.0949**	**0.0949**	**0.0000**	**1,094.8605**	**1,094.8605**	**0.0291**	**0.0199**	**1,101.5230**

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

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

Seven Patios Mixed Use - Los Angeles-South Coast County, Winter

Seven Patios Mixed Use

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant w/o Drive Thru	3.05	1000sqft	0.07	3,050.00	0
Strip Mall	3.05	1000sqft	0.07	3,050.00	0
Apartments Low Rise	57.00	Dwelling Unit	3.56	57,000.00	163
Enclosed Parking with Elevator	177.00	Space	1.59	70,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**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 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029.208*0.00617=546.4262 to avoid double counting

Land Use - Per project information

Off-road Equipment - Additional excavators for underground parking

Grading - 48,720 CY of export

Demolition - Demolition of 1,200 tons of debris (parking lot) and 36,000 SF office building

Vehicle Trips - Per Project Trip Generation Table

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per SCAQMD rules and regulations

Area Mitigation -

Energy Mitigation - Exceed Title 24 by 15%-25% for 2019 standards

Water Mitigation -

Waste Mitigation -

Construction Phase - Anticipated construction schedule

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	41.00
tblConstructionPhase	NumDays	230.00	187.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	11/22/2022	9/26/2022
tblConstructionPhase	PhaseEndDate	9/27/2022	9/8/2022
tblConstructionPhase	PhaseEndDate	11/9/2021	11/23/2021
tblConstructionPhase	PhaseEndDate	10/25/2022	12/21/2021
tblConstructionPhase	PhaseStartDate	10/26/2022	8/1/2022
tblConstructionPhase	PhaseStartDate	11/10/2021	12/22/2021
tblConstructionPhase	PhaseStartDate	9/28/2022	11/24/2021
tblGrading	AcresOfGrading	15.00	10.00
tblGrading	MaterialExported	0.00	48,720.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblTripsAndVMT	VendorTripNumber	19.00	0.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	73.00	15.00
tblVehicleTrips	ST_TR	7.16	7.32

tblVehicleTrips	ST_TR	696.00	112.18
tblVehicleTrips	ST_TR	42.04	37.75
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	SU_TR	500.00	112.18
tblVehicleTrips	SU_TR	20.43	37.75
tblVehicleTrips	WD_TR	6.59	7.32
tblVehicleTrips	WD_TR	716.00	112.18
tblVehicleTrips	WD_TR	44.32	37.75

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					
2021	4.7828	86.3663	39.7640	0.2024	18.2675	2.0461	20.3135	9.9840	1.8824	11.8664	0.0000	21,418.5390	21,418.5390	2.6261	0.0000	21,484.1912
2022	14.0903	30.2019	36.7559	0.0681	2.2147	1.4711	3.6858	0.5715	1.3769	1.9484	0.0000	6,612.4920	6,612.4920	1.4053	0.0000	6,647.6233
Maximum	**14.0903**	**86.3663**	**39.7640**	**0.2024**	**18.2675**	**2.0461**	**20.3135**	**9.9840**	**1.8824**	**11.8664**	**0.0000**	**21,418.5390**	**21,418.5390**	**2.6261**	**0.0000**	**21,484.1912**

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					
2021	4.7828	86.3663	39.7640	0.2024	6.8843	2.0461	8.9303	3.7301	1.8824	5.6125	0.0000	21,418.5390	21,418.5390	2.6261	0.0000	21,484.1912
2022	14.0903	30.2019	36.7559	0.0681	2.0930	1.4711	3.5640	0.5416	1.3769	1.9186	0.0000	6,612.4920	6,612.4920	1.4053	0.0000	6,647.6233
Maximum	**14.0903**	**86.3663**	**39.7640**	**0.2024**	**6.8843**	**2.0461**	**8.9303**	**3.7301**	**1.8824**	**5.6125**	**0.0000**	**21,418.5390**	**21,418.5390**	**2.6261**	**0.0000**	**21,484.1912**

	ROG	NOx	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**	**56.17**	**0.00**	**47.94**	**59.53**	**0.00**	**45.49**	**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	16.4730	1.2371	33.7138	0.0742		4.3802	4.3802		4.3802	4.3802	533.9144	1,034.5076	1,568.4219	1.6005	0.0362	1,619.2337
Energy	0.0485	0.4256	0.2600	2.6400e-003		0.0335	0.0335		0.0335	0.0335		528.6662	528.6662	0.0101	9.6900e-003	531.8078
Mobile	1.3607	6.6004	16.2916	0.0572	4.8153	0.0493	4.8645	1.2887	0.0459	1.3346		5,830.0719	5,830.0719	0.3157		5,837.9631
Total	**17.8822**	**8.2630**	**50.2654**	**0.1341**	**4.8153**	**4.4629**	**9.2782**	**1.2887**	**4.4596**	**5.7483**	**533.9144**	**7,393.2456**	**7,927.1600**	**1.9263**	**0.0459**	**7,989.0046**

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	1.6366	0.9054	5.0885	5.6800e-003		0.0949	0.0949		0.0949	0.0949	0.0000	1,094.8605	1,094.8605	0.0291	0.0199	1,101.5230
Energy	0.0454	0.3986	0.2463	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.7222	494.7222	9.4800e-003	9.0700e-003	497.6621
Mobile	1.3607	6.6004	16.2916	0.0572	4.8153	0.0493	4.8645	1.2887	0.0459	1.3346		5,830.0719	5,830.0719	0.3157		5,837.9631
Total	**3.0427**	**7.9044**	**21.6264**	**0.0654**	**4.8153**	**0.1755**	**4.9908**	**1.2887**	**0.1722**	**1.4608**	**0.0000**	**7,419.6545**	**7,419.6545**	**0.3542**	**0.0290**	**7,437.1482**

	ROG	NOx	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	**82.99**	**4.34**	**56.98**	**51.23**	**0.00**	**96.07**	**46.21**	**0.00**	**96.14**	**74.59**	**100.00**	**-0.36**	**6.40**	**81.61**	**36.88**	**6.91**

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	9/1/2021	9/28/2021	5	20	
2	Site Preparation	Site Preparation	9/29/2021	10/12/2021	5	10	
3	Grading	Grading	10/13/2021	11/23/2021	5	30	
4	Paving	Paving	11/24/2021	12/21/2021	5	20	
5	Building Construction	Building Construction	12/22/2021	9/8/2022	5	187	
6	Architectural Coating	Architectural Coating	8/1/2022	9/26/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.59

Residential Indoor: 115,425; Residential Outdoor: 38,475; Non-Residential Indoor: 9,150; Non-Residential Outdoor: 3,050; Striped

OffRoad Equipment

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

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	283.00	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	9	15.00	0.00	6,090.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	73.00	19.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	15	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
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 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					
Fugitive Dust					3.0676	0.0000	3.0676	0.4645	0.0000	0.4645			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**3.0676**	**1.5513**	**4.6189**	**0.4645**	**1.4411**	**1.9055**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

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	0.1208	3.8421	0.9437	0.0109	0.2474	0.0118	0.2592	0.0678	0.0113	0.0791		1,176.9731	1,176.9731	0.0842		1,179.0768
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	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.1923**	**3.8911**	**1.4961**	**0.0125**	**0.4151**	**0.0132**	**0.4283**	**0.1123**	**0.0126**	**0.1249**		**1,337.8107**	**1,337.8107**	**0.0889**		**1,340.0328**

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					1.1365	0.0000	1.1365	0.1721	0.0000	0.1721			0.0000			0.0000
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**	**1.1365**	**1.5513**	**2.6879**	**0.1721**	**1.4411**	**1.6132**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

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	0.1208	3.8421	0.9437	0.0109	0.2362	0.0118	0.2480	0.0651	0.0113	0.0764		1,176.9731	1,176.9731	0.0842		1,179.0768
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	0.0715	0.0489	0.5524	1.6100e-003	0.1589	1.3500e-003	0.1603	0.0423	1.2500e-003	0.0436		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.1923**	**3.8911**	**1.4961**	**0.0125**	**0.3951**	**0.0132**	**0.4083**	**0.1074**	**0.0126**	**0.1200**		**1,337.8107**	**1,337.8107**	**0.0889**		**1,340.0328**

3.3 Site Preparation - 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					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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	0.0858	0.0587	0.6629	1.9400e-003	0.2012	1.6300e-003	0.2028	0.0534	1.5000e-003	0.0549		193.0052	193.0052	5.6800e-003		193.1472
Total	**0.0858**	**0.0587**	**0.6629**	**1.9400e-003**	**0.2012**	**1.6300e-003**	**0.2028**	**0.0534**	**1.5000e-003**	**0.0549**		**193.0052**	**193.0052**	**5.6800e-003**		**193.1472**

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					6.6936	0.0000	6.6936	3.6793	0.0000	3.6793			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**6.6936**	**2.0445**	**8.7380**	**3.6793**	**1.8809**	**5.5602**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

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	0.0858	0.0587	0.6629	1.9400e-003	0.1907	1.6300e-003	0.1923	0.0508	1.5000e-003	0.0523		193.0052	193.0052	5.6800e-003		193.1472
Total	**0.0858**	**0.0587**	**0.6629**	**1.9400e-003**	**0.1907**	**1.6300e-003**	**0.1923**	**0.0508**	**1.5000e-003**	**0.0523**		**193.0052**	**193.0052**	**5.6800e-003**		**193.1472**

3.4 Grading - 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					
Fugitive Dust					6.5592	0.0000	6.5592	3.3762	0.0000	3.3762			0.0000			0.0000
Off-Road	2.9779	31.1969	25.6729	0.0452		1.4732	1.4732		1.3554	1.3554		4,372.5044	4,372.5044	1.4142		4,407.8583
Total	**2.9779**	**31.1969**	**25.6729**	**0.0452**	**6.5592**	**1.4732**	**8.0325**	**3.3762**	**1.3554**	**4.7316**		**4,372.5044**	**4,372.5044**	**1.4142**		**4,407.8583**

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	1.7333	55.1205	13.5387	0.1556	3.5495	0.1697	3.7192	0.9730	0.1623	1.1353		16,885.1969	16,885.1969	1.2072		16,915.3769
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	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**1.8049**	**55.1694**	**14.0911**	**0.1572**	**3.7172**	**0.1710**	**3.8882**	**1.0175**	**0.1636**	**1.1810**		**17,046.0345**	**17,046.0345**	**1.2119**		**17,076.3329**

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					2.4302	0.0000	2.4302	1.2509	0.0000	1.2509			0.0000			0.0000
Off-Road	2.9779	31.1969	25.6729	0.0452		1.4732	1.4732		1.3554	1.3554	0.0000	4,372.5044	4,372.5044	1.4142		4,407.8583
Total	**2.9779**	**31.1969**	**25.6729**	**0.0452**	**2.4302**	**1.4732**	**3.9034**	**1.2509**	**1.3554**	**2.6063**	**0.0000**	**4,372.5044**	**4,372.5044**	**1.4142**		**4,407.8583**

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	1.7333	55.1205	13.5387	0.1556	3.3885	0.1697	3.5582	0.9335	0.1623	1.0958		16,885.1969	16,885.1969	1.2072		16,915.3769
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	0.0715	0.0489	0.5524	1.6100e-003	0.1589	1.3500e-003	0.1603	0.0423	1.2500e-003	0.0436		160.8377	160.8377	4.7300e-003		160.9560
Total	**1.8049**	**55.1694**	**14.0911**	**0.1572**	**3.5474**	**0.1710**	**3.7184**	**0.9758**	**0.1636**	**1.1394**		**17,046.0345**	**17,046.0345**	**1.2119**		**17,076.3329**

3.5 Paving - 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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0715	0.0489	0.5524	1.6100e-003	0.1589	1.3500e-003	0.1603	0.0423	1.2500e-003	0.0436		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1589**	**1.3500e-003**	**0.1603**	**0.0423**	**1.2500e-003**	**0.0436**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

3.6 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	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248		4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**		**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

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	0.0606	1.8409	0.5335	4.7500e-003	0.2083	3.8900e-003	0.2122	0.0563	3.7200e-003	0.0600		507.9565	507.9565	0.0328		508.7763
Worker	0.4196	0.2870	3.2407	9.4700e-003	1.8388	7.9500e-003	1.8467	0.4708	7.3200e-003	0.4781		943.5810	943.5810	0.0278		944.2751
Total	**0.4802**	**2.1279**	**3.7741**	**0.0142**	**2.0471**	**0.0118**	**2.0589**	**0.5271**	**0.0110**	**0.5381**		**1,451.5375**	**1,451.5375**	**0.0606**		**1,453.0514**

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	3.1565	30.3512	31.2284	0.0497		1.6363	1.6363		1.5248	1.5248	0.0000	4,760.5748	4,760.5748	1.3299		4,793.8216
Total	**3.1565**	**30.3512**	**31.2284**	**0.0497**		**1.6363**	**1.6363**		**1.5248**	**1.5248**	**0.0000**	**4,760.5748**	**4,760.5748**	**1.3299**		**4,793.8216**

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	0.0606	1.8409	0.5335	4.7500e-003	0.1979	3.8900e-003	0.2018	0.0537	3.7200e-003	0.0575		507.9565	507.9565	0.0328		508.7763
Worker	0.4196	0.2870	3.2407	9.4700e-003	1.7362	7.9500e-003	1.7441	0.4456	7.3200e-003	0.4529		943.5810	943.5810	0.0278		944.2751
Total	**0.4802**	**2.1279**	**3.7741**	**0.0142**	**1.9341**	**0.0118**	**1.9459**	**0.4993**	**0.0110**	**0.5104**		**1,451.5375**	**1,451.5375**	**0.0606**		**1,453.0514**

3.6 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	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836		4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**		**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

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	0.0569	1.7495	0.5050	4.7100e-003	0.2083	3.4100e-003	0.2117	0.0563	3.2600e-003	0.0596		503.4435	503.4435	0.0316		504.2345
Worker	0.3941	0.2592	2.9848	9.1400e-003	1.8388	7.7000e-003	1.8465	0.4708	7.0900e-003	0.4779		910.4211	910.4211	0.0251		911.0478
Total	**0.4510**	**2.0087**	**3.4897**	**0.0139**	**2.0471**	**0.0111**	**2.0582**	**0.5271**	**0.0104**	**0.5374**		**1,413.8647**	**1,413.8647**	**0.0567**		**1,415.2824**

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	2.8091	26.7405	30.9439	0.0497		1.3769	1.3769		1.2836	1.2836	0.0000	4,761.9939	4,761.9939	1.3260		4,795.1426
Total	**2.8091**	**26.7405**	**30.9439**	**0.0497**		**1.3769**	**1.3769**		**1.2836**	**1.2836**	**0.0000**	**4,761.9939**	**4,761.9939**	**1.3260**		**4,795.1426**

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	0.0569	1.7495	0.5050	4.7100e-003	0.1979	3.4100e-003	0.2013	0.0537	3.2600e-003	0.0570		503.4435	503.4435	0.0316		504.2345
Worker	0.3941	0.2592	2.9848	9.1400e-003	1.7362	7.7000e-003	1.7439	0.4456	7.0900e-003	0.4527		910.4211	910.4211	0.0251		911.0478
Total	**0.4510**	**2.0087**	**3.4897**	**0.0139**	**1.9341**	**0.0111**	**1.9452**	**0.4993**	**0.0104**	**0.5097**		**1,413.8647**	**1,413.8647**	**0.0567**		**1,415.2824**

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	10.5585					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	**10.7631**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

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	10.5585					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	**10.7631**	**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**

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	0.1589	1.3100e-003	0.1602	0.0423	1.2100e-003	0.0435		155.1854	155.1854	4.2700e-003		155.2922
Total	**0.0672**	**0.0442**	**0.5088**	**1.5600e-003**	**0.1589**	**1.3100e-003**	**0.1602**	**0.0423**	**1.2100e-003**	**0.0435**		**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	1.3607	6.6004	16.2916	0.0572	4.8153	0.0493	4.8645	1.2887	0.0459	1.3346		5,830.0719	5,830.0719	0.3157		5,837.9631
Unmitigated	1.3607	6.6004	16.2916	0.0572	4.8153	0.0493	4.8645	1.2887	0.0459	1.3346		5,830.0719	5,830.0719	0.3157		5,837.9631

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	417.24	417.24	417.24	1,425,772	1,425,772
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	342.15	342.15	342.15	619,647	619,647
Strip Mall	115.14	115.14	115.14	219,060	219,060
Total	874.53	874.53	874.53	2,264,479	2,264,479

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 Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive Thru	16.60	8.40	6.90	1.50	79.50	19.00	51	37	12
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low 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
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	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
Strip Mall	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

Exceed Title 24

	ROG	NOx	CO	SO2	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	0.0454	0.3986	0.2463	2.4700e-003		0.0313	0.0313		0.0313	0.0313		494.7222	494.7222	9.4800e-003	9.0700e-003	497.6621
NaturalGas Unmitigated	0.0485	0.4256	0.2600	2.6400e-003		0.0335	0.0335		0.0335	0.0335		528.6662	528.6662	0.0101	9.6900e-003	531.8078

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 Low Rise	2551.69	0.0275	0.2352	0.1001	1.5000e-003		0.0190	0.0190		0.0190	0.0190		300.1988	300.1988	5.7500e-003	5.5000e-003	301.9828
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	1928.27	0.0208	0.1891	0.1588	1.1300e-003		0.0144	0.0144		0.0144	0.0144		226.8551	226.8551	4.3500e-003	4.1600e-003	228.2032
Strip Mall	13.7041	1.5000e-004	1.3400e-003	1.1300e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6123	1.6123	3.0000e-005	3.0000e-005	1.6218
Total		**0.0485**	**0.4256**	**0.2600**	**2.6400e-003**		**0.0335**	**0.0335**		**0.0335**	**0.0335**		**528.6662**	**528.6662**	**0.0101**	**9.6900e-003**	**531.8078**

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 Low Rise	2.31848	0.0250	0.2137	0.0909	1.3600e-003		0.0173	0.0173		0.0173	0.0173		272.7623	272.7623	5.2300e-003	5.0000e-003	274.3832
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	1.8744	0.0202	0.1838	0.1544	1.1000e-003		0.0140	0.0140		0.0140	0.0140		220.5172	220.5172	4.2300e-003	4.0400e-003	221.8276
Strip Mall	0.0122627	1.3000e-004	1.2000e-003	1.0100e-003	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		1.4427	1.4427	3.0000e-005	3.0000e-005	1.4512
Total		**0.0453**	**0.3986**	**0.2463**	**2.4700e-003**		**0.0313**	**0.0313**		**0.0313**	**0.0313**		**494.7222**	**494.7222**	**9.4900e-003**	**9.0700e-003**	**497.6621**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	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	1.6366	0.9054	5.0885	5.6800e-003		0.0949	0.0949		0.0949	0.0949	0.0000	1,094.8605	1,094.8605	0.0291	0.0199	1,101.5230
Unmitigated	16.4730	1.2371	33.7138	0.0742		4.3802	4.3802		4.3802	4.3802	533.9144	1,034.5076	1,568.4219	1.6005	0.0362	1,619.2337

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	0.1186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	14.9361	1.1827	28.9875	0.0740		4.3541	4.3541		4.3541	4.3541	533.9144	1,026.0000	1,559.9144	1.5922	0.0362	1,610.5193
Landscaping	0.1439	0.0545	4.7264	2.5000e-004		0.0261	0.0261		0.0261	0.0261		8.5076	8.5076	8.2700e-003		8.7144
Total	**16.4730**	**1.2371**	**33.7138**	**0.0742**		**4.3802**	**4.3802**		**4.3802**	**4.3802**	**533.9144**	**1,034.5076**	**1,568.4219**	**1.6005**	**0.0362**	**1,619.2337**

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	0.1186					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2745					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0996	0.8510	0.3621	5.4300e-003		0.0688	0.0688		0.0688	0.0688	0.0000	1,086.3529	1,086.3529	0.0208	0.0199	1,092.8086
Landscaping	0.1439	0.0545	4.7264	2.5000e-004		0.0261	0.0261		0.0261	0.0261		8.5076	8.5076	8.2700e-003		8.7144
Total	**1.6366**	**0.9054**	**5.0885**	**5.6800e-003**		**0.0949**	**0.0949**		**0.0949**	**0.0949**	**0.0000**	**1,094.8605**	**1,094.8605**	**0.0291**	**0.0199**	**1,101.5230**

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

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

Greenhouse Gas Emissions Assessment

845 El Centro Street Project

City of South Pasadena, California

Prepared by:

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LIST OF ABBREVIATED TERMS

AB	Assembly Bill
APN	Assessor Parcel Numbers
CAP	Climate Action Plan
CARB	California Air Resource Board
CCR	California Code of Regulations
CCSP	Climate Change Scoping Plan
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen Code	California Green Building Standards Code
CPUC	California Public Utilities Commission
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CCSP	Climate Change Scoping Plan
cy	cubic yard
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH_4	Methane
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	million tons of carbon dioxide equivalent
MSSP	Mission Street Specific Plan
NHTSA	National Highway Traffic Safety Administration
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
PFC	Perfluorocarbon
RM	Residential Medium Density
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SPGP	South Pasadena General Plan
SCAG	Southern California Association of Government
Sf	square foot
SF_6	sulfur hexafluoride
TAC	toxic air contaminants

1 INTRODUCTION

This report documents the results of a Greenhouse Gas (GHG) Emissions Assessment completed for the 845 El Centro Street Project (Project). The purpose of this GHG Emissions Assessment is to evaluate the potential construction and operational emissions associated with the proposed Project and determine the level of impact the Project would have on the environment.

1.1 Project Location & Setting

The Project site is located along the south side of El Centro Street, immediately west of the Metro Gold Line right-of-way and north of Orange Grove Place in the City of South Pasadena, within Los Angeles County; refer to **Exhibit 1: Regional Vicinity**. The Project site is more specifically located at 845 El Centro Street/832 Orange Grove Place, with a common reference of 899 El Centro Street. Local access to the Project area is provided via Mission Street to the north, Fremont Avenue to the east and Monterey Road to the south. Regional access is available via the 110 Freeway, accessible from both the north and west of the subject site; refer to **Exhibit 2: Site Vicinity**.

The Project site consists of three parcels (Assessor's Parcel Numbers [APNs] 5315-019-045, 046, and 048) totaling approximately 1.61 acres. The site is currently developed with an approximately 36,000 square-foot, two-story office building (built in 1980) and 159 parking spaces in both covered (gated) and surface parking. Access to the surface parking area is provided at the Project site's eastern boundary from El Centro Street. Access to the covered parking area is provided at the site's western boundary, from El Centro Street. Other noted site conditions include parking lot light standards, ornamental landscaping and a cinderblock wall along the eastern, southern and the southernmost portion of the site's western perimeter.

The Project site is designated Mission Street Specific Plan and Medium Density Residential by the General Plan and is zoned Mission Street Specific Plan (MSSP) and Residential Medium Density (RM). The MSSP was developed to address the impacts of the Metro Gold Line and to implement the Community Vision of Mission Street as South Pasadena's pedestrian oriented historic shopping street.

The Project site is bordered by a variety of land uses, including El Centro Street, Orange Grove Park, a self-storage facility, and the City of South Pasadena Public Works Department Maintenance and Operations facility to the north; the Metro Gold Line South Pasadena to the northeast; the Metro Gold Line rail and right-of-way, and single-family residential uses to the east; the terminus of Orange Grove Place and single-family residential uses located across Orange Grove Place to the south; and single-family residential uses to the west.

1.2 Project Description

The Project proposes to remove the existing office building and parking and develop a mixed-use project with underground parking. The proposed Project would combine the three parcels into a single 70,116 square-foot parcel, retaining the existing split of zoning (MSSP and RM), referenced herein as Zone 1: MSSP and Zone 2: RM.

Within Zone 1, the Project proposes a 79,860 square-foot structure with 57 residential units and 6,100 square-feet of commercial uses; refer to **Exhibit 3: Conceptual Site Plan**. The commercial uses would be

located on the ground level fronting El Centro Street and are anticipated to be a mixture of restaurant and retail uses. The residential uses would be comprised of studios, lofts, flats, and townhomes within a maximum of three stories. On-site amenities, including a lobby, gym and community rooms would be located within the ground floor of the mixed-use structure. Within Zone 2, the Project proposes three, two-story bungalow cottages with two to four bedrooms with a maximum height of 30 feet.

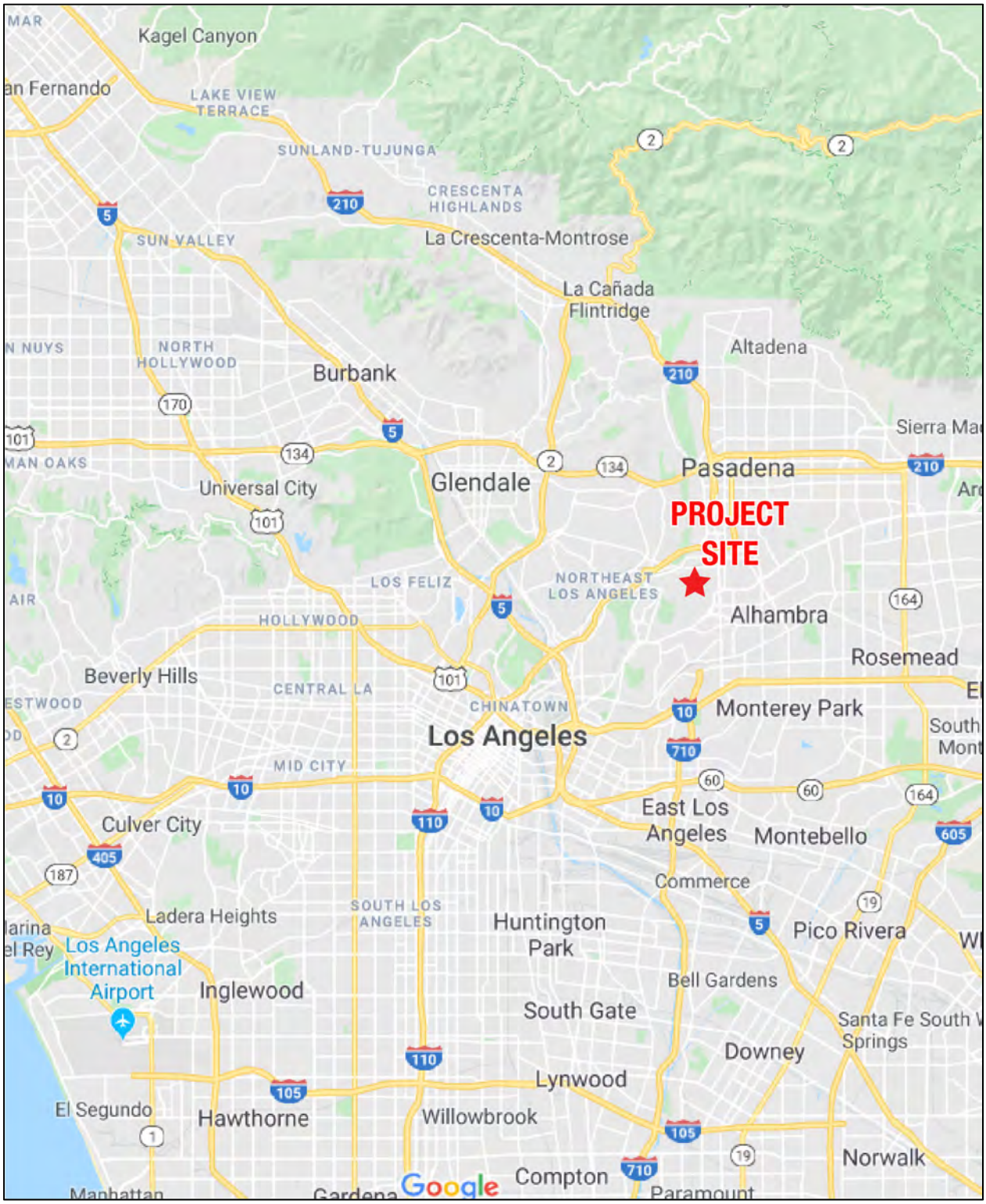
Parking for the non-residential (65 spaces) and the residential (112 spaces) uses would be provided within two levels accessed from El Centro Street along the western Project boundary. Residential parking for Zone 1 would be gated and located within Basement Plan 1. Residential parking for Zone 2 would be gated and located within Basement Plan 2 under the cottage bungalows. The remainder of the parking spaces, including five ADA spaces within Basement Plan 2, would be available for visitors accessing the non-residential uses. Six bicycle parking spaces would also be provided.

The Project also proposes open space within six patios distributed throughout the development. Extensive landscaping would be provided along the site's perimeter and throughout the site. Several existing trees, including one street tree and one protected tree, would be removed. The Project proposes to protect in place the remaining street trees and protected trees and provide 95 replacement trees.

Project Construction and Phasing

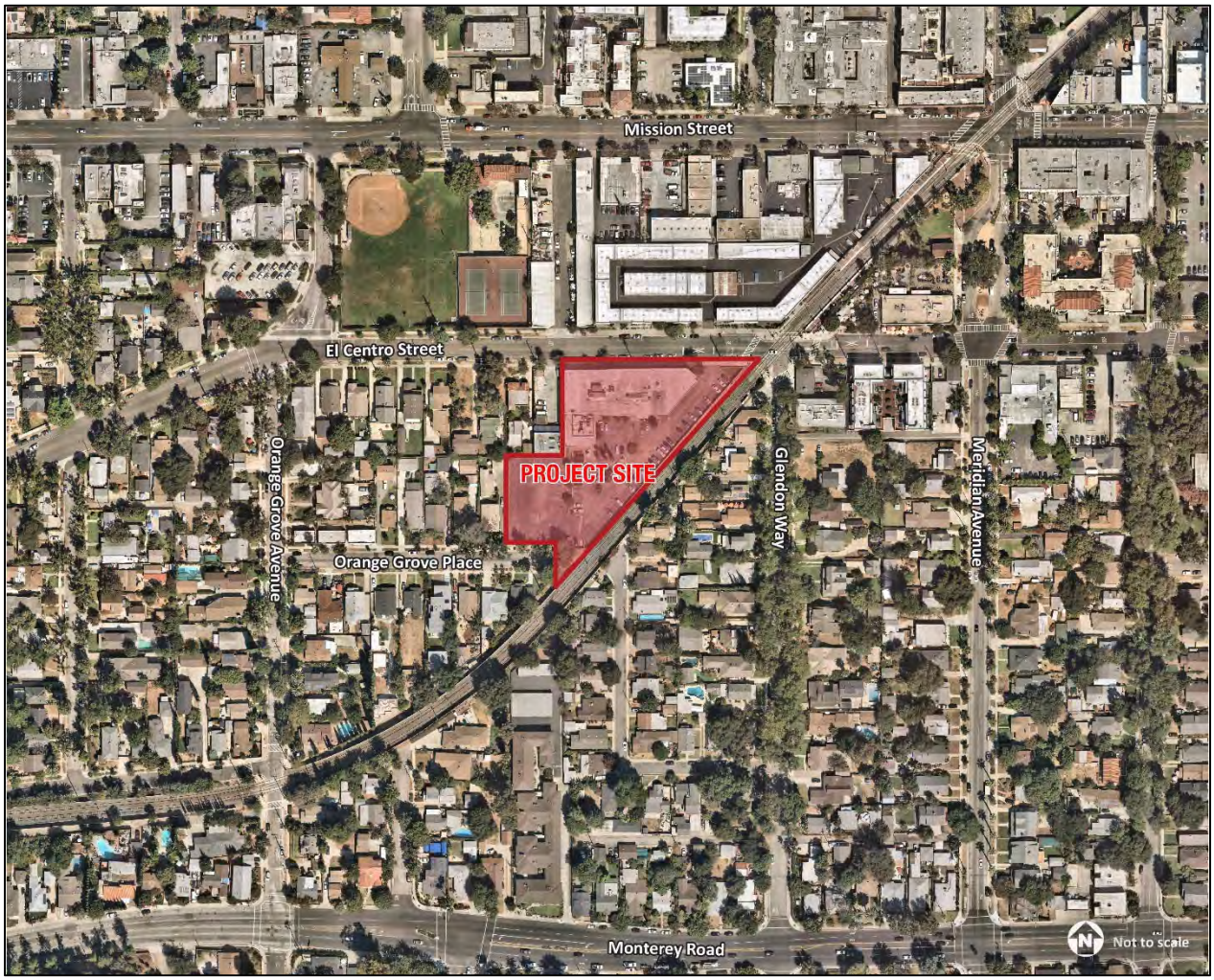
The Project would be developed in one phase. It is assumed that Project construction would occur over approximately 12 months beginning in the summer of 2021. For analysis purposes, it is anticipated that the Project would open in the fall of 2022.

Exhibit 1: Regional Vicinity



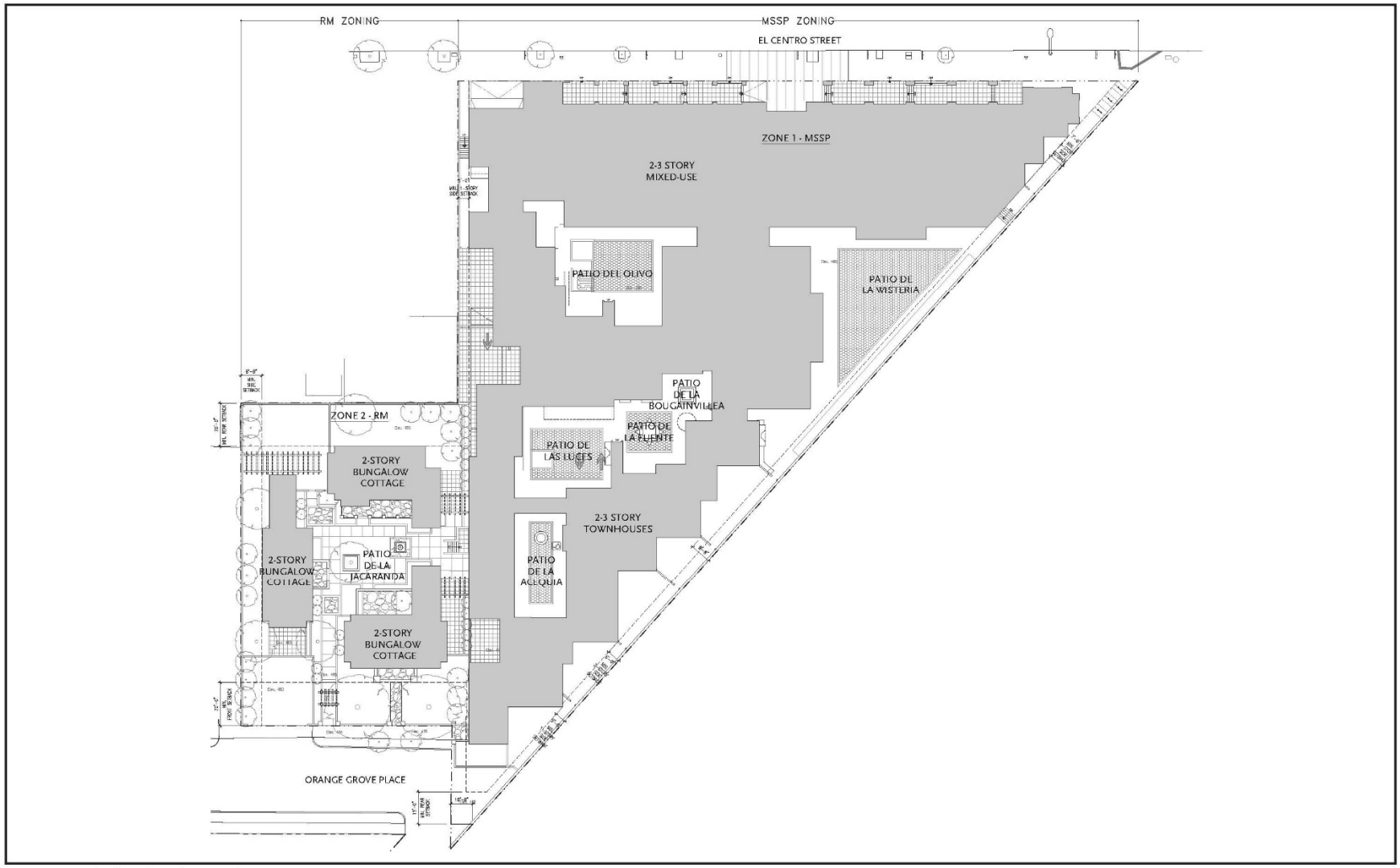
Source: Google Maps, 2019.

Exhibit 2: Site Vicinity



Source: Nearmap, 2019.

Exhibit 3: Conceptual Site Plan



Source: Moule & Polyzoides, 2019

2 ENVIRONMENTAL SETTING

2.1 Greenhouse Gases and Climate Change

Certain gases in the earth's atmosphere classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere.[1] **Table 1: Description of Greenhouse Gases** describes the primary GHGs attributed to global climate change, including their physical properties.

[1] Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis*, *Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, https://www.ipcc.ch/report/ar5/wg1/.

Table 1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	CO_2 is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO_2 is variable because it is readily exchanged in the atmosphere. CO_2 is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N_2O)	N_2O is largely attributable to agricultural practices and soil management. Primary human-related sources of N_2O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N_2O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years. The Global Warming Potential of N_2O is 298.
Methane (CH_4)	CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, about 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH_4 include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH_4 is about 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF_6)	SF_6 is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF_6 is 23,900.
Hydrochlorofluorocarbons (HCFCs)	HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF_3)	NF_3 was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.

Source: Compiled from U.S. EPA, *Overview of Greenhouse Gases*, November 6, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018; Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007; National Research Council, Advancing the Science of Climate Change, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.

3 REGULATORY SETTING

3.1 Federal

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. Environmental Protection Agency (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2

in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

In 2018, the President and the EPA have stated their intent to halt various federal regulatory activities to reduce GHG emission, including the phase two program. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and potential responses from California and other states are speculative at this time.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan (CPP). These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: one fossil-fuel-fired electric utility steam-generating unit and two stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the CPP pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the EPA Administrator to review the CPP to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783. Presidential Executive Order 13783, *Promoting Energy Independence and Economic Growth* issued on March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of CO_2, N_2O, and CH_4.

3.2 State of California

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO_2 equivalents (CO_2e) in the world and produced 459 million gross metric tons of CO_2e in 2013. In the State, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark Assembly Bill (AB) 32, *California Global Warming Solutions Act of 2006*, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan. CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual").[2] The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the State's Climate Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program.[3] Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.

[2] CARB defines business-as-usual (BAU) in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[3] The Climate Action Team, led by the secretary of the California Environmental Protection Agency, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State's Climate Adaptation Strategy.

- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated in light of current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO_2e ($MMTCO_2e$) to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In 2016, the Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017 CARB adopted a second update to the Scoping Plan.[4] The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and, support the Clean Power Plan and other Federal actions.

Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit). Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to

[4] California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, accessed February 3, 2020.

be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008). Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards). AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards). SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO_2 per megawatt-hour.

SB 1078 and SBX1-2 (Renewable Electricity Standards). SB 1078 required California to generate 20 percent of its electricity from renewable energy by 2017. This goal was accelerated with SB 107, which changed the due date to 2010 instead of 2017. On November 17, 2008, Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2, which codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015). Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 25 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

AB 398 (Market-Based Compliance Mechanisms). Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air contaminants and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

SB 150 (Regional Transportation Plans). Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases). Signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

Executive Order S-3-05. Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07. Issued on January 18, 2007, Executive Order S 01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009.

Executive Order S-13-08. Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08. Issued on November 17, 2008, Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the Renewable Electricity Standard on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09. Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15. Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2e (MMTCO2e). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

Executive Order B-55-18. Issued on September 10, 2018, Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The executive order requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The executive order also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations. The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and went into effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code. The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards will continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings.

3.3 Regional

South Coast Air Quality Management District Thresholds

The South Coast Air Quality Management District (SCAQMD) formed a GHG California Environmental Quality Act (CEQA) Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. As of the last Working Group meeting (Meeting 15) held in September 2010, the SCAQMD is proposing to adopt a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency.

With the tiered approach, the Project is compared with the requirements of each tier sequentially and would not result in a significant impact if it complies with any tier. Tier 1 excludes projects that are specifically exempt from SB 97 from resulting in a significant impact. Tier 2 excludes projects that are consistent with a GHG reduction plan that has a certified final CEQA document and complies with AB 32 GHG reduction goals. Tier 3 excludes projects with annual emissions lower than a screening threshold. The SCAQMD is proposing a screening threshold of 10,000 metric tons of CO_2e ($MTCO_2e$) per year for industrial projects and 3,000 $MTCO_2e$ for non-industrial projects. SCAQMD concluded that projects with emissions less than the screening threshold would not result in a significant cumulative impact.

Tier 4 consists of three decision tree options. Under the Tier 4 first option, SCAQMD initially outlined that a project would be excluded if design features and/or mitigation measures resulted in emissions 30 percent lower than business as usual emissions. However, the Working Group did not provide a recommendation for this approach. The Working Group folded the Tier 4 second option into the third option. Under the Tier 4 third option, the project would be excluded if it was below an efficiency-based threshold of 4.8 $MTCO_2e$ per service population per year. Tier 5 would exclude projects that implement

offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level.

GHG efficiency metrics are utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a service population basis (the sum of the number of jobs and the number of residents provided by a project) such that the project would allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020 and 2035). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal of the State, by the estimated population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use).

As the Project involves the removal of existing office buildings and parking, and the construction of a mixed-use project with underground parking, the 3,000 $MTCO_2e$ per year non-industrial threshold has been selected as the significance threshold, as it is most applicable to the proposed Project.

Southern California Association of Governments

On April 7, 2016, the Southern California Association of Governments (SCAG) Regional Council adopted the *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy* (RTP/SCS). The RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The strategy was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The RTP/SCS is a long-range vision plan that balances future mobility and housing needs with economic, environmental, and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions.

3.4 Local

City of South Pasadena General Plan

The *City of South Pasadena General Plan*[5] (SPGP, adopted October 1998) is the City's blueprint for development. Project-relevant policies specific to GHG emissions are mentioned in this section. Where inconsistencies exist, if any, they are addressed in the respective impact analysis below. SPGP policies that address GHG emissions impacts include the following:

Goal 18.3: Increase the efficiency of energy use. Conserve energy-use and improve efficiency by the continuing refinement of building regulations and by encouraging the use of new technology.

[5] The City of South Pasadena is currently updating its General Plan and released the draft South Pasadena General Plan Update on November 4, 2019. However, since the proposed South Pasadena General Plan Update has not been adopted at the time this Greenhouse Gas Emissions Assessment was prepared, the relevant policies listed herein are from the SPGP.

Mission Street Specific Plan

The Mission Street Specific Plan was developed to address the impacts of the Metro Gold Line and to implement the Community Vision of Mission Street as South Pasadena's pedestrian oriented historic shopping street. The Plan includes detailed regulatory mechanisms tailored to the particular needs of the Mission Street area. The Mission Street Specific Plan does not include any relevant policies that address GHG emissions.

City of South Pasadena Green Action Plan

The City of South Pasadena Green Action Plan (Green Plan) was a collaborative effort between City staff, the Natural Resources and Environmental Commission (NREC), and South Pasadena residents and businesses to strengthen the City's commitment to sustainability. The short-term initiatives in the Green Action Plan are intended to act as stepping stones for the City's Climate Action Plan (CAP). The Green Plan, includes five overarching goals to address plastic reduction, water conservation, organics diversion, urban heat island mitigation, and planning for the future. Each goal includes strategies ("plays") and specific actions ("moves") for achieving these objectives.

City of South Pasadena Climate Action Plan

The City of South Pasadena is currently developing a CAP to reduce its greenhouse gas emissions in accordance with statewide targets. The CAP intends to facilitate the reduction of GHG emissions throughout South Pasadena through implementation of Southern California Association of Governments' (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future (RTP/SCS). The City's CAP would set a baseline for past and current GHG emissions, included forecasts of future emissions, and established targets to help California reduce future emissions. In the long term, the CAP would also help achieve multiple community goals, such as lowering energy costs, reducing air pollution, supporting local economic development, and improving public health and quality of life. The anticipated completion date of the South Pasadena CAP is fall 2020.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 Thresholds and Significance Criteria

Addressing GHG emission generation impacts requires an agency to determine what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions will have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions.[6]

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

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

South Coast Air Quality Management District Thresholds

The SCAQMD has not announced when staff is expecting to present a finalized version of its GHG thresholds to the governing board. On September 28, 2010, the SCAQMD recommended a screening level numeric threshold of 3,000 metric tons per year of CO_2e for non-industrial land uses. This threshold was developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. This working group was formed to assist SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research, CARB, the Attorney General's Office, a variety of city and county planning departments in the South Coast Air Basin (SCAB), various utilities such as sanitation and power companies throughout the SCAB, industry groups, and environmental and professional organizations. The numeric "bright line" was developed to be consistent with CEQA requirements for developing significance thresholds, is supported by substantial evidence, and provides guidance to CEQA practitioners in determining significance of GHG emissions from a project.

4.2 Methodology

The Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Details of the modeling assumptions and emission factors are provided in **Appendix A: Greenhouse Gas Emissions Data**. For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. GHG emissions during construction were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The Project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker

[6] California Code of Regulations, Section 15064.4a.

vehicles. The Project's operations-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 Greenhouse Gas Emissions

Threshold 5.1 Would the Project generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment?

Short-Term Construction Greenhouse Gas Emissions

The proposed Project would result in direct emissions of GHGs from construction. Construction of the proposed Project is estimated to generate GHG emissions. Construction emissions were quantified for demolition, site preparation, grading, building construction, paving, and the application of architectural coatings. GHG emissions produced during the construction phase of the Project are primarily from construction vehicle exhaust. The approximate quantity of daily GHG emissions generated by construction equipment utilized to build the proposed Project is depicted in **Table 2: Construction-Related Greenhouse Gas Emissions**.

Table 2: Construction-Related Greenhouse Gas Emissions

Category	$MTCO_2e$
2021 Construction Emissions	395
2022 Construction Emissions	392
Total Construction Emissions	787
30- Year Amortized Construction	26

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

As shown in **Table 2**, Project construction would result in the generation of approximately 787 $MTCO_2e$ over the course of construction. Construction GHG emissions are typically summed and amortized over the lifetime of the Project (assumed to be 30 years), then added to the operational emissions.[7] The amortized Project emissions would be 13 $MTCO_2e$ per year. Once construction is complete, the generation of these GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions occur over the life of the proposed Project. GHG emissions would result from direct emissions such as Project generated vehicular traffic, on-site combustion of natural gas, operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power, the energy required to convey water to, and wastewater from the Project site, the emissions associated with solid waste generated from the Project site, and any fugitive refrigerants from air conditioning or refrigerators. Total GHG emissions associated with proposed Project are summarized in **Table 3: Project Greenhouse Gas Emissions**. As shown in **Table 3**, the Project would generate approximately 1,335 $MTCO_2e$ annually from both

[7] The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13,* August 26, 2009).

construction and operations and the proposed Project would not exceed the SCAQMD GHG threshold of 3,000 $MTCO_2e$ per year. Therefore, Project-related GHG emissions would be less than significant and no mitigation measures are required.

Table 3: Project Greenhouse Gas Emissions

Emissions Source	$MTCO_2e$ per Year
Construction Amortized Over 30 Years	26
Area Source	13
Energy	277
Mobile	978
Waste	16
Water and Wastewater	25
Total	**1,335**
Bright Line Threshold	*3,000*
Exceeds SCAQMD Threshold?	**No**

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

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.2 Greenhouse Gas Reduction Plan Compliance

Threshold 5.2 Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions?

There are currently no adopted local or regional GHG reduction plans applicable to the proposed Project.[8] As such, the most applicable GHG reduction plans to the proposed Project include the SCAG RTP/SCS and CARB 2017 Scoping Plan discussed below.

2016-2040 RTP/SCS Consistency

On April 7, 2016, SCAG adopted the 2016-2040 RTP/SCS. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. SCAG's RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 as well as an overall GHG target for the Project region consistent with

[8] The City of South Pasadena is currently developing a CAP to reduce its greenhouse gas emissions in accordance with statewide targets but has not been adopted yet.

both the target date of AB 32 and the post-2020 GHG reduction goals of Executive Orders 5-03-05 and B-30-15.

The plan accounts for operations and maintenance costs to ensure reliability, longevity, and cost effectiveness. The RTP/SCS is also supported by a combination of transportation and land use strategies that help the region achieve the State's GHG emissions reduction goals and Federal Clean Air Act (FCAA) requirements, preserve open space areas, improve public health and roadway safety, support our vital goods movement industry, and utilize resources more efficiently. GHG emissions resulting from development-related mobile sources are the most potent source of emissions, and therefore Project comparison to the RTP/SCS is an appropriate indicator of whether the Project would inhibit the post-2020 GHG reduction goals promulgated by the State. The Project's consistency with the RTP/SCS goals is analyzed in detail in **Table 4: Regional Transportation Plan/Sustainable Communities Strategy Consistency**.

Table 4: Regional Transportation Plan/Sustainable Communities Strategy Consistency

SCAG Goals		**Compliance**	
GOAL 1:	Align the plan investments and policies with improving regional economic development and competitiveness.	N/A:	This is not a project-specific policy and is therefore not applicable.
GOAL 2:	Maximize mobility and accessibility for all people and goods in the region.	Consistent:	Although this Project is not a transportation improvement project, the Project is located near existing transit routes on El Centro Street and is adjacent to the Metro Gold Line South Pasadena Station.
GOAL 3:	Ensure travel safety and reliability for all people and goods in the region.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 4:	Preserve and ensure a sustainable regional transportation system.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 5:	Maximize the productivity of our transportation system.	N/A:	This is not a transportation improvement project and is therefore not applicable.
GOAL 6:	Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g. bicycling and walking).	N/A:	This is not a project-specific policy. However, the Project is required to comply with CALGreen provisions and is located in an infill area near existing development.
GOAL 7:	Actively encourage and create incentives for energy efficiency, where possible.	N/A:	This is not a project-specific policy and is therefore not applicable.
GOAL 8:	Encourage land use and growth patterns that facilitate transit as well as non-motorized transportation.	Consistent:	The Project is located within a relatively short walking distance to local bus routes.
GOAL 9:	Maximize security of transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	N/A:	This is not a transportation improvement project and is therefore not applicable.

Source: Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.

As shown in **Table 4**, the Project would be consistent with the stated goals of the RTP/SCS. Therefore, the Project would not result in any significant impacts or interfere with SCAG's ability to achieve the region's post-2020 mobile source GHG reduction targets.

California Air Resources Board Scoping Plan Consistency

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (CO2, CH4, NOX, HFCs, PFCs, and SF6) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, CARB adopted the Climate Change Scoping Plan (CCSP) in 2008, which outlines actions recommended to obtain that goal. The CCSP provides a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program. As shown in **Table 5: Project Consistency with Applicable CARB Scoping Plan Measures**, the Project is consistent with most of the strategies, while others are not applicable to the Project.

Table 5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency Analysis
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on GHG Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the Project would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent.** The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with the Project would comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the Project would utilize low carbon transportation fuels as required under this measure.

Table 5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency Analysis
	Regional Transportation-Related GHG Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The Project would provide development in the region that is consistent with the growth projections in the RTP/SCS.
	Goods Movement	Goods Movement Action Plan January 2007	**Not applicable**. The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer GHG Regulation	**Consistent**. This measure applies to medium and heavy-duty vehicles that operate in the State. The Project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the Project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The Project would not conflict with implementation of this measure. The Project would comply with the latest energy efficiency standards.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. The Project would obtain electricity from the electric utility, Southern California Edison (SCE). SCE obtained 32 percent of its power supply from renewable sources in 2018. Therefore, the utility would provide power when needed on site that is composed of a greater percentage of renewable sources.
	Million Solar Roofs Program	SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
		Tax Incentive Program	**Consistent.** This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The Project would comply with the CalGreen standards, which requires a 20 percent reduction in indoor water use. The Project would also comply with the City's water conservation and efficiency standards.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The State is to increase the use of green building practices. The Project would implement required green building strategies through existing regulation that requires the Project to comply with

Table 5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency Analysis
			various CalGreen requirements.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	**Not applicable.** The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 $MTCO_2e$ of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. The Project consists of a mixed-use development and does not contain industrial uses. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards AB 341 Statewide 75 Percent Diversion Goal	**Consistent.** The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CALGreen code. The City has consistently achieved its State recycling mandates.
Forests	Sustainable Forests	Cap and Trade Offset Projects	**Not applicable.** The Project is located within an urban area and does not contain forested lands.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The Project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The Project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the Project.

Source: California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, November 2017 and CARB, *Climate Change Scoping Plan*, December 2008.

The 2017 Scoping Plan identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the first update to the CCSP in 2013. Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets. As such, impacts related to consistency with the Scoping Plan would be less than significant.

The Project is estimated to emit approximately 1,335 $MTCO_2e$ per year directly from on-site activities and indirectly from off-site motor vehicles, see **Table 3**. The GHG emissions caused by long-term operation of the Project would be less than significant.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the proposed Project would benefit from the implementation of current and potential future regulations (e.g., improvements in vehicle emissions, SB 100/renewable electricity portfolio improvements, etc.) enacted to meet an 80 percent reduction below 1990 levels by 2050.

The Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for reducing the emissions of GHGs because the Project would generate low levels of GHGs, and would not impede implementation of the Scoping Plan, or conflict with the policies of the Scoping Plan. Therefore, the impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.3 Cumulative Setting, Impacts, and Mitigation Measures

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have much longer atmospheric lifetimes of 1 year to several thousand years that allow them to be dispersed around the globe.

Cumulative Impacts and Mitigation Measures

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of Project-related GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the proposed Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As discussed above, the proposed Project would not conflict with any GHG reduction plans including the CARB Scoping Plan. Therefore, the Project's cumulative contribution of GHG emissions would be less than significant and the Project's cumulative GHG impacts would also be less than cumulatively considerable.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* 2017.
2. California Air Resources Board, *Climate Change Scoping Plan*, December 2008.
3. Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007.
4. Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013.
5. National Research Council, *Advancing the Science of Climate Change*, 2010.
6. City of South Pasadena, *Mission Street Specific Plan*, April 1996.
7. City of South Pasadena, *Proposed 2020 General Plan update*, 2019.
8. City of South Pasadena, *Green Action Plan,* 2019.
9. Ganddini Group, Inc*., Seven Patios Mixed-Use Residential/Commercial Retail Project Traffic Impact Analysis,* February 2020.
10. State of California, *Code of Regulations Section 15065.5a*, 2018.
11. Southern California Association of Governments, *Regional Transportation Plan/Sustainable Communities Strategy*, 2016.
12. South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, 2009.
13. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018.
14. U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, 2010.
15. U.S. EPA, *Overview of Greenhouse Gases*, 2018.

Appendix A

Greenhouse Gas Emissions Data

Seven Patios Mixed Use

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fast Food Restaurant w/o Drive Thru	3.05	1000sqft	0.07	3,050.00	0
Strip Mall	3.05	1000sqft	0.07	3,050.00	0
Apartments Low Rise	57.00	Dwelling Unit	3.56	57,000.00	163
Enclosed Parking with Elevator	177.00	Space	1.59	70,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	546.44	**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 2017 CRSR. The report provides intensity factor of CO2e, the CO2 intensity factor is calculated as 549-25*0.029.208*0.00617=546.4263 to avoid double counting

Land Use - Per project information

Off-road Equipment - Additional excavators for underground parking

Grading - 48,720 CY of export

Demolition - Demolition of 1,200 tons of debris (parking lot) and 36,000 SF office building

Vehicle Trips - Per Project Trip Generation Table

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Per SCAQMD rules and regulations

Area Mitigation -

Energy Mitigation - Exceed Title 24 by 15%-25% for 2019 standards

Water Mitigation -

Waste Mitigation -

Construction Phase - Anticipated construction schedule

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	9/27/2022	11/8/2022
tblConstructionPhase	PhaseEndDate	11/9/2021	11/23/2021
tblConstructionPhase	PhaseEndDate	10/25/2022	12/21/2021
tblConstructionPhase	PhaseStartDate	11/10/2021	12/22/2021
tblConstructionPhase	PhaseStartDate	9/28/2022	11/24/2021
tblGrading	AcresOfGrading	15.00	10.00
tblGrading	MaterialExported	0.00	48,720.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	546.44
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblVehicleTrips	ST_TR	7.16	7.32
tblVehicleTrips	ST_TR	696.00	112.18
tblVehicleTrips	ST_TR	42.04	37.75
tblVehicleTrips	SU_TR	6.07	7.32
tblVehicleTrips	SU_TR	500.00	112.18
tblVehicleTrips	SU_TR	20.43	37.75
tblVehicleTrips	WD_TR	6.59	7.32

tblVehicleTrips	WD_TR	716.00	112.18
tblVehicleTrips	WD_TR	44.32	37.75

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					
2021	0.1469	2.0764	1.1614	4.1800e-003	0.2846	0.0612	0.3458	0.1228	0.0566	0.1794	0.0000	393.2562	393.2562	0.0602	0.0000	394.7605
2022	0.4473	1.9701	2.1754	4.4200e-003	0.1037	0.0917	0.1954	0.0279	0.0863	0.1142	0.0000	390.0442	390.0442	0.0670	0.0000	391.7200
Maximum	**0.4473**	**2.0764**	**2.1754**	**4.4200e-003**	**0.2846**	**0.0917**	**0.3458**	**0.1228**	**0.0863**	**0.1794**	**0.0000**	**393.2562**	**393.2562**	**0.0670**	**0.0000**	**394.7605**

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					
2021	0.1469	2.0764	1.1614	4.1800e-003	0.1435	0.0612	0.2046	0.0560	0.0566	0.1126	0.0000	393.2560	393.2560	0.0602	0.0000	394.7603
2022	0.4473	1.9701	2.1754	4.4200e-003	0.0985	0.0917	0.1902	0.0266	0.0863	0.1129	0.0000	390.0439	390.0439	0.0670	0.0000	391.7197
Maximum	**0.4473**	**2.0764**	**2.1754**	**4.4200e-003**	**0.1435**	**0.0917**	**0.2046**	**0.0560**	**0.0863**	**0.1129**	**0.0000**	**393.2560**	**393.2560**	**0.0670**	**0.0000**	**394.7603**

	ROG	NOx	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**	**37.70**	**0.00**	**27.05**	**45.21**	**0.00**	**23.20**	**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	**9-1-2021**	**11-30-2021**	2.0119	2.0119
2	**12-1-2021**	**2-28-2022**	0.5996	0.5996
3	**3-1-2022**	**5-31-2022**	0.6452	0.6452
4	**6-1-2022**	**8-31-2022**	0.6446	0.6446
5	**9-1-2022**	**9-30-2022**	0.2102	0.2102
		Highest	2.0119	2.0119

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	0.4589	0.0216	0.9531	9.6000e-004		0.0577	0.0577		0.0577	0.0577	6.0545	12.5994	18.6539	0.0190	4.1000e-004	19.2512
Energy	8.8400e-003	0.0777	0.0475	4.8000e-004		6.1100e-003	6.1100e-003		6.1100e-003	6.1100e-003	0.0000	293.8442	293.8442	0.0126	3.8700e-003	295.3132
Mobile	0.2412	1.2232	2.9997	0.0106	0.8595	8.9200e-003	0.8684	0.2304	8.3200e-003	0.2387	0.0000	976.7602	976.7602	0.0518	0.0000	978.0549
Waste						0.0000	0.0000		0.0000	0.0000	13.1031	0.0000	13.1031	0.7744	0.0000	32.4623
Water						0.0000	0.0000		0.0000	0.0000	1.5436	22.6942	24.2378	0.1598	3.9900e-003	29.4212
Total	**0.7089**	**1.3225**	**4.0002**	**0.0120**	**0.8595**	**0.0727**	**0.9322**	**0.2304**	**0.0721**	**0.3025**	**20.7012**	**1,305.8980**	**1,326.5992**	**1.0175**	**8.2700e-003**	**1,354.5028**

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	0.2735	0.0175	0.5953	1.0000e-004		4.1200e-003	4.1200e-003		4.1200e-003	4.1200e-003	0.0000	13.2838	13.2838	1.1700e-003	2.3000e-004	13.3804
Energy	8.2800e-003	0.0728	0.0450	4.5000e-004		5.7200e-003	5.7200e-003		5.7200e-003	5.7200e-003	0.0000	275.9863	275.9863	0.0119	3.6300e-003	277.3655
Mobile	0.2412	1.2232	2.9997	0.0106	0.8595	8.9200e-003	0.8684	0.2304	8.3200e-003	0.2387	0.0000	976.7602	976.7602	0.0518	0.0000	978.0549
Waste						0.0000	0.0000		0.0000	0.0000	6.5515	0.0000	6.5515	0.3872	0.0000	16.2312
Water						0.0000	0.0000		0.0000	0.0000	1.2349	19.5536	20.7885	0.1279	3.2100e-003	24.9417
Total	**0.5229**	**1.3134**	**3.6399**	**0.0111**	**0.8595**	**0.0188**	**0.8782**	**0.2304**	**0.0182**	**0.2485**	**7.7864**	**1,285.5839**	**1,293.3703**	**0.5799**	**7.0700e-003**	**1,309.9737**

	ROG	NOx	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	**26.24**	**0.68**	**9.01**	**7.41**	**0.00**	**74.20**	**5.79**	**0.00**	**74.82**	**17.84**	**62.39**	**1.56**	**2.50**	**43.01**	**14.51**	**3.29**

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	9/1/2021	9/28/2021	5	20	
2	Site Preparation	Site Preparation	9/29/2021	10/12/2021	5	10	
3	Grading	Grading	10/13/2021	11/23/2021	5	30	
4	Building Construction	Building Construction	12/22/2021	11/8/2022	5	230	
5	Paving	Paving	11/24/2021	12/21/2021	5	20	
6	Architectural Coating	Architectural Coating	10/26/2022	11/22/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 1.59

Residential Indoor: 115,425; Residential Outdoor: 38,475; Non-Residential Indoor: 9,150; Non-Residential Outdoor: 3,050; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	4	8.00	158	0.38
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
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
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
Demolition	6	15.00	0.00	283.00	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	9	15.00	0.00	6,090.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	73.00	19.00	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

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 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					
Fugitive Dust					0.0307	0.0000	0.0307	4.6400e-003	0.0000	4.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0307**	**0.0155**	**0.0462**	**4.6400e-003**	**0.0144**	**0.0191**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

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	1.1900e-003	0.0392	9.1300e-003	1.1000e-004	2.4300e-003	1.2000e-004	2.5500e-003	6.7000e-004	1.1000e-004	7.8000e-004	0.0000	10.7865	10.7865	7.5000e-004	0.0000	10.8052
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	6.5000e-004	5.0000e-004	5.6700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4834	1.4834	4.0000e-005	0.0000	1.4845
Total	**1.8400e-003**	**0.0397**	**0.0148**	**1.3000e-004**	**4.0700e-003**	**1.3000e-004**	**4.2100e-003**	**1.1100e-003**	**1.2000e-004**	**1.2300e-003**	**0.0000**	**12.2699**	**12.2699**	**7.9000e-004**	**0.0000**	**12.2897**

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					0.0114	0.0000	0.0114	1.7200e-003	0.0000	1.7200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0114**	**0.0155**	**0.0269**	**1.7200e-003**	**0.0144**	**0.0161**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

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	1.1900e-003	0.0392	9.1300e-003	1.1000e-004	2.3200e-003	1.2000e-004	2.4400e-003	6.4000e-004	1.1000e-004	7.5000e-004	0.0000	10.7865	10.7865	7.5000e-004	0.0000	10.8052
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	6.5000e-004	5.0000e-004	5.6700e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4834	1.4834	4.0000e-005	0.0000	1.4845
Total	**1.8400e-003**	**0.0397**	**0.0148**	**1.3000e-004**	**3.8800e-003**	**1.3000e-004**	**4.0100e-003**	**1.0600e-003**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**12.2699**	**12.2699**	**7.9000e-004**	**0.0000**	**12.2897**

3.3 Site Preparation - 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					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7179	16.7179	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0903**	**0.0102**	**0.1006**	**0.0497**	**9.4000e-003**	**0.0591**	**0.0000**	**16.7179**	**16.7179**	**5.4100e-003**	**0.0000**	**16.8530**

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	3.9000e-004	3.0000e-004	3.4000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8900	0.8900	3.0000e-005	0.0000	0.8907
Total	**3.9000e-004**	**3.0000e-004**	**3.4000e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8900**	**0.8900**	**3.0000e-005**	**0.0000**	**0.8907**

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					0.0335	0.0000	0.0335	0.0184	0.0000	0.0184	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0194	0.2025	0.1058	1.9000e-004		0.0102	0.0102		9.4000e-003	9.4000e-003	0.0000	16.7178	16.7178	5.4100e-003	0.0000	16.8530
Total	**0.0194**	**0.2025**	**0.1058**	**1.9000e-004**	**0.0335**	**0.0102**	**0.0437**	**0.0184**	**9.4000e-003**	**0.0278**	**0.0000**	**16.7178**	**16.7178**	**5.4100e-003**	**0.0000**	**16.8530**

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	3.9000e-004	3.0000e-004	3.4000e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8900	0.8900	3.0000e-005	0.0000	0.8907
Total	**3.9000e-004**	**3.0000e-004**	**3.4000e-003**	**1.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.4000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.8900**	**0.8900**	**3.0000e-005**	**0.0000**	**0.8907**

3.4 Grading - 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					
Fugitive Dust					0.0984	0.0000	0.0984	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0447	0.4680	0.3851	6.8000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	59.5000	59.5000	0.0192	0.0000	59.9811
Total	**0.0447**	**0.4680**	**0.3851**	**6.8000e-004**	**0.0984**	**0.0221**	**0.1205**	**0.0506**	**0.0203**	**0.0710**	**0.0000**	**59.5000**	**59.5000**	**0.0192**	**0.0000**	**59.9811**

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	0.0257	0.8429	0.1965	2.3600e-003	0.0523	2.5200e-003	0.0549	0.0144	2.4100e-003	0.0168	0.0000	232.1192	232.1192	0.0161	0.0000	232.5220
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	9.7000e-004	7.5000e-004	8.5100e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2251	2.2251	7.0000e-005	0.0000	2.2267
Total	**0.0266**	**0.8437**	**0.2051**	**2.3800e-003**	**0.0548**	**2.5400e-003**	**0.0574**	**0.0150**	**2.4300e-003**	**0.0175**	**0.0000**	**234.3443**	**234.3443**	**0.0162**	**0.0000**	**234.7487**

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					0.0365	0.0000	0.0365	0.0188	0.0000	0.0188	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0447	0.4680	0.3851	6.8000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	59.5000	59.5000	0.0192	0.0000	59.9811
Total	**0.0447**	**0.4680**	**0.3851**	**6.8000e-004**	**0.0365**	**0.0221**	**0.0586**	**0.0188**	**0.0203**	**0.0391**	**0.0000**	**59.5000**	**59.5000**	**0.0192**	**0.0000**	**59.9811**

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	0.0257	0.8429	0.1965	2.3600e-003	0.0500	2.5200e-003	0.0525	0.0138	2.4100e-003	0.0162	0.0000	232.1192	232.1192	0.0161	0.0000	232.5220
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	9.7000e-004	7.5000e-004	8.5100e-003	2.0000e-005	2.3400e-003	2.0000e-005	2.3600e-003	6.2000e-004	2.0000e-005	6.4000e-004	0.0000	2.2251	2.2251	7.0000e-005	0.0000	2.2267
Total	**0.0266**	**0.8437**	**0.2051**	**2.3800e-003**	**0.0523**	**2.5400e-003**	**0.0549**	**0.0144**	**2.4300e-003**	**0.0169**	**0.0000**	**234.3443**	**234.3443**	**0.0162**	**0.0000**	**234.7487**

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	7.6000e-003	0.0697	0.0663	1.1000e-004		3.8300e-003	3.8300e-003		3.6100e-003	3.6100e-003	0.0000	9.2655	9.2655	2.2400e-003	0.0000	9.3214
Total	**7.6000e-003**	**0.0697**	**0.0663**	**1.1000e-004**		**3.8300e-003**	**3.8300e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**9.2655**	**9.2655**	**2.2400e-003**	**0.0000**	**9.3214**

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	2.4000e-004	7.5000e-003	2.0300e-003	2.0000e-005	4.8000e-004	2.0000e-005	4.9000e-004	1.4000e-004	1.0000e-005	1.5000e-004	0.0000	1.8734	1.8734	1.1000e-004	0.0000	1.8763
Worker	1.2600e-003	9.8000e-004	0.0110	3.0000e-005	3.2000e-003	3.0000e-005	3.2300e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.8876	2.8876	8.0000e-005	0.0000	2.8898
Total	**1.5000e-003**	**8.4800e-003**	**0.0131**	**5.0000e-005**	**3.6800e-003**	**5.0000e-005**	**3.7200e-003**	**9.9000e-004**	**3.0000e-005**	**1.0200e-003**	**0.0000**	**4.7610**	**4.7610**	**1.9000e-004**	**0.0000**	**4.7660**

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	7.6000e-003	0.0697	0.0663	1.1000e-004		3.8300e-003	3.8300e-003		3.6100e-003	3.6100e-003	0.0000	9.2655	9.2655	2.2400e-003	0.0000	9.3214
Total	**7.6000e-003**	**0.0697**	**0.0663**	**1.1000e-004**		**3.8300e-003**	**3.8300e-003**		**3.6100e-003**	**3.6100e-003**	**0.0000**	**9.2655**	**9.2655**	**2.2400e-003**	**0.0000**	**9.3214**

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	2.4000e-004	7.5000e-003	2.0300e-003	2.0000e-005	4.6000e-004	2.0000e-005	4.7000e-004	1.3000e-004	1.0000e-005	1.5000e-004	0.0000	1.8734	1.8734	1.1000e-004	0.0000	1.8763
Worker	1.2600e-003	9.8000e-004	0.0110	3.0000e-005	3.0300e-003	3.0000e-005	3.0600e-003	8.1000e-004	2.0000e-005	8.3000e-004	0.0000	2.8876	2.8876	8.0000e-005	0.0000	2.8898
Total	**1.5000e-003**	**8.4800e-003**	**0.0131**	**5.0000e-005**	**3.4900e-003**	**5.0000e-005**	**3.5300e-003**	**9.4000e-004**	**3.0000e-005**	**9.8000e-004**	**0.0000**	**4.7610**	**4.7610**	**1.9000e-004**	**0.0000**	**4.7660**

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	0.1894	1.7333	1.8163	2.9900e-003		0.0898	0.0898		0.0845	0.0845	0.0000	257.2150	257.2150	0.0616	0.0000	258.7556
Total	**0.1894**	**1.7333**	**1.8163**	**2.9900e-003**		**0.0898**	**0.0898**		**0.0845**	**0.0845**	**0.0000**	**257.2150**	**257.2150**	**0.0616**	**0.0000**	**258.7556**

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	6.1500e-003	0.1977	0.0534	5.3000e-004	0.0133	3.7000e-004	0.0137	3.8300e-003	3.5000e-004	4.1900e-003	0.0000	51.5295	51.5295	3.0800e-003	0.0000	51.6065
Worker	0.0327	0.0245	0.2823	8.6000e-004	0.0888	7.1000e-004	0.0895	0.0236	6.5000e-004	0.0242	0.0000	77.3152	77.3152	2.1300e-003	0.0000	77.3684
Total	**0.0388**	**0.2223**	**0.3357**	**1.3900e-003**	**0.1021**	**1.0800e-003**	**0.1032**	**0.0274**	**1.0000e-003**	**0.0284**	**0.0000**	**128.8447**	**128.8447**	**5.2100e-003**	**0.0000**	**128.9749**

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	0.1894	1.7333	1.8163	2.9900e-003		0.0898	0.0898		0.0845	0.0845	0.0000	257.2147	257.2147	0.0616	0.0000	258.7553
Total	**0.1894**	**1.7333**	**1.8163**	**2.9900e-003**		**0.0898**	**0.0898**		**0.0845**	**0.0845**	**0.0000**	**257.2147**	**257.2147**	**0.0616**	**0.0000**	**258.7553**

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	6.1500e-003	0.1977	0.0534	5.3000e-004	0.0127	3.7000e-004	0.0131	3.7000e-003	3.5000e-004	4.0500e-003	0.0000	51.5295	51.5295	3.0800e-003	0.0000	51.6065
Worker	0.0327	0.0245	0.2823	8.6000e-004	0.0842	7.1000e-004	0.0849	0.0225	6.5000e-004	0.0231	0.0000	77.3152	77.3152	2.1300e-003	0.0000	77.3684
Total	**0.0388**	**0.2223**	**0.3357**	**1.3900e-003**	**0.0969**	**1.0800e-003**	**0.0980**	**0.0262**	**1.0000e-003**	**0.0272**	**0.0000**	**128.8447**	**128.8447**	**5.2100e-003**	**0.0000**	**128.9749**

3.6 Paving - 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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0126**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

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	6.5000e-004	5.0000e-004	5.6700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4834	1.4834	4.0000e-005	0.0000	1.4845
Total	**6.5000e-004**	**5.0000e-004**	**5.6700e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4834**	**1.4834**	**4.0000e-005**	**0.0000**	**1.4845**

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0126**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

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	6.5000e-004	5.0000e-004	5.6700e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4834	1.4834	4.0000e-005	0.0000	1.4845
Total	**6.5000e-004**	**5.0000e-004**	**5.6700e-003**	**2.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4834**	**1.4834**	**4.0000e-005**	**0.0000**	**1.4845**

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	0.2165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.2185**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

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	6.1000e-004	4.5000e-004	5.2300e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4312	1.4312	4.0000e-005	0.0000	1.4322
Total	**6.1000e-004**	**4.5000e-004**	**5.2300e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4312**	**1.4312**	**4.0000e-005**	**0.0000**	**1.4322**

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	0.2165					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.2185**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

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	6.1000e-004	4.5000e-004	5.2300e-003	2.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4312	1.4312	4.0000e-005	0.0000	1.4322
Total	**6.1000e-004**	**4.5000e-004**	**5.2300e-003**	**2.0000e-005**	**1.5600e-003**	**1.0000e-005**	**1.5700e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.4312**	**1.4312**	**4.0000e-005**	**0.0000**	**1.4322**

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	0.2412	1.2232	2.9997	0.0106	0.8595	8.9200e-003	0.8684	0.2304	8.3200e-003	0.2387	0.0000	976.7602	976.7602	0.0518	0.0000	978.0549
Unmitigated	0.2412	1.2232	2.9997	0.0106	0.8595	8.9200e-003	0.8684	0.2304	8.3200e-003	0.2387	0.0000	976.7602	976.7602	0.0518	0.0000	978.0549

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	417.24	417.24	417.24	1,425,772	1,425,772
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	342.15	342.15	342.15	619,647	619,647
Strip Mall	115.14	115.14	115.14	219,060	219,060
Total	874.53	874.53	874.53	2,264,479	2,264,479

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 Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive Thru	16.60	8.40	6.90	1.50	79.50	19.00	51	37	12
Strip Mall	16.60	8.40	6.90	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low 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
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	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
Strip Mall	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

Exceed Title 24

	ROG	NOx	CO	SO2	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	194.0795	194.0795	0.0103	2.1300e-003	194.9720
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	206.3176	206.3176	0.0110	2.2700e-003	207.2664
NaturalGas Mitigated	8.2800e-003	0.0728	0.0450	4.5000e-004		5.7200e-003	5.7200e-003		5.7200e-003	5.7200e-003	0.0000	81.9068	81.9068	1.5700e-003	1.5000e-003	82.3935
NaturalGas Unmitigated	8.8400e-003	0.0777	0.0475	4.8000e-004		6.1100e-003	6.1100e-003		6.1100e-003	6.1100e-003	0.0000	87.5266	87.5266	1.6800e-003	1.6000e-003	88.0468

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 Low Rise	931367	5.0200e-003	0.0429	0.0183	2.7000e-004		3.4700e-003	3.4700e-003		3.4700e-003	3.4700e-003	0.0000	49.7013	49.7013	9.5000e-004	9.1000e-004	49.9966
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	703818	3.8000e-003	0.0345	0.0290	2.1000e-004		2.6200e-003	2.6200e-003		2.6200e-003	2.6200e-003	0.0000	37.5584	37.5584	7.2000e-004	6.9000e-004	37.7816
Strip Mall	5002	3.0000e-005	2.5000e-004	2.1000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2669	0.2669	1.0000e-005	0.0000	0.2685
Total		**8.8500e-003**	**0.0777**	**0.0475**	**4.8000e-004**		**6.1100e-003**	**6.1100e-003**		**6.1100e-003**	**6.1100e-003**	**0.0000**	**87.5266**	**87.5266**	**1.6800e-003**	**1.6000e-003**	**88.0467**

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 Low Rise	846245	4.5600e-003	0.0390	0.0166	2.5000e-004		3.1500e-003	3.1500e-003		3.1500e-003	3.1500e-003	0.0000	45.1589	45.1589	8.7000e-004	8.3000e-004	45.4272
Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	684155	3.6900e-003	0.0335	0.0282	2.0000e-004		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	36.5091	36.5091	7.0000e-004	6.7000e-004	36.7261
Strip Mall	4475.87	2.0000e-005	2.2000e-004	1.8000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2389	0.2389	0.0000	0.0000	0.2403
Total		**8.2700e-003**	**0.0728**	**0.0449**	**4.5000e-004**		**5.7200e-003**	**5.7200e-003**		**5.7200e-003**	**5.7200e-003**	**0.0000**	**81.9068**	**81.9068**	**1.5700e-003**	**1.5000e-003**	**82.3935**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	241702	59.9086	3.1800e-003	6.6000e-004	60.1841
Enclosed Parking with Elevator	414888	102.8346	5.4600e-003	1.1300e-003	103.3075
Fast Food Restaurant w/o Drive Thru	134627	33.3688	1.7700e-003	3.7000e-004	33.5222
Strip Mall	41175	10.2057	5.4000e-004	1.1000e-004	10.2526
Total		**206.3176**	**0.0110**	**2.2700e-003**	**207.2664**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	239503	59.3634	3.1500e-003	6.5000e-004	59.6364
Enclosed Parking with Elevator	373258	92.5160	4.9100e-003	1.0200e-003	92.9415
Fast Food Restaurant w/o Drive Thru	130917	32.4491	1.7200e-003	3.6000e-004	32.5984
Strip Mall	39340.4	9.7510	5.2000e-004	1.1000e-004	9.7958
Total		**194.0795**	**0.0103**	**2.1400e-003**	**194.9720**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	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	0.2735	0.0175	0.5953	1.0000e-004		4.1200e-003	4.1200e-003		4.1200e-003	4.1200e-003	0.0000	13.2838	13.2838	1.1700e-003	2.3000e-004	13.3804
Unmitigated	0.4589	0.0216	0.9531	9.6000e-004		0.0577	0.0577		0.0577	0.0577	6.0545	12.5994	18.6539	0.0190	4.1000e-004	19.2512

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	0.0216					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1867	0.0148	0.3623	9.2000e-004		0.0544	0.0544		0.0544	0.0544	6.0545	11.6346	17.6891	0.0181	4.1000e-004	18.2630
Landscaping	0.0180	6.8100e-003	0.5908	3.0000e-005		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	0.9647	0.9647	9.4000e-004	0.0000	0.9882
Total	**0.4589**	**0.0216**	**0.9531**	**9.5000e-004**		**0.0577**	**0.0577**		**0.0577**	**0.0577**	**6.0545**	**12.5994**	**18.6539**	**0.0190**	**4.1000e-004**	**19.2512**

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	0.0216					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2326					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2400e-003	0.0106	4.5300e-003	7.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	12.3190	12.3190	2.4000e-004	2.3000e-004	12.3922
Landscaping	0.0180	6.8100e-003	0.5908	3.0000e-005		3.2600e-003	3.2600e-003		3.2600e-003	3.2600e-003	0.0000	0.9647	0.9647	9.4000e-004	0.0000	0.9882
Total	**0.2735**	**0.0175**	**0.5953**	**1.0000e-004**		**4.1200e-003**	**4.1200e-003**		**4.1200e-003**	**4.1200e-003**	**0.0000**	**13.2838**	**13.2838**	**1.1800e-003**	**2.3000e-004**	**13.3804**

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.7885	0.1279	3.2100e-003	24.9417
Unmitigated	24.2378	0.1598	3.9900e-003	29.4212

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	3.71378 / 2.3413	19.6114	0.1220	3.0600e-003	23.5730
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0.925778 / 0.0590922	3.4443	0.0303	7.5000e-004	4.4252
Strip Mall	0.225921 / 0.138468	1.1821	7.4200e-003	1.9000e-004	1.4231
Total		**24.2378**	**0.1597**	**4.0000e-003**	**29.4212**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	2.97102 / 2.3413	16.9786	0.0977	2.4600e-003	20.1538
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	0.740622 / 0.0590922	2.7880	0.0243	6.0000e-004	3.5729
Strip Mall	0.180737 / 0.138468	1.0220	5.9400e-003	1.5000e-004	1.2151
Total		**20.7885**	**0.1279**	**3.2100e-003**	**24.9417**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.5515	0.3872	0.0000	16.2312
Unmitigated	13.1031	0.7744	0.0000	32.4623

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	26.22	5.3224	0.3146	0.0000	13.1861
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	35.13	7.1311	0.4214	0.0000	17.6669
Strip Mall	3.2	0.6496	0.0384	0.0000	1.6093
Total		**13.1031**	**0.7744**	**0.0000**	**32.4623**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	13.11	2.6612	0.1573	0.0000	6.5930
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	17.565	3.5655	0.2107	0.0000	8.8335
Strip Mall	1.6	0.3248	0.0192	0.0000	0.8046
Total		**6.5515**	**0.3872**	**0.0000**	**16.2312**

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