HELIX Environmental Planning

Enchanted Hills Park Project

Air Quality and Greenhouse Gas Emissions Technical Report

December 2019 | COP-04

Prepared for:

City of Perris Community Service Department
135 N. D Street
Perris, CA 92570

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
APCD	Air Pollution Control District
AQMP	Air Quality Management Plan
BACM	Best Available Control Measures
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBSC	California Building Standards Commission
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF_4	tetraflouromethane
CFC	chlorofluorocarbon
CH_4	methane
City	City of Perris
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of Riverside
DPM	diesel particulate matter
EO	Executive Order
F	Fahrenheit
GHG	greenhouse gas
GWP	global warming potential

ACRONYMS AND ABBREVIATIONS (cont.)

H_2S	hydrogen sulfide
HAP	Hazardous Air Pollutant
HFC	hydrofluorocarbon
HRA	health risk assessment
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LOS	level of service
LST	localized significance threshold
mg/m^3	milligrams per cubic meter
MMT	million metric tons
mpg	miles per gallon
MPO	Metropolitan Planning Organization
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
O_3	ozone
OPR	Governor's Office of Planning and Research
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million
ROG	reactive organic gas
RTP	Regional Transportation Plan

ACRONYMS AND ABBREVIATIONS (cont.)

SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRA	source receptor area
TACs	toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOC	volatile organic compound
WRCC	Western Regional Climate Center
WRCOG	Western Riverside Council of Governments

EXECUTIVE SUMMARY

This report assesses potential air quality and greenhouse gas (GHG) emission impacts during construction and operation of the proposed Enchanted Hills Park Project (Project), located east of Carter Drive, north of Weston Road, west of Altura Drive, and south of West Metz Road, in the city of Perris (City). The proposed Project involves the construction of a park with a combination of passive and active recreational features on a predominately undeveloped 22-acre site. The park would include a multi-use field, child play area, toddler play area, restrooms, picnic shelters, hardscape, parking lots, bridges, trails, a basketball court, BMX course improvements, art rocks, splash play, a skating area, an adventure play, and a zip line.

The Project would result in emissions of criteria air pollutants during construction and operation. Construction emissions would include fugitive dust, heavy construction equipment exhaust, and vehicle exhaust associated with workers commuting to and from the site and trucks hauling materials. To account for the requirements of South Coast Air Quality Management District (SCAQMD) Rule 403, fugitive dust control measures including the use of an on-site water truck to wet down active grading areas and roads at least twice daily are incorporated into the Project design. Operational sources of criteria pollutant emissions include area and transportation. Project emissions of criteria pollutants during construction and operation of the proposed park would remain below SCAQMD emissions thresholds.

The Project would be consistent with air quality policies set forth by the SCAQMD as presented in the most recent Air Quality Management Plan.

Project-generated traffic would not result in a carbon monoxide hot spot. Construction and operation of the Project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants. In addition, evaluation of potential odors from the Project indicated that associated impacts would be less than significant.

Construction sources of GHG emissions include heavy construction equipment, worker vehicle miles traveled (VMT), and water use. Operational sources of GHG emissions include area, energy, transportation, water use, and solid waste. The Project-related construction activities are estimated to generate 1,362 metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 30 years, such that the proposed construction activities would contribute an average of 45 MT per year of CO_2e emissions. The Project-related operational and amortized construction GHG emissions for opening year are estimated to generate 386 MT CO_2e. Project emissions would not exceed the GHG screening threshold of 3,000 MT CO_2e established by the SCAQMD. The Project would be consistent with SB 32, the Western Riverside Council of Governments (WRCOG) Subregional Climate Action Plan (CAP), and the City's CAP and would result in a less than significant impact related to GHG emissions.

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report analyzes potential air quality and greenhouse gas (GHG) emissions impacts associated with the proposed Enchanted Hills Park Project (Project). The analysis includes a description of existing conditions in the Project vicinity, an assessment of potential impacts associated with Project specific construction activities and long-term operation, and an assessment of potential health risks and objectionable odors. Analysis within this report for both air quality and GHG emissions addresses the relevant issues listed in Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

1.2 PROJECT LOCATION

The Project site is located on an approximately 22-acre undeveloped site in Perris, California. The site is immediately bordered by West Metz Road to the north, Weston Road to the south, and single-family residences to the west and east. See Figure 1, *Regional Location*, and Figure 2, *Aerial Photograph.*

1.3 PROJECT DESCRIPTION

The proposed Project involves the construction of a park with a combination of passive and active recreational features. The park would include a multi-use field, child play area, toddler play area, restrooms, picnic shelters, hardscape, parking lots, bridges, trails, a basketball court, BMX course improvements, art rocks, splash play, a skating area, an adventure play, and a zip line (see Figure 3, *Conceptual Site Plan*).The Project would retain and incorporate some of the existing site features, such as Owl Rock, which is a painted boulder, and the existing BMX course.

1.4 CONSTRUCTION ACTIVITIES AND PHASING

Project construction is anticipated to begin in September 2020 and be completed in November 2021. Construction activities would include site preparation, grading, construction of structures, paving of the parking lots and driveways, and the application of architectural coatings. Grading is assumed to require up to 11,200 cubic yards of soil hauling. Detailed construction phasing and equipment assumptions are included in Section 4.1, below, and the California Emissions Estimator Model (CalEEMod) output files in Appendix A.

2.0 REGULATORY SETTING

2.1 AIR QUALITY

2.1.1 Criteria Pollutants

Six air pollutants have been identified by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level: ground-level ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead, and particulate matter (PM), which is subdivided into two classes based on particle size: coarse PM equal to or less than 10 micrometers in diameter (PM_{10}) and fine PM equal to or less than 2.5 micrometers in

diameter ($PM_{2.5}$). These air pollutants are commonly referred to as "criteria air pollutants" because air quality standards are regulated using human health and environmentally based criteria. Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants (secondary pollutants; e.g., ozone, NO_2, PM_{10}, and $PM_{2.5}$) in the atmosphere. PM_{10} and $PM_{2.5}$ can be both primary pollutants emitted directly from a source and secondary pollutants formed through chemical reactions in the atmosphere. The principal precursor pollutants of concern are reactive organic gasses ([ROGs] also known as volatile organic compounds [VOCs])[1] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association ([CAPCOA] 2019). Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

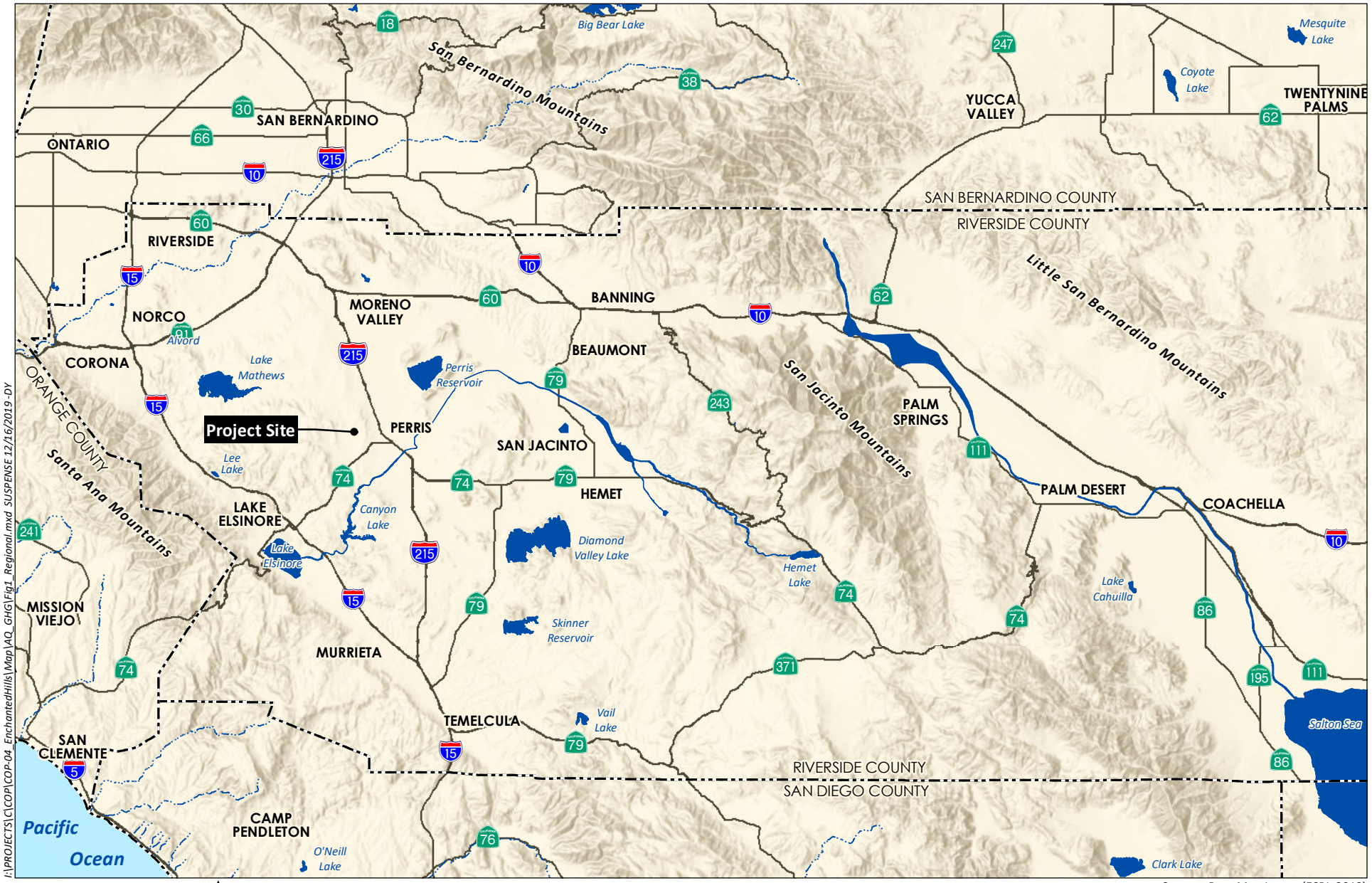
Other pollutants known as GHGs (e.g., carbon dioxide [CO_2]), have been linked to climate change. Unlike criteria air pollutants, there are no regulated concentration limits for GHGs. However, Assembly Bill (AB) 32 and Senate Bill (SB) 32 require the state to reduce GHG emissions, as discussed further in Section 2.2, *Greenhouse Gases*. GHG emissions do not jeopardize the air basin's air quality attainment status.

Table 1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
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.
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 and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Enchanted Hills Park



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0 10 Miles

Source: Base Map Layers (ESRI, 2013)

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Regional Location

Figure 1

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0 200 Feet

Source: Aerial (ESRI)

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Aerial Photograph

Figure 2

LEGEND:

1. MULTI-USE FIELD
2. CHILD PLAY AREA
3. TOT PLAY AREA
4. LARGE RESTROOM BUILDING
5. SMALL RESTROOM BUILDING
6. PICNIC SHELTERS
7. HARDSCAPE
8. PARKING LOTS
9. BRIDGES
10. TRAILS
11. HALF-COURT BASKETBALL
12. BMX COURSE IMPROVEMENTS
13. ART ROCKS
14. PROTECT EXISTING OWL ROCK
15. SPLASH PLAY
16. SKATE SPOT
17. ADVENTURE PLAY
18. ZIP LINE
19. RIPARIAN/RIVERINE AREAS

NORTH

0' 50' 100' 200'

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Source: City of Perris 2019

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Conceptual Site Plan

Figure 3

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Table 1 (cont.)
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include 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. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. 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.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2019

2.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

2.1.3 Federal Air Quality Regulations

2.1.3.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA), first enacted in 1963 and amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA mandates the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Table 2, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

Table 2
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	

Table 2 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2016

[1] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

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

AAM: Annual Arithmetic Mean; CO: carbon monoxide; km: kilometer; mg/m^3: milligrams per cubic meter; NO_2 nitrogen dioxide; O_3: ozone; ppm: parts per million; PM_{10}: coarse particulate matter with an aerodynamic diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with an aerodynamic diameter of 2.5 microns or less; SO_2: sulfur dioxide; –: No Standard; µg/m^3: micrograms per cubic meter

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants described in Table 1 through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The Project site is located within the South Coast Air Basin (SCAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA. Table 3 of Section 2.1.5.1, *South Coast Air Basin Attainment Status*, lists the federal and state attainment status of the SCAB for the criteria pollutants. The USEPA classifies the SCAB as in attainment for CO, PM_{10}, NO_2, SO_2, and lead; in extreme nonattainment for 8-hour ozone; and in serious nonattainment for $PM_{2.5}$ with respect to federal air quality standards.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine whether they conform to the requirements of the CAA.

2.1.4 California Air Quality Regulations

2.1.4.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

Table 3 lists the state attainment status of the SCAB for the criteria pollutants. Under state designation, the SCAB is currently in attainment for CO, NO_2, SO_2, and lead; and in nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

2.1.4.2 Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as AB 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, CARB normally establishes minimum statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

Supplementing the Tanner process, AB 2588 – the Air Toxics "Hot Spots" Information and Assessment Act of 1987 – currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns 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. In 1998, the CARB identified DPM as a toxic air contaminant based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a significant impact on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2018).

In September 2000, CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions

from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now in force on a statewide basis.

2.1.5 Local Regulations

2.1.5.1 South Coast Air Quality Management District

The Project is located in western Riverside County (County). Air quality in the western portion of the County is regulated by the South Coast Air Quality Management District (SCAQMD). As a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), County transportation commissions, and local governments and cooperates actively with all federal and state government agencies. The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

The SCAQMD is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources. It has responded to this requirement by preparing a sequence of Air Quality Management Plans (AQMP).

On March 3, 2017, the SCAQMD adopted the 2016 AQMP, which is a regional and multi-agency effort (SCAQMD, CARB, SCAG, and USEPA). The 2016 AQMP represents a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. The plan seeks to achieve multiple goals in partnership with other entities promoting reductions in criteria pollutant, greenhouse gases, and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017).

The AQMP, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB for inclusion in the SIP. The SIP relies on the same information from SCAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The current federal and state attainment status for the SCAB is presented in Table 3, *South Coast Air Basin Attainment Status*.

The SCAQMD Rule 403, *Fugitive Dust,* requires the implementation of best available dust control measures (BACM) during active operations capable of generating fugitive dust. Rule 403 prohibits the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that the dust remains visible in the atmosphere beyond the property line of the emission source; or the dust emission exceeds 20 percent opacity, if the dust emission is the result of movement of a motorized vehicle (SCAQMD 2005).

Table 3
SOUTH COAST AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Extreme Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
PM_{10}	Attainment (Maintenance)	Nonattainment
$PM_{2.5}$	Serious Nonattainment	Nonattainment
NO_2	Attainment (Maintenance)	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Attainment
Visibility	(No federal standard)	Attainment

Source: SCAQMD 2016
O_3 = ozone; CO = carbon monoxide; PM_{10} = particulate matter 10 micros or less in diameter; $PM_{2.5}$ = particulate matter 2.5 micros or less in diameter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide

2.2 GREENHOUSE GASES

2.2.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with 2016 global surface temperatures ranking as the warmest year on record since 1880 and 2017 as the second warmest. The 2017 global average surface temperatures were 0.9 degrees Celsius warmer than the 1951 to 1980 mean temperature (National Aeronautics and Space Administration [NASA] 2018). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

The GHGs defined under California's Assembly Bill (AB) 32 include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Carbon dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of November 2019, the CO_2 concentration exceeded 410 ppm, a 47 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA] 2019).

Methane. CH_4 is the main component of natural gas used in homes. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). Estimates of GHG emissions are often presented in CO_2e, which weigh each gas by its GWP. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Emissions of CO_2e are commonly presented in metric tons (MT; 1 MT equals approximately 2,205 pounds). The atmospheric lifetime and GWP of selected GHGs are summarized in Table 4, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 4
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* (USEPA*)* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people.

2.2.3.2 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the National Highway Traffic Safety Administration (NHTSA) have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. On August 2, 2018, the agencies released a notice of proposed rulemaking—the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and greenhouse gas emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 miles per gallon in 2020 to 50 miles per gallon in 2025. By contrast, the new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdraw of the waiver previously provided to California for that State's GHG and zero emissions vehicle (ZEV) programs under section 209 of the CAA. The combined USEPA GHG emission standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA and NHTSA 2018 and 2012).

2.2.4 California Greenhouse Gas Regulations

2.2.4.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect on January 1, 2017. The 2019 Standards will continue to improve upon the 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 Standards will go into effect on January 1, 2020. The Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

The California Green Building Standards Code (CALGreen; CCR Title 24, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including industrial buildings) throughout California. The code is Part 11 of the California Building Standards Code in Title 24 of the CCR (California Building Standards Commission 2017). The current 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017. The 2019 Standards will continue to improve upon the 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 Standards will go into effect on January 1, 2020.

The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.2.4.3 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. EOs are not laws and can only provide the governor's direction to state agencies to act within their authority. Legislation is required to enact the goals of EO S-3-05 and establish a framework for statewide implementation. AB 32, described below, mandates the 2020 GHG reduction goals of EO S-3-05. The 2050 GHG reduction goal of EO S-3-05 has not been enacted by any legislation and remains only a goal of the EO.

2.2.4.4 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28-nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050. Senate Bill (SB) 32, described below, mandates the 2030 GHG reduction goals of EO B-30-15.

2.2.4.5 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. AB 32 enacts the goals of EO S-3-05.

2.2.4.6 Senate Bill 32

SB 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

2.2.4.7 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

2.2.4.8 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

2.2.4.9 Assembly Bill 75

AB 75 was passed in 1999 and mandates state agencies to develop and implement an integrated waste management plan to reduce GHG emissions related to solid waste disposal. In addition, the bill mandates that community service districts providing solid waste services report the disposal and diversion information to the appropriate city, county, or regional jurisdiction. The bill requires diversion of at least 50 percent of the solid waste from landfills and transformation facilities, and submission to the California Department of Resources Recycling and Recovery (CalRecycle; formerly known as California Integrated Waste Management Board) of an annual report describing the diversion rates.

2.2.4.10 Assembly Bill 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012 and went into effect on July 1, 2012.

2.2.4.11 Executive Order S-01-07

EO S-01-07, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.4.12 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each

entity will meet their customers resource needs, reduce greenhouse gas emissions, and increase the use of clean energy.

2.2.4.13 Senate Bill 100

Approved by Governor Brown on September 10, 2018, SB 100 increases the portion of California's electricity that must come from renewable sources from 50 percent (as mandated by SB 350) to 60 percent by 2030. The bill also establishes a goal of 100 percent of California's electricity sourced from renewable energy and other zero net GHG emissions resources (such as nuclear power) by 2045.

2.2.5 Senate Bill 97 – CEQA: Greenhouse Gas Emissions

SB 97 required the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption. The Resources Agency certified and adopted the guidelines on December 31, 2009. The OPR guidance states that the lead agency can rely on qualitative or other performance-based standards for estimating the significance of GHG emissions, although the new CEQA Guidelines did not establish a threshold of significance.

2.2.6 Senate Bill 375

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPOs' Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

2.2.6.1 California Air Resources Board: Climate Change Scoping Plan

In December 2008, CARB adopted its first version of its Climate Change Scoping Plan (Scoping Plan), which contained the main strategies California will implement to achieve the mandate of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the mandate of SB 32 (2016) to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017).

The 2017 Scoping Plan includes guidance to local governments in Chapter 5, including plan-level GHG emissions reduction goals and methods to reduce communitywide GHG emissions. In its guidance, CARB recommends that "local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals." CARB further states that "it is appropriate for local jurisdictions to derive evidence-based local per capita goals [or some other metric] that the local jurisdiction deems appropriate, such as mass emissions or per service population, based on local

emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets" (CARB 2017).

2.2.7 Local Regulations

2.2.7.1 Southern California Association of Governments

SCAG, of which the City of Perris (City) is a member agency, adopted the 2016-2040 RTP/SCS in April 2016. The RTP/SCS is a State- and federally required long-range plan for regional transportation and land use. The plan anticipates expenditures of $556.5 billion—of which $275.5 billion is budgeted for operations and maintenance of the regional transportation system and another $246.6 billion is reserved for transportation capital improvements. It is anticipated that implementation of the RTP/SCS would result in an eight percent reduction in GHG emissions per capita by 2020, an 18 percent reduction by 2035 and a 21 percent reduction by 2040, compared with 2005 levels (SCAG 2016).

2.2.7.2 Western Riverside Council of Governments

The twelve cities of the Western Riverside Council of Governments (WRCOG), which includes the City, adopted a Subregional Climate Action Plan (CAP) in September 2014. The CAP provides a 2010 baseline inventory of GHG emissions for the subregion cities of 5,834,400 MT of CO_2e. Approximately 57 percent of the GHG inventory was from transportation sources, 21 percent from commercial/industrial energy use, 20 percent from residential energy use, and the remaining from waste water and solid waste sources. The CAP established a target of reducing subregional GHG emissions 15 percent below 2010 levels by 2020 and 49 percent below 2010 levels by 2035. To achieve the 2020 reduction target, the CAP identifies 14 State and regional measures, 3 local energy sector measures, 18 local transportation sector measures, and 2 solid waste sector measures. The CAP does not identify GHG reduction measures for achieving goals beyond 2020 (WRCOG 2014). The CAP does not include thresholds for determining the significance of GHG emissions for new land development, nor does it include a checklist or other methodology for determining consistency of new development with the goals and measures in the CAP. Since adoption of the original Subregional CAP, WRCOG received grant funding from the California Department of Transportation (Caltrans) Sustainable Transportation Planning Grant Program to prepare an update and expansion to the Subregional CAP, which is termed the CAP Update. The CAP Update will include a comprehensive update to GHG inventories and GHG emissions reduction strategies for all sectors and will establish GHG targets for the year 2050 for WRCOG member jurisdictions.

2.2.7.3 City of Perris

In February 2016, the City adopted a CAP, based on WRCOG's Subregional CAP, that addresses global climate change through the reduction of GHG emissions at the community level to be compliant with AB 32. The City's CAP utilizes WRCOG's analysis of existing GHG reduction programs and policies that have already been implemented in the subregion and of applicable best management practices from other regions to assist in meeting the subregional reduction target goals. Through its CAP, the City, as with other jurisdictional members of WRCOG, has adopted measures from the Subregional CAP and independently determined the level of implementation of each measure. As with the WRCOG Subregional CAP, the City's CAP does not include numerical thresholds for determining the significance of GHG emissions for new land development, nor does it include a checklist or other methodology for determining consistency of new development with the goals and measures in the CAP.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The Project site is in the SCAB, which consists of all or part of four counties: Los Angeles, San Bernardino, Riverside, and Orange. The distinctive climate of the SCAB is determined by its terrain and geographic location. The SCAB is a coastal plain with connecting broad valleys and low hills. It is bound by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light, average wind speeds.

The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds. Winds in the Project area are usually driven by the dominant land/ sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night, the wind generally slows and reverses direction traveling toward the sea. Local canyons can also alter wind direction, with wind tending to flow parallel to the canyons. The vertical dispersion of air pollutants in the SCAB is hampered by the presence of persistent temperature inversions. High pressure systems, such as the semi-permanent high-pressure zone in which the SCAB is located, are characterized by an upper layer of dry air that warms as it descends, restricting the mobility of cooler marine-influenced air near the ground surface, and resulting in the formation of subsidence inversions. Such inversions restrict the vertical dispersion of air pollutants released into the marine layer and, together with strong sunlight, can produce worst-case conditions for the formation of photochemical smog.

The annual average maximum temperature as measured at the Elsinore climatic station, approximately 9 miles northwest of the Project site, is 80.6° Fahrenheit (F). The highest monthly average maximum temperature (98.1°F) occurs in July and August, and the lowest monthly average minimum temperature (36.4°F) occurs in January (Western Regional Climate Center [WRCC] 2017). The average annual precipitation is approximately 12 inches (WRCC 2017).

3.2 EXISTING AIR QUALITY

3.2.1 Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in Section 2.1 and Table 3. The SCAB is a federal and state nonattainment area for ozone and $PM_{2.5}$. The SCAB is also a state nonattainment area for PM_{10}.

3.2.1.2 Monitored Air Quality

The SCAQMD maintains monitoring stations to measure ambient concentrations of pollutants in the SCAB. The nearest monitoring station to the Project site is the Perris monitoring station, located approximately 1.6 miles east of the Project site. The Perris station monitors ozone and PM_{10}. Data from the Lake Elsinore – W. Flint Street monitoring station, located approximately 9 miles southwest of the Project site, was used for $PM_{2.5}$ and NO_2. Table 5, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the Perris and Lake Elsinore air quality monitoring stations during the years of 2016 through 2018 for which the SCAQMD has reported data. As shown in

Table 5, the 1- and 8-hour ozone standards, as well as the state PM_{10} standard, were exceeded numerous times in each of the sample years.

Table 5
AIR QUALITY MONITORING DATA

Pollutant Standards	2016	2017	2018
Ozone (O_3)			
Maximum concentration 1-hour period (ppm)	0.131	0.120	0.117
Maximum concentration 8-hour period (ppm)	0.098	0.105	0.103
Days above 1-hour state standard (>0.09 ppm)	23	33	31
Days above 8-hour state/federal standard (>0.070 ppm)	55	90	67
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.051	0.049	0.041
Days above state 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Coarse Particulates (PM_{10})			
Maximum 24-hour concentration (µg/m^3)	76.0	75.4	64.4
Days above state standard (>50 µg/m^3)	5	11	2
Days above federal standard (>150 µg/m^3)	0	0	0
Fine Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	31.5	27.2	31.2
Days above federal standard (>35 µg/m^3)	*	*	*

Source: CARB 2019a
ppm = parts per million
*Insufficient data available to determine the value

3.2.2 Greenhouse Gases

For 2012, total GHG emissions worldwide were estimated at 46,049 MMT CO_2e (World Resources Institute 2017). The U.S. contributed the second largest portion of GHG emissions (behind China) at 12 percent of global emissions, with 5,823 MMT CO_2e in 2012. On a national level in 2013, approximately 27 percent of GHG emissions are associated with transportation and about 31 percent are associated with electricity generation (USEPA 2015).

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 6, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2017.

Table 6
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR
(MMT CO_2e)

Sector	1990	2000	2010	2017
Agriculture and Forestry	18.9 (4%)	31.0 (7%)	33.7 (8%)	32.4 (8%)
Commercial	14.4 (3%)	14.1 (3%)	20.1 (4%)	23.3 (5%)
Electricity Generation	110.5 (26%)	105.4 (22%)	90.6 (20%)	62.6 (15%)
Industrial	105.3 (24%)	105.8 (22%)	101.8 (23%)	101.1 (24%)
Residential	29.7 (7%)	31.7 (7%)	32.1 (7%)	30.4 (7%)
Transportation	150.6 (35%)	183.2 (39%)	170.2 (38%)	174.3 (41%)
Unspecified Remaining	1.3 (<1%)	-	-	-
TOTAL	**430.7**	**471.1**	**448.5**	**424.1**

Source: CARB 2007 and CARB 2018c
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 7, statewide GHG emissions totaled 431 MMT CO_2e in 1990, 471 MMT CO_2e in 2000, 448 MMT CO_2e in 2010, and 424 MMT CO_2e in 2017. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The WRCOG prepared an emissions inventory as part of their Subregional CAP. In 2010, Subregional CAP cities emitted approximately 5,834,400 metric tons of GHG emissions. The breakdown of emissions by sector is shown below in Table 7, *Western Riverside Council of Governments Greenhouse Gas Emissions by Sector*. With the exception of transportation, the sectors reported in the CAP inventory do not correspond directly to those reported in the statewide inventory.

Table 7
WESTERN RIVERSIDE COUNCIL OF GOVERNMENTS
GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	2010
Transportation	57%
Commercial/Industrial Energy	21%
Residential Energy	22%
Solid Waste	2%
Wastewater	<1%
TOTAL	**5.834 MMT CO_2e**

Source: WRCOG 2014
MMT = million metric tons; CO_2e = carbon dioxide equivalent

Similar to the statewide emissions, transportation-related GHG emissions for the Subregional CAP cities were the greatest contributor, followed by energy-related GHG emissions.

The City also prepared a community-level emissions inventory as part of their CAP. In 2010, the City emitted 379,099 metric tons of GHG emissions. The breakdown of the City's emissions by sector is shown below in Table 8, *City of Perris Greenhouse Gas Emissions by Sector.*

Table 8
CITY OF PERRIS GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	2010
Transportation	60%
Commercial/Industrial Energy	15%
Residential Energy	20%
Solid Waste	2%
Wastewater	3%
TOTAL	**0.379 MMT CO_2e**

Source: City 2016
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As with both the statewide and WRCOG emissions, transportation-related GHG emissions for the City were the greatest contributor, followed by energy-related GHG emissions.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

With the exception of localized concentrations of pollutants and TACs, air pollution is largely a cumulative impact. The nonattainment status of regional criteria pollutants is a result of past and present development within the SCAB. Thus, this regional impact is a cumulative impact, and the Project's impact on the SCAB attainment status resulting from short-term construction and long-term operation emissions is evaluated cumulatively.

Criteria pollutant and GHG emissions for Project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model was developed for CAPCOA in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (CAPCOA 2017). The input data and subsequent construction and operation emission estimates for the proposed Project are discussed below. CalEEMod output files for the Project are included in Appendix A to this report.

4.1.1 Construction Emissions

As described above, construction emissions were estimated using CalEEMod version 2016.3.2. The model uses OFFROAD2011 emission factors and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and

quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, the ozone precursors ROG and NO_X, and the GHGs CO_2, N_2O, and CH_4 reported as CO_2e.

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed maximum daily emissions from individual construction activities, including site preparation, grading, structure construction, paving, and architectural coating. Construction equipment estimates are based CalEEMod defaults. Table 9, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each phase of construction.

Table 9
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number	Daily Hours per Equipment
Site Preparation	Rubber Tired Dozer	3	8
	Tractor/Loader/Backhoe	4	8
Grading	Excavator	2	8
	Graders	1	8
	Rubber Tired Dozers	1	8
	Scrapers	2	8
	Tractor/Loader/Backhoe	2	8
Building Construction	Cranes	1	7
	Forklifts	3	8
	Generator Sets	1	8
	Tractor/Loader/Backhoe	3	7
	Welders	1	8
Paving	Pavers	2	8
	Paving Equipment	2	8
	Rollers	2	8
Architectural Coating	Air Compressor	1	6

Source: CalEEMod
Note: Complete equipment data, including equipment horsepower and load factor, is included in Appendix A.

The construction schedule was based on CalEEMod defaults with the building construction phase reduced based on the limited structures to be provided at the proposed park. As shown in Table 10, *Anticipated Construction Schedule*, Project development is assumed to start in September 2020 and projected to be complete November 2021.

Table 10
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Site Preparation	9/1/2020	9/14/2020	10
Grading	9/15/2020	11/2/2020	35
Building Construction	11/3/2020	9/30/2021	238
Paving	10/1/2021	10/28/2021	20
Architectural Coating	10/29/2021	11/25/2021	20

Source: CalEEMod.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecast. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than incorporated in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Emissions calculations assume application of water on all unpaved roads and disturbed surfaces a minimum of twice per day during site preparation and grading in compliance with SCAQMD Rule 403, Fugitive Dust.

4.1.2 Operation Emissions

Emissions related to long-term operation were estimated using CalEEMod. Operational sources of emissions include area, energy, transportation, water use, and solid waste. Operational emissions from area sources include the use of consumer products and engine emissions from landscape maintenance equipment. Model output data sheets are included in Appendix A.

Operational emissions from mobile sources are associated with Project-related vehicle trip generation and trip length. The Focused Traffic Assessment that was prepared for the Project estimated that the Project would generate 90 daily trips on weekdays and 450 daily trips on weekends (Urban Crossroads 2019). CalEEMod defaults for trip purposes and distances were used.

CalEEMod defaults for area, energy, water use, and solid waste sources were used.

4.1.3 Localized Significance Threshold Methodology

As part of the SCAQMD's environmental justice program, more attention has been focused on localized air quality effects. In addition to the California Environmental Quality Act (CEQA) significance thresholds for mass daily emissions and regional conditions, the SCAQMD has established thresholds for ambient air quality (Table 11, *SCAQMD Thresholds of Significance*) to address localized impacts. Also, while

regional impact analysis is based on attaining or maintaining regional emissions standards, localized impact analysis compares the concentration of a pollutant at a receptor site to a health-based standard.

SCAQMD staff then developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard; they are developed based on the ambient concentrations of that pollutant for each SRA (SCAQMD 2009). The LST methodology translates the concentration standards into emissions thresholds that are a function of project site area, source to receptor distance, and the location within the SCAB. The LST methodology is recommended to be limited to projects of 5 acres or less and to avoid the need for complex dispersion modeling. For projects that exceed 5 acres, the 5-acre LST look-up values can be used as a screening tool to determine which pollutants require detailed analysis. This approach is conservative as it assumes that all on-site emissions would occur within a five-acre area resulting in inflated potential localized impacts (i.e., more pollutant emissions occurring within a smaller area and within closer proximity to potential sensitive receptors). If a project exceeds the LST look-up values, then the SCAQMD recommends that project-specific localized air quality modeling be performed.

For construction emissions, the LST look-up values are determined using the maximum area disturbed per day rather than the size of the project site. The maximum area disturbed per day was determined for the construction phase resulting in the maximum pollutant emissions in accordance with the methodology in the SCAQMD's *Fact Sheet for Applying CalEEMod to LSTs* (n.d.). While the maximum emissions of PM_{10} and $PM_{2.5}$ occur during the site preparation phase, the maximum emissions of ROG, NO_X, and CO occur during the grading phase, and the grading phase utilizes more pieces of equipment than the site preparation phase. The maximum area disturbed during the grading phase was calculated using the total daily use of 8 hours for one grader, one rubber tired dozer, and two scrapers, as listed in Table 9. The maximum area disturbed per day during the grading phase would be 3 acres. Therefore, the LST values for allowable emissions for a 5-acre site during construction were used.

The City of Perris is located within SRA 24, Perris Valley. The closest off-site sensitive receptors to the Project are the numerous single-family residences that are located immediately adjacent to the Project site's western and eastern boundaries. The closest receptor distance on the mass rate LST look-up tables is 25 meters (82 feet). According to the SCAQMD's *Final Localized Significance Threshold Methodology,* projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters (SCAQMD 2008).

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

The following significance thresholds are based on Appendix G of the state CEQA Guidelines. A significant impact is identified if the Project would result in any of the following:

(1) Conflict with or obstruct implementation of the applicable air quality plan;

(2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard;

(3) Expose sensitive receptors to substantial pollutant concentrations; or

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

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SCAQMD has established significance thresholds to assess the regional and localized impacts of project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately represent the most current technical information and attainment status in the SCAB. Table 11, *SCAQMD Air Quality Significance Thresholds*, presents the most current significance thresholds, including regional daily thresholds for short-term construction and long-term operational emissions; maximum incremental cancer risk and hazard indices for TACs; and maximum ambient concentrations for exposure of sensitive receptors to localized pollutants. If the Project's criteria pollutant and precursor emissions are below the SCAQMD daily regional thresholds, the Project would not result in a cumulatively considerable net increase of any criteria pollutant. If the Project's emissions of criteria pollutants, precursors, and TACs result in localized concentrations and/or risk values below the SCAQMD thresholds, the Project's impacts to sensitive receptors would be less than significant.

Table 11
SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds (pounds per day)		
Pollutant	**Construction**	**Operation**
VOC	75	55
NO_X	100	55
CO	550	550
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_X	150	150
Lead	3	3
Toxic Air Contaminants		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Ambient Air Quality for Criteria Pollutants		
NO_2	1-hour average ≥ 0.18 ppm Annual average ≥ 0.03 ppm	
CO	1-hour average ≥ 20.0 ppm (state) 8-hour average ≥ 9.0 ppm (state/federal)	
PM_{10}	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation) Annual average ≥ 1.0 µg/m^3	
$PM_{2.5}$	24-hour average ≥ 10.4 µg/m^3 (construction) 24-hour average ≥ 2.5 µg/m^3 (operation)	
SO_2	24-hour average ≥ 25 µg/m^3	

Source: SCAQMD 2015
lbs/day: pounds per day; VOC: volatile organic compound; NO_X: nitrogen oxides; CO: carbon monoxide; PM_{10}: respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with a diameter of 2.5 microns or less; SO_X: sulfur oxides; TACs: toxic air contaminants; GHG: greenhouse gas emissions; MT/yr: metric tons per year; NO_2: nitrogen dioxide; ppm: parts per million; µg/m^3: micrograms per cubic meter

4.2.2 Greenhouse Gases

GHG impacts are the result of combined worldwide emissions over many years, and additional development would incrementally contribute to the significant adverse environmental impacts of global climate change. No single project could generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from past, present, and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts. Therefore, GHG emissions impacts are only evaluated cumulatively.

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact if it would:

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

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

There are no established federal, state, or local quantitative thresholds applicable to the Project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, the SCAQMD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures. For the proposed Project, the most appropriate screening threshold for determining GHG emissions is the SCAQMD proposed Tier 3 screening threshold (SCAQMD 2010); therefore, a significant impact would occur if the proposed Project would exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 MT CO_2e per year.

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed Project related to the air pollutant emissions. Project-level air quality modeling was completed as part of this analysis. Complete modeling results are included as Appendix A to this report.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, economy, community development, and environment. With regard to air quality planning, SCAG has prepared the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), a long-range transportation plan that uses growth forecasts to project trends over a 20-year period to identify regional transportation strategies to address mobility needs. These growth forecasts form the basis for the land use and transportation control portions of the AQMP. These documents are utilized in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RTP/SCS and AQMP are based, in part, on projections originating with County and City General Plans.[2]

The two principal criteria for determining conformance to the AQMP are:

1. Whether the Project would result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of air quality standards and

2. Whether the Project would exceed the assumptions in the AQMP.

With respect to the first criterion, the analyses presented in Sections 5.2 through 5.4, below, demonstrate that the Project would not generate short-term or long-term emissions that could potentially cause an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of air quality standards. With respect to the second criterion, the Project site and surrounding areas have a land use designation of Single Family Residential (R-6,000) in the City of Perris General Plan and are zoned as Mobile Home Subdivision (R-5). The Project proposes a public park, which does not conflict with the Single Family Residential land use designation or the Mobile Home Subdivision zoning. The Land Use Element of the City of Perris General

[2] SCAG serves as the federally designated MPO for the Southern California region.

Plan specifically states that the region, categorized as Planning Area 7: Westside Residential, is in need of active parkland and sports fields for use by residents. As such, implementation of the proposed Project would align with the goals in the General Plan. In addition, as a public park in an existing neighborhood, the proposed Project is not anticipated to generate population growth in the community. Based on these considerations, the Project would not exceed the projections of the City's General Plan; the same growth projections are used in the RTP/SCS and AQMP. Therefore, the Project would not obstruct implementation of the AQMP, and the impact would be less than significant.

5.2 CUMULATIVELY CONSIDERABLE NET INCREASE OF NONATTAINMENT CRITERIA POLLUTANTS

The Project would generate criteria pollutants and precursors in the short-term during construction and the long-term during operation. To determine whether the Project's emissions would result a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment, or contribute substantially to a projected air quality violation, the Project's emissions were evaluated based on the quantitative emission thresholds established by the SCAQMD (as shown in Table 11).

5.2.1 Construction Emissions

Construction emissions associated with implementing the Project were estimated using CalEEMod, as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0 and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for Project construction are shown in Table 12, *Maximum Daily Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the SCAQMD thresholds.

Table 12
MAXIMUM DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds/day)					
	ROG	NO_X	CO	SO_2	PM_{10}[1]	$PM_{2.5}$[1]
Site Preparation	4.2	42.5	22.1	<0.1	10.5	6.5
Grading	4.8	59.8	34.0	0.1	7.1	3.9
Building Construction	4.6	36.5	33.4	0.1	6.7	2.6
Paving	1.3	13.0	15.1	<0.1	0.8	0.7
Architectural Coating	0.6	1.8	4.2	<0.1	1.0	0.3
Maximum Daily Emissions	**4.8**	**59.8**	**34.0**	**0.1**	**10.5**	**6.5**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod

[1] Estimated emissions account for application of water on all unpaved roads and disturbed surface two times per day, 12% soil moisture content, and on-site speed limit of 15 mph on unpaved surfaces.

ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10}: respirable particulate matter 10 microns or less in diameter; $PM_{2.5}$: fine particulate matter 2.5 microns or less in diameter

As shown in Table 12, emissions of all criteria pollutants related to construction of the proposed park would be below the SCAQMD significance thresholds. Therefore, the Project construction would not result in a short-term regional cumulatively considerable net increase of any criteria pollutant criteria pollutant emissions, and the impact would be less than significant.

5.2.2 Operational Emissions

Operational emissions associated with implementing the Project were estimated using CalEEMod and the defaults and assumptions as described in Section 4.1.2. Operational emission calculations and model outputs are provided in Appendix A. Table 13, *Maximum Daily Operational Emissions*, presents the summary of operational emissions for the Project.

Table 13
MAXIMUM DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)[1]					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	0.7	6.1	8.3	<0.1	2.8	0.8
Total Daily Emissions	**0.8**	**6.1**	**8.3**	**<0.1**	**2.8**	**0.8**
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)

[1] Totals may not sum due to rounding.

ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; PM_{10}: respirable particulate matter 10 microns or less in diameter; $PM_{2.5}$: fine particulate matter 2.5 microns or less in diameter

As shown in Table 13, emissions of all criteria pollutants related to operation of the proposed park would be below the SCAQMD significance thresholds. Therefore, long-term Project operation would not result in a regional cumulatively considerable net increase of any criteria pollutant criteria pollutant emissions, and the impact would be less than significant.

5.3 IMPACTS TO SENSITIVE RECEPTORS

5.3.1 Construction Activities

5.3.1.1 Criteria Pollutants

The localized effects from the on-site portion of daily construction emissions were evaluated at sensitive receptor locations potentially impacted by the Project according to the SCAQMD's LST method, described above in Section 4.1.3. Consistent with the LST guidelines, when quantifying mass emissions for localized analysis, only emissions that occur on-site are considered. Emissions related to off-site delivery/haul truck activity and construction worker trips are not considered in the evaluation of construction-related localized impacts, as these do not contribute to emissions generated on a project site. As detailed in Section 4.1.3, the LSTs being applied to the Project are based on SRA 24, Perris Valley, receptors located within 25 meters, and a disturbed area of 5 acres. As shown in Table 14, *Maximum Localized Daily Construction Emissions*, localized emissions would not exceed the SCAQMD LSTs.

Therefore, Project construction would not expose sensitive receptors to substantial criteria pollutant concentrations, and impacts would be less than significant.

Table 14
MAXIMUM LOCALIZED DAILY CONSTRUCTION EMISSIONS

Phase	Pollutant Emissions (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation	42.4	21.5	10.3	6.5
Grading	50.2	32.0	6.1	3.6
Building Construction	19.2	16.8	1.1	1.1
Paving	12.9	14.7	0.7	0.6
Architectural Coating	1.5	1.8	0.1	0.1
Maximum Daily Emissions	**50.2**	**32.0**	**10.3**	**6.5**
SCAQMD LST Thresholds	*270*	*1,577*	*13*	*8*
Significant Impact?	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A); SCAQMD 2009
NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10}: respirable particulate matter 10 microns or less in diameter; $PM_{2.5}$: fine particulate matter 2.5 microns or less in diameter

5.3.1.2 Toxic Air Contaminants

The greatest potential for TAC emissions during construction would be related to DPM associated with heavy equipment operations during earth-moving activities. The SCAQMD does not consider diesel-related cancer risks from construction equipment to be an issue due to the short-term nature of construction activities. Individual construction activities associated with the proposed Project would be transitory and sporadic across the large site, and it is unlikely that heavy equipment would operate adjacent to any one receptor for an extended period of time. The entirety of construction would be short term in nature—lasting approximately 15 months, with the heaviest use of diesel equipment (during the site preparation and grading phases) lasting approximately 2 months. The amount of DPM to which the receptors could be exposed, which is a function of concentration and duration of exposure, is the primary factor used to determine health risk. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents) and are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. Due to the variable and sporadic nature of construction activity and the anticipated short construction schedule, TAC emissions from the Project's construction activity would not expose sensitive receptors to substantial pollutant concentrations. As such, Project-related TAC emission impacts during construction would not be significant and no mitigation is required.

5.3.2 Operational Activities

5.3.2.1 CO Hotspots

CO concentration is a direct function of motor vehicle activity (e.g., idling time and traffic flow conditions) particularly during peak commute hours and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses such as residential areas, schools, and hospitals. As a result, the SCAQMD recommends analysis of CO emissions at the local and regional levels.

A CO hotspot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near intersections. If a project increases average delay at signalized intersections operating at Level of Service (LOS) E or F or causes an intersection operating at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required.

The Focused Traffic Assessment prepared for the proposed Project determined that due to the relatively low traffic volume (below 50 peak hour trips) associated with Project operations, analysis of potential off-site traffic impacts was not required (Urban Crossroads 2019). As such, it can be concluded that Project-generated traffic would not increase the average delay at signalized intersections operating at LOS E of F or cause an intersection operating at LOS D or better without the Project to operate at LOS E or F with the Project. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations as a result of CO hotspots, and the impact would be less than significant.

5.3.2.2 Toxic Air Contaminants

Long-term operation of the Project would result in some emissions of DPM from vehicles traveling to and from the Project site. However, the Project would not require the regular use of heavy or medium diesel-powered trucks (other than for occasional deliveries and waste collection) and the mix of vehicles traveling to and from the Project site would primarily be light duty autos and trucks typical of the region. Therefore, the Project would not result in significant localized concentrations of DPM. As a recreational park, the proposed Project in not anticipated to generate other long-term operational TACs. Therefore, long-term operation of the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations and the impact would be less than significant.

5.4 ODORS AND OTHER EMISSIONS

The State of California Health and Safety Code Sections 41700 and 41705, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The Project could produce odors during proposed construction activities resulting from construction equipment exhaust, application of asphalt, and/or the application of architectural coatings. However, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, odors emitted during construction would be temporary, short-term, and intermittent in nature, and would cease upon the completion of the respective phase of construction.

The CARB's Air Quality and Land Use Handbook includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations (CARB 2005). The proposed Project would include a recreational park, which is not be anticipated to generate substantial odors. Therefore, the Project would not result in emissions leading to odors that would adversely affect a substantial number of people, and the impacts would be less than significant.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the proposed Project related to the generation of GHG emissions. Complete modeling results are included as Appendix A of this report.

6.1 GREENHOUSE GAS EMISSIONS

6.1.1 Construction Emissions

Project construction GHG emissions were estimated using CalEEMod, as described in Section 4.1.1. Project-specific input was based on general information provided in Section 1.0 and default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to construction of the Project would be temporary. As shown in Table 15, *Estimated Constriction GHG Emissions*, total GHG emissions associated with construction of the Project are estimated at 1,361.8 MT CO_2e. For construction emissions, SCAQMD recommends that the emissions be amortized (i.e., averaged) over 30 years and added to operational emissions. Amortized over 30 years, the proposed construction activities would contribute approximately 45.4 MT CO_2e per year.

Table 15
ESTIMATED CONSTRUCTION GHG EMISSIONS

Year	Emissions (MT CO_2e)
2020	380.6
2021	981.2
Total	1,361.8
Amortized Construction Emissions	45.4

Source: CalEEMod (output data is provided in Appendix A).
[1] Construction emissions amortized over 30 years.
MT = metric tons; CO_2e = carbon dioxide equivalent

6.1.2 Operational Emissions

Operational sources of GHG emissions include: (1) area sources (landscaping equipment); (2) energy use; (3) vehicular use; (4) solid waste generation; and (5) water conveyance and treatment.

6.1.2.1 Area Source Emissions

Project area sources include emissions from use of consumer products, landscaping equipment, and VOC emissions from repainting buildings. GHG emissions associated with area sources were estimated using the CalEEMod default values for the Project. The annual GHG emissions from area sources are estimated to be less than 0.1 MT CO_2e per year.

6.1.2.2 Energy Emissions

Projects typically use energy in the forms of electricity and natural gas. Electricity generation usually entails the combustion of fossil fuels, including natural gas and coal, which is then stored and transported to end users. A facility's electricity use in thus associated with the off-site or indirect emission of GHGs at the source of the electricity generation (power plant). Natural gas emissions are generated on site. The Project may use energy for lighting within the park; however, such energy use

would be minimal. The Project is not anticipated to use natural gas. The annual GHG emissions from energy consumption are estimated to be less than 0.1 MT CO_2e per year.

6.1.2.3 Vehicular (Mobile) Sources

Mobile source emissions are associated with project-related vehicle trip generation and trip length. Based on the Focused Traffic Assessment prepared for the Project, the Project is estimated to generate 90 daily trips on weekdays and 450 daily trips on weekends (Urban Crossroads 2019), resulting in 554,831 annual VMT. The annual GHG emissions from vehicular sources are estimated to be 265.2 MT CO_2e.

6.1.2.4 Solid Waste Sources

Solid waste generated by the Project would also contribute to GHG emissions. Treatment and disposal of solid waste produces methane. For the Project calculations, a countywide average waste disposal rate was used and was obtained from the California Department of Resources Recycling and Recovery (CalRecycle). This analysis assumes that the countywide average already accounts for the 50 percent diversion requirement from AB 75. In 2012, the State legislature enacted AB 341, increasing the diversion target to 75 percent statewide by 2020. Therefore, a 25 percent diversion rate over the countywide average was applied to the Project in this analysis. Using CalEEMod defaults and a 25 percent operational solid waste diversion rate in accordance with AB 341 standards, the Project is estimated to generate 1.89 tons of solid waste per year. The annual GHG emissions from solid waste sources are estimated to be 0.7 MT CO_2e.

6.1.2.5 Water Sources

Water-related GHG emissions are from the conveyance and treatment of water. The California Energy Commission's 2006 Refining Estimates of Water-Related Energy Use in California defines average energy values for water in southern California. These values are used in CalEEMod to establish default water-related emission factors. Using CalEEMod defaults and a 20 percent reduction in potable water use and wastewater generation in accordance with CALGreen, the Project's estimated annual GHG emissions related to water treatment and conveyance is 74.5 MT CO_2e.

6.1.3 Other GHG Emissions

Ozone is also a GHG; however, unlike other GHGs, ozone in the troposphere is relatively short lived and therefore is not global in nature. According to CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and VOCs) to global warming (CARB 2006). Therefore, it is assumed that emission of ozone precursors associated with the Project would not significantly contribute to climate change.

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed that the Project would not generate emissions of this GHG. PFCs and sulfur hexafluoride are typically used in heavy-duty industrial manufacturing applications. The proposed Project would consist of a community park and would not include heavy-duty industrial manufacturing applications. Therefore, it is not anticipated that the Project would contribute significant emissions of these GHGs.

6.1.4 Summary

Table 16, *Estimated Annual Operational Emissions,* includes the estimated total annual GHG emissions for the Project. The emissions include the amortized annual construction emissions anticipated for the Project. Appendix A contains the CalEEMod output files for the Project. As shown in Table 16, the Project would result in annual GHG emissions of 385.8 MT CO_2e. This value is less than the SCAQMD's 3,000 MT CO_2e per year interim threshold. Therefore, GHG emissions during Project operation, including amortized construction emissions, would be less than significant.

Table 16
ESTIMATED ANNUAL OPERATIONAL GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e per year)
	2021
Area Sources	<0.1
Energy Sources	<0.1
Vehicular (Mobile) Sources	265.2
Solid Waste Sources	0.7
Water Sources	74.5
Operational Subtotal	*340.4*
Construction (Annualized over 30 years)	45.4
Total Emissions[1]	**385.8**
SCAQMD	3,000
Exceed Threshold	***No***

Source: CalEEMod output data is provided in Appendix A
[1] Totals may not sum due to rounding.
MT = metric tons; CO_2e = carbon dioxide equivalent

6.2 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. Because the Project would become operational after 2020, the Project aims to reach the quantitative goals set by SB 32. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed Project does not conflict with those plans and regulations.

As previously discussed, neither the WRCOG Subregional CAP nor the City's CAP have GHG emission thresholds and are not a qualified GHG reduction plan for the purposes of streamlining the analysis of GHG emissions under CEQA. The City, therefore, utilizes the significance thresholds set forth by the SCAQMD. The SCAQMD applies a screening threshold for Tier 3 of 3,000 MT of CO_2e per year. The proposed Project's increase in GHG emissions would be less than the SCAQMD's screening threshold. Implementation of the proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and the impact would be less than significant impact.

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8.0 LIST OF PREPARERS

Hunter Stapp	Air Quality Analyst
Victor Ortiz	Senior Air Quality Specialist
Kara Palm	Project Manager

Appendix A

CalEEMod Output

COP-04 Enchanted Hills Park

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	22.00	Acre	22.00	958,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Default phasing with Building Construction phase reduced based on limited structures to be provided.

Grading -

Vehicle Trips - Urban Crossroads 2019

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

COP-04 Enchanted Hills Park - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	370.00	238.00
tblConstructionPhase	PhaseEndDate	6/27/2022	11/25/2021
tblConstructionPhase	PhaseEndDate	5/2/2022	9/30/2021
tblConstructionPhase	PhaseEndDate	11/30/2020	11/2/2020
tblConstructionPhase	PhaseEndDate	5/30/2022	10/28/2021
tblConstructionPhase	PhaseEndDate	10/12/2020	9/14/2020
tblConstructionPhase	PhaseStartDate	5/31/2022	10/29/2021
tblConstructionPhase	PhaseStartDate	12/1/2020	11/3/2020
tblConstructionPhase	PhaseStartDate	10/13/2020	9/15/2020
tblConstructionPhase	PhaseStartDate	5/3/2022	10/1/2021
tblConstructionPhase	PhaseStartDate	9/29/2020	9/1/2020
tblGrading	MaterialExported	0.00	11,200.00
tblVehicleTrips	ST_TR	22.75	20.45
tblVehicleTrips	SU_TR	16.74	20.45
tblVehicleTrips	WD_TR	1.89	4.09

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.7662	59.8141	33.9794	0.1063	18.2675	2.2059	20.4661	9.9840	2.0305	12.0068	0.0000	10,686.9423	10,686.9423	2.1581	0.0000	10,714.0023
2021	4.1605	32.9585	31.6385	0.1046	5.4987	1.0136	6.5123	1.4811	0.9529	2.4340	0.0000	10,521.9215	10,521.9215	1.0467	0.0000	10,548.0895
Maximum	**4.7662**	**59.8141**	**33.9794**	**0.1063**	**18.2675**	**2.2059**	**20.4661**	**9.9840**	**2.0305**	**12.0068**	**0.0000**	**10,686.9423**	**10,686.9423**	**2.1581**	**0.0000**	**10,714.0023**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.7662	59.8141	33.9794	0.1063	8.3310	2.2059	10.5297	4.5222	2.0305	6.5449	0.0000	10,686.9423	10,686.9423	2.1581	0.0000	10,714.0023
2021	4.1605	32.9585	31.6385	0.1046	5.4987	1.0136	6.5123	1.4811	0.9529	2.4340	0.0000	10,521.9215	10,521.9215	1.0467	0.0000	10,548.0895
Maximum	**4.7662**	**59.8141**	**33.9794**	**0.1063**	**8.3310**	**2.2059**	**10.5297**	**4.5222**	**2.0305**	**6.5449**	**0.0000**	**10,686.9423**	**10,686.9423**	**2.1581**	**0.0000**	**10,714.0023**

	ROG	NOx	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**	**41.81**	**0.00**	**36.83**	**47.64**	**0.00**	**37.82**	**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	0.0496	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.1300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.7276	6.0512	8.2816	0.0358	2.7611	0.0270	2.7881	0.7388	0.0253	0.7641		3,656.2599	3,656.2599	0.2107		3,661.5266
Total	**0.7772**	**6.0513**	**8.2839**	**0.0358**	**2.7611**	**0.0270**	**2.7881**	**0.7388**	**0.0254**	**0.7641**		**3,656.2647**	**3,656.2647**	**0.2107**	**0.0000**	**3,661.5318**

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	0.0496	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.1300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.7276	6.0512	8.2816	0.0358	2.7611	0.0270	2.7881	0.7388	0.0253	0.7641		3,656.2599	3,656.2599	0.2107		3,661.5266
Total	**0.7772**	**6.0513**	**8.2839**	**0.0358**	**2.7611**	**0.0270**	**2.7881**	**0.7388**	**0.0254**	**0.7641**		**3,656.2647**	**3,656.2647**	**0.2107**	**0.0000**	**3,661.5318**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2020	9/14/2020	5	10	
2	Grading	Grading	9/15/2020	11/2/2020	5	35	
3	Building Construction	Building Construction	11/3/2020	9/30/2021	5	238	
4	Paving	Paving	10/1/2021	10/28/2021	5	20	
5	Architectural Coating	Architectural Coating	10/29/2021	11/25/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

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

OffRoad Equipment

COP-04 Enchanted Hills Park - Riverside-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	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
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	2	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
Grading	Scrapers	2	8.00	367	0.48
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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	402.00	157.00	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	80.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

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

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0897	0.0560	0.5871	1.7900e-003	0.2012	1.2200e-003	0.2024	0.0534	1.1200e-003	0.0545		177.8824	177.8824	4.4200e-003		177.9929
Total	**0.0897**	**0.0560**	**0.5871**	**1.7900e-003**	**0.2012**	**1.2200e-003**	**0.2024**	**0.0534**	**1.1200e-003**	**0.0545**		**177.8824**	**177.8824**	**4.4200e-003**		**177.9929**

Mitigated Construction On-Site

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

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0897	0.0560	0.5871	1.7900e-003	0.2012	1.2200e-003	0.2024	0.0534	1.1200e-003	0.0545		177.8824	177.8824	4.4200e-003		177.9929
Total	**0.0897**	**0.0560**	**0.5871**	**1.7900e-003**	**0.2012**	**1.2200e-003**	**0.2024**	**0.0534**	**1.1200e-003**	**0.0545**		**177.8824**	**177.8824**	**4.4200e-003**		**177.9929**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.7139	0.0000	8.7139	3.6026	0.0000	3.6026			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.7139**	**2.1739**	**10.8878**	**3.6026**	**2.0000**	**5.6026**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2164	9.5543	1.3687	0.0297	0.6998	0.0306	0.7304	0.1918	0.0293	0.2211		3,150.2313	3,150.2313	0.2108		3,155.5003
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	0.0997	0.0623	0.6524	1.9800e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605		197.6472	197.6472	4.9100e-003		197.7699
Total	**0.3161**	**9.6165**	**2.0211**	**0.0317**	**0.9233**	**0.0320**	**0.9553**	**0.2511**	**0.0305**	**0.2816**		**3,347.8784**	**3,347.8784**	**0.2157**		**3,353.2702**

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					3.9212	0.0000	3.9212	1.6212	0.0000	1.6212			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.9212**	**2.1739**	**6.0951**	**1.6212**	**2.0000**	**3.6212**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2164	9.5543	1.3687	0.0297	0.6998	0.0306	0.7304	0.1918	0.0293	0.2211		3,150.2313	3,150.2313	0.2108		3,155.5003
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	0.0997	0.0623	0.6524	1.9800e-003	0.2236	1.3500e-003	0.2249	0.0593	1.2500e-003	0.0605		197.6472	197.6472	4.9100e-003		197.7699
Total	**0.3161**	**9.6165**	**2.0211**	**0.0317**	**0.9233**	**0.0320**	**0.9553**	**0.2511**	**0.0305**	**0.2816**		**3,347.8784**	**3,347.8784**	**0.2157**		**3,353.2702**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

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

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4616	16.0694	3.4603	0.0395	1.0054	0.0930	1.0983	0.2895	0.0889	0.3784		4,161.1714	4,161.1714	0.3609		4,170.1931
Worker	2.0034	1.2516	13.1122	0.0399	4.4934	0.0272	4.5206	1.1917	0.0251	1.2167		3,972.7079	3,972.7079	0.0987		3,975.1747
Total	**2.4649**	**17.3210**	**16.5725**	**0.0794**	**5.4988**	**0.1202**	**5.6190**	**1.4811**	**0.1140**	**1.5951**		**8,133.8793**	**8,133.8793**	**0.4595**		**8,145.3678**

Mitigated Construction On-Site

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

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4616	16.0694	3.4603	0.0395	1.0054	0.0930	1.0983	0.2895	0.0889	0.3784		4,161.1714	4,161.1714	0.3609		4,170.1931
Worker	2.0034	1.2516	13.1122	0.0399	4.4934	0.0272	4.5206	1.1917	0.0251	1.2167		3,972.7079	3,972.7079	0.0987		3,975.1747
Total	**2.4649**	**17.3210**	**16.5725**	**0.0794**	**5.4988**	**0.1202**	**5.6190**	**1.4811**	**0.1140**	**1.5951**		**8,133.8793**	**8,133.8793**	**0.4595**		**8,145.3678**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

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

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3893	14.4035	3.0664	0.0392	1.0053	0.0285	1.0338	0.2895	0.0272	0.3167		4,128.6795	4,128.6795	0.3420		4,137.2289
Worker	1.8703	1.1229	11.9969	0.0385	4.4934	0.0265	4.5199	1.1917	0.0244	1.2161		3,839.8781	3,839.8781	0.0887		3,842.0964
Total	**2.2596**	**15.5264**	**15.0633**	**0.0777**	**5.4987**	**0.0550**	**5.5537**	**1.4811**	**0.0516**	**1.5327**		**7,968.5576**	**7,968.5576**	**0.4307**		**7,979.3253**

Mitigated Construction On-Site

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

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3893	14.4035	3.0664	0.0392	1.0053	0.0285	1.0338	0.2895	0.0272	0.3167		4,128.6795	4,128.6795	0.3420		4,137.2289
Worker	1.8703	1.1229	11.9969	0.0385	4.4934	0.0265	4.5199	1.1917	0.0244	1.2161		3,839.8781	3,839.8781	0.0887		3,842.0964
Total	**2.2596**	**15.5264**	**15.0633**	**0.0777**	**5.4987**	**0.0550**	**5.5537**	**1.4811**	**0.0516**	**1.5327**		**7,968.5576**	**7,968.5576**	**0.4307**		**7,979.3253**

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**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	**0.0698**	**0.0419**	**0.4476**	**1.4400e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**143.2790**	**143.2790**	**3.3100e-003**		**143.3618**

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**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0698	0.0419	0.4476	1.4400e-003	0.1677	9.9000e-004	0.1687	0.0445	9.1000e-004	0.0454		143.2790	143.2790	3.3100e-003		143.3618
Total	**0.0698**	**0.0419**	**0.4476**	**1.4400e-003**	**0.1677**	**9.9000e-004**	**0.1687**	**0.0445**	**9.1000e-004**	**0.0454**		**143.2790**	**143.2790**	**3.3100e-003**		**143.3618**

3.6 Architectural Coating - 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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**0.2189**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.3722	0.2235	2.3874	7.6700e-003	0.8942	5.2700e-003	0.8995	0.2372	4.8500e-003	0.2420		764.1548	764.1548	0.0177		764.5963
Total	**0.3722**	**0.2235**	**2.3874**	**7.6700e-003**	**0.8942**	**5.2700e-003**	**0.8995**	**0.2372**	**4.8500e-003**	**0.2420**		**764.1548**	**764.1548**	**0.0177**		**764.5963**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**0.2189**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.3722	0.2235	2.3874	7.6700e-003	0.8942	5.2700e-003	0.8995	0.2372	4.8500e-003	0.2420		764.1548	764.1548	0.0177		764.5963
Total	**0.3722**	**0.2235**	**2.3874**	**7.6700e-003**	**0.8942**	**5.2700e-003**	**0.8995**	**0.2372**	**4.8500e-003**	**0.2420**		**764.1548**	**764.1548**	**0.0177**		**764.5963**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7276	6.0512	8.2816	0.0358	2.7611	0.0270	2.7881	0.7388	0.0253	0.7641		3,656.2599	3,656.2599	0.2107		3,661.5266
Unmitigated	0.7276	6.0512	8.2816	0.0358	2.7611	0.0270	2.7881	0.7388	0.0253	0.7641		3,656.2599	3,656.2599	0.2107		3,661.5266

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	89.98	449.90	449.90	554,831	554,831
Total	89.98	449.90	449.90	554,831	554,831

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

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					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0496	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.1300e-003
Unmitigated	0.0496	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.1300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0494					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.1300e-003
Total	**0.0496**	**2.0000e-005**	**2.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.8100e-003**	**4.8100e-003**	**1.0000e-005**		**5.1300e-003**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0494					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.1000e-004	2.0000e-005	2.2500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.8100e-003	4.8100e-003	1.0000e-005		5.1300e-003
Total	**0.0496**	**2.0000e-005**	**2.2500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.8100e-003**	**4.8100e-003**	**1.0000e-005**		**5.1300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

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

COP-04 Enchanted Hills Park

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	22.00	Acre	22.00	958,320.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Default phasing with Building Construction phase reduced based on limited structures to be provided.

Grading -

Vehicle Trips - Urban Crossroads 2019

Construction Off-road Equipment Mitigation -

Water Mitigation -

Waste Mitigation -

COP-04 Enchanted Hills Park - Riverside-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	370.00	238.00
tblConstructionPhase	PhaseEndDate	6/27/2022	11/25/2021
tblConstructionPhase	PhaseEndDate	5/2/2022	9/30/2021
tblConstructionPhase	PhaseEndDate	11/30/2020	11/2/2020
tblConstructionPhase	PhaseEndDate	5/30/2022	10/28/2021
tblConstructionPhase	PhaseEndDate	10/12/2020	9/14/2020
tblConstructionPhase	PhaseStartDate	5/31/2022	10/29/2021
tblConstructionPhase	PhaseStartDate	12/1/2020	11/3/2020
tblConstructionPhase	PhaseStartDate	10/13/2020	9/15/2020
tblConstructionPhase	PhaseStartDate	5/3/2022	10/1/2021
tblConstructionPhase	PhaseStartDate	9/29/2020	9/1/2020
tblGrading	MaterialExported	0.00	11,200.00
tblVehicleTrips	ST_TR	22.75	20.45
tblVehicleTrips	SU_TR	16.74	20.45
tblVehicleTrips	WD_TR	1.89	4.09

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1989	2.0531	1.4321	4.1700e-003	0.3761	0.0762	0.4522	0.1487	0.0707	0.2193	0.0000	379.1415	379.1415	0.0603	0.0000	380.6490
2021	0.4087	3.3874	3.3192	0.0107	0.5379	0.1066	0.6445	0.1451	0.1001	0.2452	0.0000	978.7124	978.7124	0.0979	0.0000	981.1609
Maximum	**0.4087**	**3.3874**	**3.3192**	**0.0107**	**0.5379**	**0.1066**	**0.6445**	**0.1487**	**0.1001**	**0.2452**	**0.0000**	**978.7124**	**978.7124**	**0.0979**	**0.0000**	**981.1609**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1989	2.0531	1.4321	4.1700e-003	0.2425	0.0762	0.3187	0.0867	0.0707	0.1574	0.0000	379.1414	379.1414	0.0603	0.0000	380.6488
2021	0.4087	3.3874	3.3192	0.0107	0.5379	0.1066	0.6445	0.1451	0.1001	0.2452	0.0000	978.7121	978.7121	0.0979	0.0000	981.1606
Maximum	**0.4087**	**3.3874**	**3.3192**	**0.0107**	**0.5379**	**0.1066**	**0.6445**	**0.1451**	**0.1001**	**0.2452**	**0.0000**	**978.7121**	**978.7121**	**0.0979**	**0.0000**	**981.1606**

	ROG	NOx	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**	**14.61**	**0.00**	**12.18**	**21.10**	**0.00**	**13.35**	**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	9-1-2020	11-30-2020	1.7737	1.7737
2	12-1-2020	2-28-2021	1.2371	1.2371
3	3-1-2021	5-31-2021	1.2218	1.2218
4	6-1-2021	8-31-2021	1.2229	1.2229
5	9-1-2021	9-30-2021	0.3988	0.3988
		Highest	1.7737	1.7737

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.0400e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.5000e-004	5.5000e-004	0.0000	0.0000	5.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0568	0.4804	0.6636	2.8600e-003	0.2119	2.0900e-003	0.2139	0.0568	1.9600e-003	0.0587	0.0000	264.8292	264.8292	0.0144	0.0000	265.1901
Waste						0.0000	0.0000		0.0000	0.0000	0.3837	0.0000	0.3837	0.0227	0.0000	0.9505
Water						0.0000	0.0000		0.0000	0.0000	0.0000	92.7895	92.7895	3.8300e-003	7.9000e-004	93.1215
Total	**0.0658**	**0.4804**	**0.6639**	**2.8600e-003**	**0.2119**	**2.0900e-003**	**0.2139**	**0.0568**	**1.9600e-003**	**0.0587**	**0.3837**	**357.6193**	**358.0029**	**0.0409**	**7.9000e-004**	**359.2627**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.0400e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.5000e-004	5.5000e-004	0.0000	0.0000	5.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0568	0.4804	0.6636	2.8600e-003	0.2119	2.0900e-003	0.2139	0.0568	1.9600e-003	0.0587	0.0000	264.8292	264.8292	0.0144	0.0000	265.1901
Waste						0.0000	0.0000		0.0000	0.0000	0.2877	0.0000	0.2877	0.0170	0.0000	0.7129
Water						0.0000	0.0000		0.0000	0.0000	0.0000	74.2316	74.2316	3.0600e-003	6.3000e-004	74.4972
Total	**0.0658**	**0.4804**	**0.6639**	**2.8600e-003**	**0.2119**	**2.0900e-003**	**0.2139**	**0.0568**	**1.9600e-003**	**0.0587**	**0.2877**	**339.0614**	**339.3491**	**0.0345**	**6.3000e-004**	**340.4008**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**25.00**	**5.19**	**5.21**	**15.73**	**20.25**	**5.25**

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/1/2020	9/14/2020	5	10	
2	Grading	Grading	9/15/2020	11/2/2020	5	35	
3	Building Construction	Building Construction	11/3/2020	9/30/2021	5	238	
4	Paving	Paving	10/1/2021	10/28/2021	5	20	
5	Architectural Coating	Architectural Coating	10/29/2021	11/25/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

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

OffRoad Equipment

COP-04 Enchanted Hills Park - Riverside-South Coast County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	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
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	2	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
Grading	Scrapers	2	8.00	367	0.48
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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,400.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	402.00	157.00	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	80.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.2 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.9000e-004	3.0900e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8276	0.8276	2.0000e-005	0.0000	0.8282
Total	**4.1000e-004**	**2.9000e-004**	**3.0900e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8276**	**0.8276**	**2.0000e-005**	**0.0000**	**0.8282**

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					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0407**	**0.0110**	**0.0516**	**0.0223**	**0.0101**	**0.0325**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.2 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.9000e-004	3.0900e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8276	0.8276	2.0000e-005	0.0000	0.8282
Total	**4.1000e-004**	**2.9000e-004**	**3.0900e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8276**	**0.8276**	**2.0000e-005**	**0.0000**	**0.8282**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1525	0.0000	0.1525	0.0631	0.0000	0.0631	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0779	0.8785	0.5593	1.0900e-003		0.0380	0.0380		0.0350	0.0350	0.0000	95.3475	95.3475	0.0308	0.0000	96.1185
Total	**0.0779**	**0.8785**	**0.5593**	**1.0900e-003**	**0.1525**	**0.0380**	**0.1905**	**0.0631**	**0.0350**	**0.0981**	**0.0000**	**95.3475**	**95.3475**	**0.0308**	**0.0000**	**96.1185**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6800e-003	0.1697	0.0220	5.3000e-004	0.0121	5.3000e-004	0.0126	3.3100e-003	5.1000e-004	3.8200e-003	0.0000	50.7566	50.7566	3.1800e-003	0.0000	50.8361
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6100e-003	1.1300e-003	0.0120	4.0000e-005	3.8500e-003	2.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.2186	3.2186	8.0000e-005	0.0000	3.2206
Total	**5.2900e-003**	**0.1709**	**0.0340**	**5.7000e-004**	**0.0159**	**5.5000e-004**	**0.0165**	**4.3300e-003**	**5.3000e-004**	**4.8600e-003**	**0.0000**	**53.9752**	**53.9752**	**3.2600e-003**	**0.0000**	**54.0567**

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					0.0686	0.0000	0.0686	0.0284	0.0000	0.0284	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0779	0.8785	0.5593	1.0900e-003		0.0380	0.0380		0.0350	0.0350	0.0000	95.3474	95.3474	0.0308	0.0000	96.1183
Total	**0.0779**	**0.8785**	**0.5593**	**1.0900e-003**	**0.0686**	**0.0380**	**0.1067**	**0.0284**	**0.0350**	**0.0634**	**0.0000**	**95.3474**	**95.3474**	**0.0308**	**0.0000**	**96.1183**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.6800e-003	0.1697	0.0220	5.3000e-004	0.0121	5.3000e-004	0.0126	3.3100e-003	5.1000e-004	3.8200e-003	0.0000	50.7566	50.7566	3.1800e-003	0.0000	50.8361
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6100e-003	1.1300e-003	0.0120	4.0000e-005	3.8500e-003	2.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.2186	3.2186	8.0000e-005	0.0000	3.2206
Total	**5.2900e-003**	**0.1709**	**0.0340**	**5.7000e-004**	**0.0159**	**5.5000e-004**	**0.0165**	**4.3300e-003**	**5.3000e-004**	**4.8600e-003**	**0.0000**	**53.9752**	**53.9752**	**3.2600e-003**	**0.0000**	**54.0567**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0456	0.4125	0.3622	5.8000e-004		0.0240	0.0240		0.0226	0.0226	0.0000	49.7962	49.7962	0.0122	0.0000	50.0999
Total	**0.0456**	**0.4125**	**0.3622**	**5.8000e-004**		**0.0240**	**0.0240**		**0.0226**	**0.0226**	**0.0000**	**49.7962**	**49.7962**	**0.0122**	**0.0000**	**50.0999**

3.4 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.5900e-003	0.3511	0.0687	8.7000e-004	0.0213	1.9900e-003	0.0233	6.1500e-003	1.9000e-003	8.0500e-003	0.0000	82.9994	82.9994	6.6300e-003	0.0000	83.1653
Worker	0.0397	0.0278	0.2972	8.8000e-004	0.0950	5.8000e-004	0.0956	0.0252	5.4000e-004	0.0258	0.0000	79.4804	79.4804	1.9900e-003	0.0000	79.5301
Total	**0.0493**	**0.3789**	**0.3659**	**1.7500e-003**	**0.1163**	**2.5700e-003**	**0.1189**	**0.0314**	**2.4400e-003**	**0.0338**	**0.0000**	**162.4798**	**162.4798**	**8.6200e-003**	**0.0000**	**162.6954**

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	0.0456	0.4125	0.3622	5.8000e-004		0.0240	0.0240		0.0226	0.0226	0.0000	49.7961	49.7961	0.0122	0.0000	50.0998
Total	**0.0456**	**0.4125**	**0.3622**	**5.8000e-004**		**0.0240**	**0.0240**		**0.0226**	**0.0226**	**0.0000**	**49.7961**	**49.7961**	**0.0122**	**0.0000**	**50.0998**

3.4 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.5900e-003	0.3511	0.0687	8.7000e-004	0.0213	1.9900e-003	0.0233	6.1500e-003	1.9000e-003	8.0500e-003	0.0000	82.9994	82.9994	6.6300e-003	0.0000	83.1653
Worker	0.0397	0.0278	0.2972	8.8000e-004	0.0950	5.8000e-004	0.0956	0.0252	5.4000e-004	0.0258	0.0000	79.4804	79.4804	1.9900e-003	0.0000	79.5301
Total	**0.0493**	**0.3789**	**0.3659**	**1.7500e-003**	**0.1163**	**2.5700e-003**	**0.1189**	**0.0314**	**2.4400e-003**	**0.0338**	**0.0000**	**162.4798**	**162.4798**	**8.6200e-003**	**0.0000**	**162.6954**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1853	1.6996	1.6161	2.6200e-003		0.0935	0.0935		0.0879	0.0879	0.0000	225.8463	225.8463	0.0545	0.0000	227.2085
Total	**0.1853**	**1.6996**	**1.6161**	**2.6200e-003**		**0.0935**	**0.0935**		**0.0879**	**0.0879**	**0.0000**	**225.8463**	**225.8463**	**0.0545**	**0.0000**	**227.2085**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0365	1.4273	0.2746	3.9000e-003	0.0967	2.7300e-003	0.0994	0.0279	2.6100e-003	0.0305	0.0000	373.4620	373.4620	0.0285	0.0000	374.1742
Worker	0.1680	0.1132	1.2339	3.8500e-003	0.4308	2.5800e-003	0.4334	0.1144	2.3800e-003	0.1168	0.0000	348.3833	348.3833	8.1200e-003	0.0000	348.5862
Total	**0.2046**	**1.5406**	**1.5085**	**7.7500e-003**	**0.5275**	**5.3100e-003**	**0.5328**	**0.1423**	**4.9900e-003**	**0.1473**	**0.0000**	**721.8453**	**721.8453**	**0.0366**	**0.0000**	**722.7604**

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	0.1853	1.6996	1.6161	2.6200e-003		0.0935	0.0935		0.0879	0.0879	0.0000	225.8461	225.8461	0.0545	0.0000	227.2082
Total	**0.1853**	**1.6996**	**1.6161**	**2.6200e-003**		**0.0935**	**0.0935**		**0.0879**	**0.0879**	**0.0000**	**225.8461**	**225.8461**	**0.0545**	**0.0000**	**227.2082**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0365	1.4273	0.2746	3.9000e-003	0.0967	2.7300e-003	0.0994	0.0279	2.6100e-003	0.0305	0.0000	373.4620	373.4620	0.0285	0.0000	374.1742
Worker	0.1680	0.1132	1.2339	3.8500e-003	0.4308	2.5800e-003	0.4334	0.1144	2.3800e-003	0.1168	0.0000	348.3833	348.3833	8.1200e-003	0.0000	348.5862
Total	**0.2046**	**1.5406**	**1.5085**	**7.7500e-003**	**0.5275**	**5.3100e-003**	**0.5328**	**0.1423**	**4.9900e-003**	**0.1473**	**0.0000**	**721.8453**	**721.8453**	**0.0366**	**0.0000**	**722.7604**

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	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**

3.5 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	6.4000e-004	4.3000e-004	4.7200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3333	1.3333	3.0000e-005	0.0000	1.3341
Total	**6.4000e-004**	**4.3000e-004**	**4.7200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3333**	**1.3333**	**3.0000e-005**	**0.0000**	**1.3341**

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**

3.5 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	6.4000e-004	4.3000e-004	4.7200e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3333	1.3333	3.0000e-005	0.0000	1.3341
Total	**6.4000e-004**	**4.3000e-004**	**4.7200e-003**	**1.0000e-005**	**1.6500e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.3333**	**1.3333**	**3.0000e-005**	**0.0000**	**1.3341**

3.6 Architectural Coating - 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					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**2.1900e-003**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.6 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	3.4300e-003	2.3100e-003	0.0252	8.0000e-005	8.7900e-003	5.0000e-005	8.8500e-003	2.3300e-003	5.0000e-005	2.3800e-003	0.0000	7.1108	7.1108	1.7000e-004	0.0000	7.1149
Total	**3.4300e-003**	**2.3100e-003**	**0.0252**	**8.0000e-005**	**8.7900e-003**	**5.0000e-005**	**8.8500e-003**	**2.3300e-003**	**5.0000e-005**	**2.3800e-003**	**0.0000**	**7.1108**	**7.1108**	**1.7000e-004**	**0.0000**	**7.1149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**2.1900e-003**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

3.6 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	3.4300e-003	2.3100e-003	0.0252	8.0000e-005	8.7900e-003	5.0000e-005	8.8500e-003	2.3300e-003	5.0000e-005	2.3800e-003	0.0000	7.1108	7.1108	1.7000e-004	0.0000	7.1149
Total	**3.4300e-003**	**2.3100e-003**	**0.0252**	**8.0000e-005**	**8.7900e-003**	**5.0000e-005**	**8.8500e-003**	**2.3300e-003**	**5.0000e-005**	**2.3800e-003**	**0.0000**	**7.1108**	**7.1108**	**1.7000e-004**	**0.0000**	**7.1149**

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	0.0568	0.4804	0.6636	2.8600e-003	0.2119	2.0900e-003	0.2139	0.0568	1.9600e-003	0.0587	0.0000	264.8292	264.8292	0.0144	0.0000	265.1901
Unmitigated	0.0568	0.4804	0.6636	2.8600e-003	0.2119	2.0900e-003	0.2139	0.0568	1.9600e-003	0.0587	0.0000	264.8292	264.8292	0.0144	0.0000	265.1901

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	89.98	449.90	449.90	554,831	554,831
Total	89.98	449.90	449.90	554,831	554,831

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
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.542116	0.037578	0.185203	0.118503	0.016241	0.005141	0.017392	0.068695	0.001383	0.001183	0.004582	0.000945	0.001038

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.0400e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.5000e-004	5.5000e-004	0.0000	0.0000	5.8000e-004
Unmitigated	9.0400e-003	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.5000e-004	5.5000e-004	0.0000	0.0000	5.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.5000e-004	5.5000e-004	0.0000	0.0000	5.8000e-004
Total	**9.0400e-003**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.5000e-004**	**5.5000e-004**	**0.0000**	**0.0000**	**5.8000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	9.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.5000e-004	5.5000e-004	0.0000	0.0000	5.8000e-004
Total	**9.0400e-003**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.5000e-004**	**5.5000e-004**	**0.0000**	**0.0000**	**5.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	74.2316	3.0600e-003	6.3000e-004	74.4972
Unmitigated	92.7895	3.8300e-003	7.9000e-004	93.1215

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 26.2126	92.7895	3.8300e-003	7.9000e-004	93.1215
Total		**92.7895**	**3.8300e-003**	**7.9000e-004**	**93.1215**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 20.9701	74.2316	3.0600e-003	6.3000e-004	74.4972
Total		**74.2316**	**3.0600e-003**	**6.3000e-004**	**74.4972**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2877	0.0170	0.0000	0.7129
Unmitigated	0.3837	0.0227	0.0000	0.9505

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.89	0.3837	0.0227	0.0000	0.9505
Total		**0.3837**	**0.0227**	**0.0000**	**0.9505**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.4175	0.2877	0.0170	0.0000	0.7129
Total		**0.2877**	**0.0170**	**0.0000**	**0.7129**

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