



Tentative Tract Map No. 36647

AIR QUALITY IMPACT ANALYSIS

CITY OF PERRIS

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LIST OF ABBREVIATED TERMS

(1)	Reference
µg/m ³	Microgram per Cubic Meter
AADT	Annual Average Daily Trips
AQIA	Air Quality Impact Analysis
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BACM	Best Available Control Measures
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DPM	Diesel Particulate Matter
EPA	Environmental Protection Agency
LST	Localized Significance Threshold
NAAQS	National Ambient Air Quality Standards
NO ₂	Nitrogen Dioxide
NO _x	Oxides of Nitrogen
Pb	Lead
PM ₁₀	Particulate Matter 10 microns in diameter or less
PM _{2.5}	Particulate Matter 2.5 microns in diameter or less
PPM	Parts Per Million
Project	Tentative Tract Map No. 36647
ROG	Reactive Organic Gases
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SIPs	State Implementation Plans
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TIA	Traffic Impact Analysis

TOG	Total Organic Gases
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
VPH	Vehicles Per Hour

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EXECUTIVE SUMMARY

ES-1 CONSTRUCTION-SOURCE EMISSIONS

REGIONAL IMPACTS

For regional emissions, the Project would not exceed the numerical thresholds of significance established by the South Coast Air Quality Management District (SCAQMD) for emissions of oxides of nitrogen (NO_x). It should be noted that impacts without mitigation take credit for reductions achieved through standard regulatory requirements (Rule 403 and Rule 1113). Project construction-source emissions would not exceed the applicable SCAQMD thresholds of significance. Therefore, a less than significant impact would occur.

Localized Impacts

The Project would not exceed the SCAQMD's localized significance thresholds. Thus, a less than significant impact would occur for Project localized construction-source emissions.

Project construction-source emissions would not conflict with the applicable Air Quality Management Plan (AQMP).

ODORS

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less-than-significant.

ES-2 OPERATIONAL-SOURCE EMISSIONS

REGIONAL IMPACTS

For regional emissions, the Project would not exceed the numerical thresholds of significance established by the SCAQMD. Thus a less than significant impact would occur for Project-related operational-source emissions and no mitigation is required.

LOCALIZED IMPACTS

Due to lack of significant stationary source emissions, no long-term localized significance threshold analysis is needed. Therefore, sensitive receptors would not be adversely affected during Project construction, nor as the result of Project operations. The proposed Project would not result in a significant CO "hotspot" as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as discussed in Section 3.8, thus a less than significant impact to sensitive receptors during operational activity is expected.

ODORS

Substantial odor-generating sources include land uses such as agricultural activities, feedlots, wastewater treatment facilities, landfills or various heavy industrial uses. The Project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential sources of operational odors generated by the Project would include disposal of miscellaneous residential refuse. Moreover, SCAQMD Rule 402 acts to prevent occurrences of odor nuisances (1) . Consistent with City requirements, all Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with solid waste regulations. Potential operational-source odor impacts are therefore considered less-than-significant.

1 INTRODUCTION

This report presents the results of the air quality impact analysis (AQIA) prepared by Urban Crossroads, Inc., for the Tentative Tract Map No. 36647 (referred to as “Project”).

The purpose of this AQIA is to evaluate the potential impacts to air quality associated with construction and operation of the proposed Project and recommend measures to mitigate impacts considered potentially significant in comparison to established air district thresholds.

1.1 SITE LOCATION

The proposed Project site is located north of Ramona Expressway and west of Evans Road, in the City of Perris.

1.2 PROJECT DESCRIPTION

The Project consists of 90 single family residential dwelling units, as shown on Exhibit 1-A. For the purposes of this AQIA, it is assumed that the Project will be constructed and at full occupancy in 2020.

1.3 STANDARD REGULATORY REQUIREMENTS/BEST AVAILABLE CONTROL MEASURES (BACMs)

Measures listed below (or equivalent language) shall appear on all Project grading plans, construction specifications and bid documents, and the City shall ensure such language is incorporated prior to issuance of any development permits.

SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to: Rule 1113 (Architectural Coatings) (2); Rule 431.2 (Low Sulfur Fuel); Rule 403 (Fugitive Dust) (3); and Rule 1186 / 1186.1 (Street Sweepers) (4). It should be noted that BACMs are not mitigation as they are standard regulatory requirements.

BACM AQ-1

All applicable measures shall be incorporated into Project plans and specifications as implementation of Rule 403, which include but are not limited to (3):

- All clearing, grading, earth-moving, or excavation activities shall cease when winds exceed 25 mph per SCAQMD guidelines in order to limit fugitive dust emissions.
- The contractor shall ensure that all disturbed unpaved roads and disturbed areas within the Project are watered at least three (3) times daily during dry weather. Watering, with complete coverage of disturbed areas, shall occur at least three times a day, preferably in the mid-morning, afternoon, and after work is done for the day.
- The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 miles per hour or less.

BACM AQ-2

The following measures shall be incorporated into Project plans and specifications as implementation of Rule 1113 (5):

- In order to limit the VOC content of architectural coatings used in the SCAB, architectural coatings shall be no more than a low VOC default level of 50 g/L unless otherwise specified in the SCAQMD Table of Standards (pg. 32-33).

1.4 CONSTRUCTION-SOURCE MITIGATION MEASURES

Construction-source emissions will be less than significant. Therefore, no mitigation measures are required.

1.5 OPERATIONAL-SOURCE MITIGATION MEASURES

Operational-source emissions will be less than significant. Therefore, no mitigation measures are required.

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2 AIR QUALITY SETTING

This section provides an overview of the existing air quality conditions in the Project area and region.

2.1 SOUTH COAST AIR BASIN

The Project site is located in the South Coast Air Basin (SCAB) within the jurisdiction of SCAQMD (6). The SCAQMD was created by the 1977 Lewis-Presley Air Quality Management Act, which merged four county air pollution control bodies into one regional district. Under the Act, the SCAQMD is responsible for bringing air quality in areas under its jurisdiction into conformity with federal and state air quality standards. As discussed above, the Project site is located within the South Coast Air Basin, a 6,745-square mile subregion of the SCAQMD, which includes portions of Los Angeles, Riverside, and San Bernardino Counties, and all of Orange County. The larger South Coast district boundary includes 10,743 square miles.

The SCAB is bound by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Los Angeles County portion of the Mojave Desert Air Basin is bound by the San Gabriel Mountains to the south and west, the Los Angeles / Kern County border to the north, and the Los Angeles / San Bernardino County border to the east. The Riverside County portion of the Salton Sea Air Basin is bound by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley.

2.2 REGIONAL CLIMATE

The regional climate has a substantial influence on air quality in the SCAB. In addition, the temperature, wind, humidity, precipitation, and amount of sunshine influence the air quality.

The annual average temperatures throughout the SCAB vary from the low to middle 60s (degrees Fahrenheit). Due to a decreased marine influence, the eastern portion of the SCAB shows greater variability in average annual minimum and maximum temperatures. January is the coldest month throughout the SCAB, with average minimum temperatures of 47°F in downtown Los Angeles and 36°F in San Bernardino. All portions of the SCAB have recorded maximum temperatures above 100°F.

Although the climate of the SCAB can be characterized as semi-arid, the air near the land surface is quite moist on most days because of the presence of a marine layer. This shallow layer of sea air is an important modifier of SCAB climate. Humidity restricts visibility in the SCAB, and the conversion of sulfur dioxide to sulfates is heightened in air with high relative humidity. The marine layer provides an environment for that conversion process, especially during the spring and summer months. The annual average relative humidity within the SCAB is 71 percent along the coast and 59 percent inland. Since the ocean effect is dominant, periods of heavy early morning fog are frequent and low stratus clouds are a characteristic feature. These effects decrease with distance from the coast.

More than 90 percent of the SCAB's rainfall occurs from November through April. The annual average rainfall varies from approximately nine inches in Riverside to fourteen inches in downtown Los Angeles. Monthly and yearly rainfall totals are extremely variable. Summer rainfall usually consists of widely scattered thunderstorms near the coast and slightly heavier shower activity in the eastern portion of the SCAB with frequency being higher near the coast.

Due to its generally clear weather, about three-quarters of available sunshine is received in the SCAB. The remaining one-quarter is absorbed by clouds. The ultraviolet portion of this abundant radiation is a key factor in photochemical reactions. On the shortest day of the year there are approximately 10 hours of possible sunshine, and on the longest day of the year there are approximately 14 1/2 hours of possible sunshine.

The importance of wind to air pollution is considerable. The direction and speed of the wind determines the horizontal dispersion and transport of the air pollutants. During the late autumn to early spring rainy season, the SCAB is subjected to wind flows associated with the traveling storms moving through the region from the northwest. This period also brings five to ten periods of strong, dry offshore winds, locally termed "Santa Anas" each year. During the dry season, which coincides with the months of maximum photochemical smog concentrations, the wind flow is bimodal, typified by a daytime onshore sea breeze and a nighttime offshore drainage wind. Summer wind flows are created by the pressure differences between the relatively cold ocean and the unevenly heated and cooled land surfaces that modify the general northwesterly wind circulation over southern California. Nighttime drainage begins with the radiational cooling of the mountain slopes. Heavy, cool air descends the slopes and flows through the mountain passes and canyons as it follows the lowering terrain toward the ocean. Another characteristic wind regime in the SCAB is the "Catalina Eddy," a low level cyclonic (counterclockwise) flow centered over Santa Catalina Island which results in an offshore flow to the southwest. On most spring and summer days, some indication of an eddy is apparent in coastal sections.

In the SCAB, there are two distinct temperature inversion structures that control vertical mixing of air pollution. During the summer, warm high-pressure descending (subsiding) air is undercut by a shallow layer of cool marine air. The boundary between these two layers of air is a persistent marine subsidence/inversion. This boundary prevents vertical mixing which effectively acts as an impervious lid to pollutants over the entire SCAB. The mixing height for the inversion structure is normally situated 1,000 to 1,500 feet above mean sea level.

A second inversion-type forms in conjunction with the drainage of cool air off the surrounding mountains at night followed by the seaward drift of this pool of cool air. The top of this layer forms a sharp boundary with the warmer air aloft and creates nocturnal radiation inversions. These inversions occur primarily in the winter, when nights are longer and onshore flow is weakest. They are typically only a few hundred feet above mean sea level. These inversions effectively trap pollutants, such as NOX and CO from vehicles, as the pool of cool air drifts seaward. Winter is therefore a period of high levels of primary pollutants along the coastline.

2.3 WIND PATTERNS AND PROJECT LOCATION

The distinctive climate of the Project area and the SCAB is determined by its terrain and geographical location. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Winds are characteristically light although the speed is somewhat greater during the dry summer months than during the rainy winter season.

2.4 BACKGROUND AIR QUALITY

Criteria pollutants are pollutants that are regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. Criteria pollutants, their typical sources, and effects are identified below:

- Carbon Monoxide (CO): Is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines, unlike ozone, motor vehicles operating at slow speeds are the primary source of CO in the Basin. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- Sulfur Dioxide (SO₂): Is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly as a result of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO₂ oxidizes in the atmosphere, it forms sulfates (SO₄). Collectively, these pollutants are referred to as sulfur oxides (SOX).
- Nitrogen Oxides (Oxides of Nitrogen, or NO_x): Nitrogen oxides (NO_x) consist of nitric oxide (NO), nitrogen dioxide (NO₂) and nitrous oxide (N₂O) and are formed when nitrogen (N₂) combines with oxygen (O₂). Their lifespan in the atmosphere ranges from one to seven days for nitric oxide and nitrogen dioxide, to 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. Of the seven types of nitrogen oxide compounds, NO₂ is the most abundant in the atmosphere. As ambient concentrations of NO₂ are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO₂ than those indicated by regional monitors.
- Ozone (O₃): Is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x), both byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- PM₁₀ (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or

smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM10 also causes visibility reduction and is a criteria air pollutant.

- **PM2.5 (Particulate Matter less than 2.5 microns):** A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (which is often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO₂ release from power plants and industrial facilities and nitrates that are formed from NO_x release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions. PM2.5 is a criteria air pollutant.
- **Volatile Organic Compounds (VOC):** Volatile organic compounds are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include: carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O₃, which is a criteria pollutant. The SCAQMD uses the terms VOC and ROG (see below) interchangeably.
- **Reactive Organic Gases (ROG):** Similar to VOC, Reactive Organic Gases (ROG) are also precursors in forming ozone. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROG are a criteria pollutant since they are a precursor to O₃, which is a criteria pollutant. The SCAQMD uses the terms ROG and VOC (see previous) interchangeably.
- **Lead (Pb):** Lead is a heavy metal that is highly persistent in the environment. In the past, the primary source of lead in the air was emissions from vehicles burning leaded gasoline. As a result of the removal of lead from gasoline, there have been no violations at any of the SCAQMD's regular air monitoring stations since 1982. Currently, emissions of lead are largely limited to stationary sources such as lead smelters. It should be noted that the Project is not anticipated to generate a quantifiable amount of lead emissions. Lead is a criteria air pollutant.

Health Effects of Air Pollutants

Ozone

Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for ozone effects. Short-term exposure (lasting for a few hours) to ozone at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated ozone levels are associated with increased school absences. In recent years, a correlation between elevated ambient ozone levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Ozone exposure under exercising conditions is known to increase the severity of the responses described above. Animal studies suggest that exposure to a combination of pollutants that includes ozone may be more toxic than exposure to ozone alone. Although lung volume and resistance changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels; these include pre-term births and heart abnormalities.

Particulate Matter

A consistent correlation between elevated ambient fine particulate matter (PM₁₀ and PM_{2.5}) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM_{2.5} concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to particulate matter.

The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM₁₀ and PM_{2.5}.

Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposure to NO₂ at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California. Increase in resistance to air flow and airway contraction is observed after short-term

exposure to NO₂ in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO₂ considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of ozone exposure increases when animals are exposed to a combination of ozone and NO₂.

Sulfur Dioxide

A few minutes of exposure to low levels of SO₂ can result in airway constriction in some asthmatics, all of whom are sensitive to its effects. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO₂. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO₂.

Animal studies suggest that despite SO₂ being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract.

Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO₂ levels. In these studies, efforts to separate the effects of SO₂ from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead

Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased Pb levels are associated with increased blood pressure.

Pb poisoning can cause anemia, lethargy, seizures, and death; although it appears that there are no direct effects of Pb on the respiratory system. Pb can be stored in the bone from early age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland) and osteoporosis (breakdown of bony tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of VOCs that cause odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, studies have shown that the VOCs that cause odors can stimulate

sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.5 EXISTING AIR QUALITY

Existing air quality is measured at established SCAQMD air quality monitoring stations. Monitored air quality is evaluated and in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) currently in effect, as well health effects of each pollutant regulated under these standards are shown in Table 2-1 (7).

The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards presented in Table 2-1. The air quality in a region is considered to be in attainment by the state if the measured ambient air pollutant levels for O₃, CO (except 8-hour Lake Tahoe), SO₂, NO₂, PM₁₀, PM_{2.5}, and visible reducing particles are not to be exceeded at any time in any consecutive three-year period; all other values are not to be equaled or exceeded. The air quality in a region is considered to be in attainment by federal standards if the measured ambient air pollutant levels for O₃, PM₁₀, PM_{2.5}, and those based on annual averages or arithmetic mean are not exceeded more than once per year. The O₃ standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (1 OF 2)

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards ¹		National Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)		
Respirable Particulate Matter (PM10) ⁹	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		—		
Fine Particulate Matter (PM2.5) ⁹	24 Hour	—	—	35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12.0 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m ³)	—	Non-Dispersive Infrared Photometry (NDIR)
	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)		—	—	
Nitrogen Dioxide (NO ₂) ¹⁰	1 Hour	0.18 ppm (339 µg/m ³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m ³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)		0.053 ppm (100 µg/m ³)	Same as Primary Standard	
Sulfur Dioxide (SO ₂) ¹¹	1 Hour	0.25 ppm (655 µg/m ³)	Ultraviolet Fluorescence	75 ppb (196 µg/m ³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m ³)	
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (for certain areas) ¹¹	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas) ¹¹	—	
Lead ^{12,13}	30 Day Average	1.5 µg/m ³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m ³ (for certain areas) ¹²	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m ³		
Visibility Reducing Particles ¹⁴	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

See footnotes on next page ...

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990

California Air Resources Board (5/4/16)

TABLE 2-1: AMBIENT AIR QUALITY STANDARDS (1 OF 2)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from $15 \mu\text{g}/\text{m}^3$ to $12.0 \mu\text{g}/\text{m}^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at $35 \mu\text{g}/\text{m}^3$, as was the annual secondary standard of $15 \mu\text{g}/\text{m}^3$. The existing 24-hour PM10 standards (primary and secondary) of $150 \mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard ($1.5 \mu\text{g}/\text{m}^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990

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2.6 REGIONAL AIR QUALITY

The SCAQMD monitors levels of various criteria pollutants at 38 permanent monitoring stations and 5 single-pollutant source Lead (Pb) air monitoring sites throughout the air district (8). In 2015, the federal and state ambient air quality standards (NAAQS and CAAQS) were exceeded on one or more days for ozone, PM₁₀, and PM_{2.5} at most monitoring locations (9). No areas of the SCAB exceeded federal or state standards for NO₂, SO₂, CO, sulfates or lead. See Table 2-2, for attainment designations for the SCAB (10) (11). Appendix 3.1 provides geographic representation of the state and federal attainment status for applicable criteria pollutants within the SCAB.

TABLE 2-2: ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SOUTH COAST AIR BASIN (SCAB)

Criteria Pollutant	State Designation	Federal Designation
Ozone – 1 hour standard	Nonattainment	No Standard
Ozone - 8 hour standard	Nonattainment	Nonattainment (Extreme)
PM ₁₀	Nonattainment	Attainment (Maintenance*)
PM _{2.5}	Nonattainment	Nonattainment (Serious)
Carbon Monoxide	Attainment	Attainment (Maintenance*)
Nitrogen Dioxide	Attainment	Attainment (Maintenance*)
Sulfur Dioxide	Attainment	Attainment
Lead ¹	Attainment	Nonattainment (Partial)

Source: State/Federal designations were taken from <http://www.arb.ca.gov/design/adm/adm.htm>

Note: See Appendix 3.1 for a detailed map of State/National Area Designations within the South Coast Air Basin

* Part of a maintenance plan. The Federal Clean Air Act requires maintenance plans for areas that have been redesignated as attainment areas.

2.7 LOCAL AIR QUALITY

Relative to the Project site, the nearest long-term air quality monitoring site for Ozone (O₃) and Particulate Matter ≤ 10 Microns (PM₁₀) is the South Coast Air Quality Management District Perris monitoring station (SRA 24), located approximately 4 miles south of the Project site (12). The nearest long-term air quality monitoring site in relation to the project for Carbon Monoxide (CO), and Nitrogen Dioxide (NO₂) is carried out by the South Coast Air Quality Management District (SCAQMD) at the Lake Elsinore monitoring station (SRA 25) located approximately 13.5 miles southwest of the project site. Data for Particulate Matter ≤ 2.5 Microns (PM_{2.5}) was obtained from the Metropolitan Riverside County 2 monitoring station (SRA 23), located approximately 16 miles northwest of the project site. It should be noted that the Lake Elsinore and Metropolitan Riverside County 2 monitoring stations were utilized in lieu of the Perris monitoring station only where data was not available from the nearest monitoring site.

The most recent three (3) years of data available is shown on Table 2-3, and identifies the number of days ambient air quality standards were exceeded for the study area, which is was considered

¹ The Federal nonattainment designation for lead is only applicable towards the Los Angeles County portion of the SCAB.

to be representative of the local air quality at the Project site (13). Additionally, data for SO₂ has been omitted as attainment is regularly met in the South Coast Air Basin and few monitoring stations measure SO₂ concentrations. It should be noted that the table below is provided for informational purposes.

TABLE 2-3: PROJECT AREA AIR QUALITY MONITORING SUMMARY 2013-2015

POLLUTANT	STANDARD	YEAR		
		2014	2015	2016
Ozone (O ₃)				
Maximum 1-Hour Concentration (ppm)		0.117	0.124	0.131
Maximum 8-Hour Concentration (ppm)		0.094	0.102	0.098
Number of Days Exceeding State 1-Hour Standard	> 0.09 ppm	16	25	23
Number of Days Exceeding State 8-Hour Standard	> 0.07 ppm	63	50	56
Number of Days Exceeding Federal 8-Hour Standard	> 0.07 ppm	38	31	55
Number of Days Exceeding Health Advisory	≥ 0.15 ppm	0	0	0
Carbon Monoxide (CO)				
Maximum 1-Hour Concentration (ppm)		2.0	0.8	1.2
Maximum 8-Hour Concentration (ppm)		1.4	0.6	0.6
Number of Days Exceeding State 1-Hour Standard	> 20 ppm	0	0	0
Number of Days Exceeding Federal / State 8-Hour Standard	> 9.0 ppm	0	0	0
Number of Days Exceeding Federal 1-Hour Standard	> 35 ppm	0	0	0
Nitrogen Dioxide (NO ₂)				
Maximum 1-Hour Concentration (ppm)		0.045	0.047	0.051
Annual Arithmetic Mean Concentration (ppm)		0.008	0.009	0.02
Number of Days Exceeding State 1-Hour Standard	> 0.18 ppm	0	0	0
Particulate Matter ≤ 10 Microns (PM ₁₀)				
Maximum 24-Hour Concentration (µg/m ³)		87	74	76
Annual Arithmetic Mean (µg/m ³)		35.1	30.3	32.2
Number of Samples		60	57	57
Number of Samples Exceeding State Standard	> 50 µg/m ³	6	3	5
Number of Samples Exceeding Federal Standard	> 150 µg/m ³	0	0	0
Particulate Matter ≤ 2.5 Microns (PM _{2.5})				
Maximum 24-Hour Concentration (µg/m ³)		30.9	--	45.64
Annual Arithmetic Mean (µg/m ³)		16.5	--	14.02
Number of Samples Exceeding Federal 24-Hour Standard	> 35 µg/m ³	0	--	6

-- = data not available from SCAQMD or ARB

Source: SCAQMD's Air Quality Data Tables and ARB's iADAM Top 4 Summary

2.7 REGULATORY BACKGROUND

2.7.1 FEDERAL REGULATIONS

The U.S. EPA is responsible for setting and enforcing the NAAQS for O₃, CO, NO_x, SO₂, PM₁₀, PM_{2.5}, and lead (14). The U.S. EPA has jurisdiction over emissions sources that are under the authority of the federal government including aircraft, locomotives, and emissions sources outside state waters (Outer Continental Shelf). The U.S. EPA also establishes emission standards for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission requirements of the CARB.

The Federal Clean Air Act (CAA) was first enacted in 1955, and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The CAA establishes the federal air quality standards, the NAAQS, and specifies future dates for achieving compliance (15). The CAA also mandates that states submit and implement State Implementation Plans (SIPs) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met.

The 1990 amendments to the CAA that identify specific emission reduction goals for areas not meeting the NAAQS require a demonstration of reasonable further progress toward attainment and incorporate additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA most directly applicable to the development of the Project site include Title I (Non-Attainment Provisions) and Title II (Mobile Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for the following criteria pollutants O₃, NO₂, SO₂, PM₁₀, CO, PM_{2.5}, and lead. The NAAQS were amended in July 1997 to include an additional standard for O₃ and to adopt a NAAQS for PM_{2.5}. Table 2-1 (previously presented) provides the NAAQS within the basin.

Mobile source emissions are regulated in accordance with Title II provisions. These provisions require the use of cleaner burning gasoline and other cleaner burning fuels such as methanol and natural gas. Automobile manufacturers are also required to reduce tailpipe emissions of hydrocarbons and nitrogen oxides (NO_x). NO_x is a collective term that includes all forms of nitrogen oxides (NO, NO₂, NO₃) which are emitted as byproducts of the combustion process.

2.7.2 CALIFORNIA REGULATIONS

The CARB, which became part of the California EPA in 1991, is responsible for ensuring implementation of the California Clean Air Act (AB 2595), responding to the federal CAA, and for regulating emissions from consumer products and motor vehicles. The California CAA mandates achievement of the maximum degree of emissions reductions possible from vehicular and other mobile sources in order to attain the state ambient air quality standards by the earliest practical date. The CARB established the CAAQS for all pollutants for which the federal government has NAAQS and, in addition, establishes standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. However, at this time, hydrogen sulfide and vinyl chloride are not measured at any monitoring stations in the SCAB because they are not considered to be a regional air quality problem. Generally, the CAAQS are more stringent than the NAAQS (16) (14).

Local air quality management districts, such as the SCAQMD, regulate air emissions from commercial and light industrial facilities. All air pollution control districts have been formally designated as attainment or non-attainment for each CAAQS.

Non-attainment areas are required to prepare air quality management plans that include specified emission reduction strategies in an effort to meet clean air goals. These plans are required to include:

- Application of Best Available Retrofit Control Technology to existing sources;
- Developing control programs for area sources (e.g., architectural coatings and solvents) and indirect sources (e.g. motor vehicle use generated by residential and commercial development);
- A District permitting system designed to allow no net increase in emissions from any new or modified permitted sources of emissions;
- Implementing reasonably available transportation control measures and assuring a substantial reduction in growth rate of vehicle trips and miles traveled;
- Significant use of low emissions vehicles by fleet operators;
- Sufficient control strategies to achieve a five percent or more annual reduction in emissions or 15 percent or more in a period of three years for ROG, NO_x, CO and PM₁₀. However, air basins may use alternative emission reduction strategy that achieves a reduction of less than five percent per year under certain circumstances.

2.7.3 AIR QUALITY MANAGEMENT PLANNING

Currently, the NAAQS and CAAQS are exceeded in most parts of the SCAB. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards (17). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. A detailed discussion on the AQMP and Project consistency with the AQMP is provided in Section 3.9.

2.8 EXISTING PROJECT SITE AIR QUALITY CONDITIONS

Existing air quality conditions at the Project site would generally reflect ambient monitored conditions as presented previously at Table 2-3.

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3 PROJECT AIR QUALITY IMPACT

3.1 INTRODUCTION

The Project has been evaluated to determine if it will violate an air quality standard or contribute to an existing or projected air quality violation. Additionally, the Project has been evaluated to determine if it will result in a cumulatively considerable net increase of a criteria pollutant for which the SCAB is non-attainment under an applicable federal or state ambient air quality standard. The significance of these potential impacts is described in the following section.

3.2 STANDARDS OF SIGNIFICANCE

The criteria used to determine the significance of potential Project-related air quality impacts are taken from the Initial Study Checklist in Appendix G of the State CEQA Guidelines (14 California Code of Regulations §§15000, et seq.). Based on these thresholds, a project would result in a significant impact related to air quality if it would (18):

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

The SCAQMD has also developed regional and localized significance thresholds for other regulated pollutants, as summarized at Table 3-1 (19). The SCAQMD's CEQA Air Quality Significance Thresholds (March 2015) indicate that any projects in the SCAB with daily emissions that exceed any of the indicated thresholds should be considered as having an individually and cumulatively significant air quality impact.

TABLE 3-1: MAXIMUM DAILY EMISSIONS THRESHOLDS (1 OF 2)

Pollutant	Construction	Operations
Regional Thresholds		
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
Sox	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

TABLE 3-1: MAXIMUM DAILY EMISSIONS THRESHOLDS (2 OF 2)

Pollutant	Construction	Operations
Localized Thresholds		
NO _x	270 lbs/day (grading)	N/A
CO	1,577 lbs/day (grading)	N/A
PM ₁₀	13 lbs/day (grading)	N/A
PM _{2.5}	8 lb/day (grading)	N/A

3.3 PROJECT-RELATED SOURCES OF POTENTIAL IMPACT

Land uses such as the Project affect air quality through construction-source and operational-source emissions.

On October 17, 2017, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model™ (CalEEMod™) v2016.3.2. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (NO_x, VOC, PM₁₀, PM_{2.5}, SO_x, and CO) and greenhouse gas (GHG) emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures (20). Accordingly, the latest version of CalEEMod™ has been used for this Project to determine construction and operational air quality emissions. Output from the model runs for both construction and operational activity are provided in Appendix 3.1.

3.4 CONSTRUCTION EMISSIONS

Construction activities associated with the Project will result in emissions of CO, VOCs, NO_x, SO_x, PM₁₀, and PM_{2.5}. Construction related emissions are expected from the following construction activities:

- Grading
- Building Construction
- Paving
- Architectural Coating
- Construction Workers Commuting

Construction is expected to commence in July of 2018 and will last through November of 2020. Construction duration by phase is shown on Table 3-2. The duration of construction activity was estimated based on CalEEMod model defaults, past project experience, and a 2020 opening year. It should be noted that residential developments typically construct several residential units at a time rather than constructing all units simultaneously. As a conservative measure, the duration of architectural coatings has been doubled to reflect the elongated schedule resulting from building the residential developments in batches. The construction schedule utilized in the analysis, shown in Table 3-2, represents a “worst-case” analysis scenario should construction

occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.² The detailed summary of construction equipment, shown on Table 3-3, was estimated based on CalEEMod model defaults and past project experience. The site specific construction fleet may vary due to specific project needs at the time of construction. The duration of construction activity and associated equipment both represent a reasonable approximation of the expected construction fleet as required per CEQA guidelines. Please refer to specific detailed modeling inputs/outputs contained in Appendix 3.2 of this analysis.

Dust is typically a major concern during rough grading activities. Because such emissions are not amenable to collection and discharge through a controlled source, they are called “fugitive emissions”. Fugitive dust emissions rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). The CalEEMod model was utilized to calculate fugitive dust emissions resulting from this phase of activity. It is our understanding the Project will require approximately 150,000 cubic yards of soil excavated from the 29 acre contiguous property to the south.

Construction emissions for construction worker vehicles traveling to and from the Project site, as well as vendor trips (construction materials delivered to the Project site) were estimated based on information CalEEMod model defaults.

TABLE 3-2: CONSTRUCTION DURATION

Phase Name	Start Date	End Date	Days
Grading	7/02/2018	12/21/2018	125
Building Construction	12/22/2018	10/25/2019	220
Paving	10/26/2019	9/25/2020	240
Architectural Coating	9/26/2020	11/13/2020	35

² As shown in the California Emissions Estimator Model (CalEEMod) User’s Guide Version 2016.3.2, Table 3.4 “OFFROAD Equipment Emission Factors” as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

TABLE 3-3: CONSTRUCTION EQUIPMENT

Activity	Equipment	Number	Hours Per Day
Grading	Excavators	1	8
	Graders	1	8
	Off-Highway Trucks	1	8
	Rubber Tired Dozers	1	8
	Scrapers	4	8
	Tractors/Loaders/Backhoes	1	8
Building Construction	Cranes	1	8
	Forklifts	3	8
	Generator Sets	1	8
	Tractors/Loaders/Backhoes	3	8
	Welders	1	8
Paving	Paving Equipment	2	8
	Rollers	2	8
	Pavers	2	8
Architectural Coating	Air Compressors	1	8

OFF-SITE UTILITY, INFRASTRUCTURE, AND ON-SITE IMPROVEMENTS

Construction emissions associated with off-site utility, infrastructure, and on-site ancillary improvements may occur, however at this time, a specific schedule of activities is unknown. Notwithstanding, impacts associated with these potential activities are not expected to exceed the maximum daily emissions identified for other Project-related construction activities evaluated in this report. As such, no impacts beyond what has already been identified in this report are expected to occur.

3.4.1 CONSTRUCTION EMISSIONS SUMMARY

The SCAQMD Rules that are currently applicable during construction activity for this Project include but are not limited to: Rule 1113 (Architectural Coatings) (21); Rule 431.2 (Low Sulfur Fuel) (22); Rule 403 (Fugitive Dust) (23); and Rule 1186 / 1186.1 (Street Sweepers) (24).

The estimated maximum daily construction emissions without mitigation are summarized on Table 3-4. Detailed construction model outputs are presented in Appendix 3.1.

TABLE 3-4: EMISSIONS SUMMARY OF OVERALL CONSTRUCTION

Year	Emissions (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
2018	7.57	98.29	51.01	0.11	8.08	4.82
2019	2.90	25.32	21.76	0.04	2.24	1.54
2020	62.66	14.11	15.18	0.02	0.90	0.73
Maximum Daily Emissions	62.66	98.29	51.01	0.11	8.08	4.82
SCAQMD Regional Threshold	75	100	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

3.5 OPERATIONAL EMISSIONS

Operational activities associated with the proposed Project will result in emissions of VOCs, NO_x, CO, SO_x, PM₁₀, and PM_{2.5}. Operational emissions would be expected from the following primary sources:

- Area Source Emissions
- Energy Source Emissions
- Mobile Source Emissions

3.5.1 AREA SOURCE EMISSIONS

Architectural Coatings

Over a period of time the buildings that are part of this Project will be subject to emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings as part of Project maintenance. The emissions associated with architectural coatings were calculated using the CalEEMod.

Consumer Products

Consumer products include, but are not limited to detergents, cleaning compounds, polishes, personal care products, and lawn and garden products. Many of these products contain organic compounds which when released in the atmosphere can react to form ozone and other photochemically reactive pollutants. The emissions associated with use of consumer products were calculated based on defaults provided within the CalEEMod.

Hearths/Fireplaces

The emissions associated with use of hearths/fireplaces were calculated based on assumptions provided in the CalEEMod model. The Project is required to comply with SCAQMD Rule 445, which prohibits the use of wood burning stoves and fireplaces in new development. In order to account for the requirements of this Rule, the unmitigated CalEEMod model estimates were adjusted to remove wood burning stoves and fireplaces. As the project is required to comply with SCAQMD Rule 445, the removal of wood burning stoves and fireplaces is not considered

"mitigation" although it must be identified as such in CalEEMod in order to treat the case appropriately.

Landscape Maintenance Equipment

Landscape maintenance equipment would generate emissions from fuel combustion and evaporation of unburned fuel. Equipment in this category would include lawnmowers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers used to maintain the landscaping of the Project. The emissions associated with landscape maintenance equipment were calculated based on assumptions provided in the CalEEMod.

3.5.2 ENERGY SOURCE EMISSIONS

Combustion Emissions Associated with Natural Gas and Electricity

Electricity and natural gas are used by almost every project. Criteria pollutant emissions are emitted through the generation of electricity and consumption of natural gas. However, because electrical generating facilities for the Project area are located either outside the region (state) or offset through the use of pollution credits (RECLAIM) for generation within the SCAB, criteria pollutant emissions from offsite generation of electricity is generally excluded from the evaluation of significance and only natural gas use is considered. The emissions associated with natural gas use were calculated using the CalEEMod.

3.5.3 MOBILE SOURCE EMISSIONS

Vehicles

Project operational (vehicular) impacts are dependent on both overall daily vehicle trip generation and the effect of the Project on peak hour traffic volumes and traffic operations in the vicinity of the Project. The Project related operational air quality impacts derive primarily from vehicle trips generated by the Project. The emissions associated with mobile source emissions were calculated using the CalEEMod.

3.5.4 OPERATIONAL EMISSIONS SUMMARY

The estimated operation-source emissions are summarized on Table 3-5. Detailed operation model outputs are presented in Appendix 3.2. Under the assumed scenarios, emissions resulting from the Project operations would not exceed the numerical thresholds established by the SCAQMD for any criteria pollutant. Therefore, a less than significant impact would occur and no mitigation is required.

TABLE 3-5: MAXIMUM DAILY OPERATIONAL EMISSIONS SUMMARY

Operational Activities – Summer Scenario	Emissions (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	7.50	0.09	7.45	0.00	0.04	0.04
Energy Source	0.08	0.70	0.30	0.00	0.06	0.06
Mobile	1.74	8.79	23.43	0.08	6.32	1.74
Total Maximum Daily Emissions	9.32	9.57	31.17	0.08	6.41	1.84
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

Operational Activities – Winter Scenario	Emissions (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area Source	7.50	0.09	7.45	0.00	0.04	0.04
Energy Source	0.08	0.70	0.30	0.00	0.06	0.06
Mobile	1.66	9.00	21.93	0.08	6.32	1.74
Total Maximum Daily Emissions	9.24	9.78	29.68	0.08	6.41	1.84
SCAQMD Regional Threshold	55	55	550	150	150	55
Threshold Exceeded?	NO	NO	NO	NO	NO	NO

3.6 LOCALIZED SIGNIFICANCE - CONSTRUCTION ACTIVITY

BACKGROUND ON LOCALIZED SIGNIFICANCE THRESHOLD (LST) DEVELOPMENT

The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (Methodology) (19). The SCAQMD has established that impacts to air quality are significant if there is a potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards (NAAQS/CAAQS). Collectively, these are referred to as Localized Significance Thresholds (LSTs).

The significance of localized emissions impacts depends on whether ambient levels in the vicinity of any given project are above or below State standards. In the case of CO and NO₂, if ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM₁₀ and PM_{2.5}; both of which are non-attainment pollutants.

The SCAQMD established LSTs in response to the SCAQMD Governing Board's Environmental Justice Initiative I-4. 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 at the nearest residence or sensitive receptor. The SCAQMD states that lead agencies can use the LSTs as another indicator of significance in its air quality impact analyses.

LSTs were developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. To address the issue of localized significance, the SCAQMD adopted LSTs that show whether a project would cause or contribute to localized air quality impacts and thereby cause or contribute to potential localized adverse health effects. The analysis makes use of methodology included in the SCAQMD *Final Localized Significance Threshold Methodology* (LST Methodology) (25).

EMISSIONS CONSIDERED

SCAQMD's Methodology clearly states that "off-site mobile emissions from the Project should NOT be included in the emissions compared to LSTs (26)." Therefore, for purposes of the construction LST analysis only emissions included in the CalEEMod "on-site" emissions outputs were considered.

APPLICABILITY OF LSTs FOR THE PROJECT

For this Project, the appropriate Source Receptor Area (SRA) for the LST is the Perris Valley monitoring station (SRA 24). LSTs apply to carbon monoxide (CO), nitrogen dioxide (NO₂), particulate matter ≤ 10 microns (PM₁₀), and particulate matter ≤ 2.5 microns (PM_{2.5}). The SCAQMD produced look-up tables for projects less than or equal to 5 acres in size.

In order to determine the appropriate methodology for determining localized impacts that could occur as a result of Project-related construction, the following process is undertaken:

- The CalEEMod model is utilized to determine the maximum daily on-site emissions that will occur during construction activity.
- The SCAQMD's Fact Sheet for Applying CalEEMod to Localized Significance Thresholds (21) is used to determine the maximum site acreage that is actively disturbed based on the construction equipment fleet and equipment hours as estimated in CalEEMod.
- If the total acreage disturbed is less than or equal to five acres per day, then the SCAQMD's screening look-up tables are utilized to determine if a Project has the potential to result in a significant impact (the SCAQMD recommends that Projects exceeding the screening look-up tables undergo dispersion modeling to determine actual impacts). The look-up tables establish a maximum daily emissions threshold in pounds per day that can be compared to CalEEMod outputs.

MAXIMUM DAILY DISTURBED-ACREAGE

Table 3-6 is used to determine the maximum daily disturbed-acreage for purposes of modeling localized emissions. As shown, the proposed Project could actively disturb approximately 5 acres per day during the grading phase of construction.

TABLE 3-6: MAXIMUM DAILY DISTURBED-ACREAGE

Construction Phase	Equipment Type	Equipment Quantity	Acres graded per 8-hour day	Operating Hours per Day	Acres graded per day
Grading	Rubber Tired Dozers	1	0.5	8	0.5
	Crawler Tractors	0	0.5	8	0
	Graders	1	0.5	8	0.5
	Scrapers	4	1	8	4
Total acres graded per day during Grading					5

Sensitive Receptors

Some people are especially sensitive to air pollution and are given special consideration when evaluating air quality impacts from projects. These groups of people include children, the elderly, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather to exercise are defined as “sensitive receptors”.

The nearest sensitive receptor includes existing residential homes located immediately adjacent to the north of the Project site. Notwithstanding, the *Methodology* explicitly states that “*It is possible that a project may have receptors closer than 25 meters. Projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters (27).*” Accordingly, LSTs for receptors at 25 meters are utilized in this analysis and provide for a conservative i.e. “health protective” standard of care.

CONSTRUCTION-SOURCE EMISSIONS LST ANALYSIS

Since the total acreage disturbed is five acres per day for the grading phase, the SCAQMD’s screening look-up tables are utilized in determining impacts. It should be noted that the look-up tables identify thresholds at only 1 acre, 2 acres, and 5 acres. As previously noted, a 25-meter receptor distance is utilized to determine the LSTs for emissions of CO, NO₂, PM₁₀, and PM_{2.5}.

Table 3-7 identifies the localized impacts at the nearest receptor location in the vicinity of the Project. Without mitigation, localized construction emissions would not exceed the applicable SCAQMD LSTs. Therefore, a less than significant impact would occur. Outputs from the model runs for construction LSTs are provided in Appendix 3.2.

TABLE 3-7: LOCALIZED SIGNIFICANCE SUMMARY CONSTRUCTION

On-Site Grading Emissions	Emissions (pounds per day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Maximum Daily Emissions	84.59	47.59	7.70	4.70
SCAQMD Localized Threshold	270	1577	13	8
Threshold Exceeded?	NO	NO	NO	NO

3.7 LOCALIZED SIGNIFICANCE – LONG-TERM OPERATIONAL ACTIVITY

The proposed project involves the construction and operation of 90 single family residential dwelling units. According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include such uses, and thus, due to the lack of significant stationary source emissions, no long-term localized significance threshold analysis is needed.

3.8 CO “HOT SPOT” ANALYSIS

As discussed below, the Project would not result in potentially adverse CO concentrations or “hot spots.” Further, detailed modeling of Project-specific carbon monoxide (CO) “hot spots” is not needed to reach this conclusion.

An adverse CO concentration, known as a “hot spot”, would occur if an exceedance of the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm were to occur. At the time of the 1993 Handbook, the SCAB was designated nonattainment under the California AAQS and National AAQS for CO (28).

It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. In response, vehicle emissions standards have become increasingly stringent in the last twenty years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SCAB is now designated as attainment, as previously noted in Table 2-2. Also, CO concentrations in the Project vicinity have steadily declined, as indicated by historical emissions data presented previously at Table 2-3.

To establish a more accurate record of baseline CO concentrations affecting the SCAB, a CO “hot spot” analysis was conducted in 2003 for four busy intersections in Los Angeles at the peak morning and afternoon time periods. This “hot spot” analysis did not predict any violation of CO standards, as shown on Table 3-8.

Based on the SCAQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SCAB were a result of unusual

meteorological and topographical conditions and not a result of traffic volumes and congestion at a particular intersection. As evidence of this, for example, 9.3 ppm 8-hr CO concentration measured at the Long Beach Blvd. and Imperial Hwy. intersection (highest CO generating intersection within the “hot spot” analysis), only 0.7 ppm was attributable to the traffic volumes and congestion at this intersection; the remaining 8.6 ppm were due to the ambient air measurements at the time the 2003 AQMP was prepared (28). In contrast, the ambient 8-hr CO concentration within the Project study area is estimated at 1.4 ppm—1.6 ppm (please refer to previous Table 2-3). Therefore, even if the traffic volumes for the proposed Project were double or even triple of the traffic volumes generated at the Long Beach Blvd. and Imperial Hwy. intersection, coupled with the on-going improvements in ambient air quality, the Project would not be capable of resulting in a CO “hot spot” at any study area intersections.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District (BAAQMD) concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (29).

Traffic volumes generating the CO concentrations for the “hot spot” analysis, shown on Table 3-9. The busiest intersection evaluated was that at Wilshire Blvd. and Veteran Ave., which has a daily traffic volume of approximately 100,000 vehicles per day. The 2003 AQMP estimated that the 1-hour concentration for this intersection was 4.6 ppm; this indicates that, should the daily traffic volume increase four times to 400,000 vehicles per day, CO concentrations ($4.6 \text{ ppm} \times 4 = 18.4 \text{ ppm}$) would still not likely exceed the most stringent 1-hour CO standard (20.0 ppm).³ At buildout of the Project, the highest daily traffic volumes generated at the roadways within the vicinity of the Project are expected to generate less than the highest daily traffic volumes generated at the busiest intersection in the CO “hot spot” analysis. As such, the Project would not likely exceed the most stringent 1-hour CO standard.

The proposed Project considered herein would not produce the volume of traffic required to generate a CO “hot spot” either in the context of the 2003 Los Angeles hot spot study, or based on representative BAAQMD CO threshold considerations. Therefore, CO “hot spots” are not an environmental impact of concern for the proposed Project. Localized air quality impacts related to mobile-source emissions would therefore be less than significant.

³ Based on the ratio of the CO standard (20.0 ppm) and the modeled value (4.6 ppm).

TABLE 3-8: CO MODEL RESULTS

Intersection Location	Carbon Monoxide Concentrations (ppm)		
	Morning 1-hour	Afternoon 1-hour	8-hour
Wilshire-Veteran	4.6	3.5	4.2
Sunset-Highland	4	4.5	3.9
La Cienega-Century	3.7	3.1	5.8
Long Beach-Imperial	3	3.1	9.3

Source: 2003 AQMP

Notes: ppm: parts per million. Federal 1-hour standard is 35 ppm and the deferral 8-hour standard is 9.0 ppm.

TABLE 3-9: TRAFFIC VOLUMES

Intersection Location	Peak Traffic Volumes (vph)				
	Northbound (AM/PM)	Southbound (AM/PM)	Eastbound (AM/PM)	Westbound (AM/PM)	Total (AM/PM)
Wilshire-Veteran	560/933	721/1,400	4,954/2,069	1,830/3,317	8,062/7,719
Sunset-Highland	1,551/2,238	2,304/1,832	1,417/1,764	1,342/1,540	6,614/5,374
La Cienega-Century	821/1,674	1,384/2,029	2,540/2,243	1,890/2,728	6,634/8,674
Long Beach-Imperial	756/1,150	479/944	1,217/2,020	1,760/1,400	4,212/5,514

Source: 2003 AQMP

Notes: vph-vehicles per hour

3.9 AIR QUALITY MANAGEMENT PLANNING

The Project site is located within the SCAB, which is characterized by relatively poor air quality. The SCAQMD has jurisdiction over an approximately 10,743 square-mile area consisting of the four-county Basin and the Los Angeles County and Riverside County portions of what use to be referred to as the Southeast Desert Air Basin. In these areas, the SCAQMD is principally responsible for air pollution control, and works directly with the Southern California Association of Governments (SCAG), county transportation commissions, local governments, as well as state and federal agencies to reduce emissions from stationary, mobile, and indirect sources to meet state and federal ambient air quality standards.

Currently, these state and federal air quality standards are exceeded in most parts of the Basin. In response, the SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the state and federal ambient air quality standards. AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy.

In March 2017, the AQMD released the Final 2016 AQMP. The 2016 AQMP continues to evaluate current integrated strategies and control measures to meet the NAAQS, as well as, explore new and innovative methods to reach its goals. Some of these approaches include utilizing incentive programs, recognizing existing co-benefit programs from other sectors, and developing a strategy with fair-share reductions at the federal, state, and local levels (17). Similar to the 2012 AQMP, the 2016 AQMP incorporates scientific and technological information and planning assumptions, including the 2016 RTP/SCS and updated emission inventory methodologies for various source

categories (30). The Project's consistency with the AQMP will be determined using the 2016 AQMP is discussed below:

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993) (31). These indicators are as follows:

- Consistency Criterion No. 1: The proposed Project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Construction Impacts

Consistency Criterion No. 1 refers to violations of the CAAQS and NAAQS. CAAQS and NAAQS violations would occur LSTs were exceeded. As evaluated as part of the Project LST analysis (previously presented), the Project's localized construction-source emissions would not exceed applicable LSTs (after implementation of applicable mitigation measures).

Operational Impacts

The Project regional analysis demonstrates that Project operational-source emissions would not exceed applicable thresholds, and would therefore not result in or cause violations of the CAAQS and NAAQS.

On the basis of the preceding discussion, the Project is determined to be consistent with the first criterion.

- Consistency Criterion No. 2: The Project will not exceed the assumptions in the AQMP based on the years of Project build-out phase.

Overview

The 2016 AQMP demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in the City of Perris General Plan (referred to as the "General Plan") is considered to be consistent with the AQMP.

Construction Impacts

Peak day emissions generated by construction activities are largely independent of land use assignments, but rather are a function of development scope and maximum area of disturbance. Irrespective of the site's land use designation, development of the site to its maximum potential would likely occur, with disturbance of the entire site occurring during construction activities.

Operational Impacts

A project would conflict with the AQMP if it will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase. The AQMP indicates that key assumptions to use in this analysis are population number and location and a regional housing needs assessment. The parcel-based land use and growth assumptions and inputs used in the Regional Transportation Model run by the Southern California Association of Governments that generated the mobile inventory used by the SCAQMD for the AQMP are not available.

The Project proposes to construct 90 single family detached residential units. The City's General Plan Land Use Designation for the site indicate the project site is identified as residential which is consistent with the proposed Project. Additionally, the proposed development would not exceed regional or localized emissions thresholds.

On the basis of the preceding discussion, the Project is determined to be consistent with the second criterion.

AQMP Consistency Conclusion

The Project would not result in or cause NAAQS or CAAQS violations. The proposed Project is consistent with the land use and growth intensities reflected in the adopted General Plan. Furthermore, the Project would not exceed any applicable regional or local thresholds. As such, the Project is therefore considered to be consistent with the AQMP.

3.10 POTENTIAL IMPACTS TO SENSITIVE RECEPTORS

The potential impact of Project-generated air pollutant emissions at sensitive receptors has also been considered. Sensitive receptors can include uses such as long term health care facilities, rehabilitation centers, and retirement homes. Residences, schools, playgrounds, child care centers, and athletic facilities can also be considered as sensitive receptors.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a proposed project, if the project includes stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., transfer facilities and warehouse buildings). The proposed project does not include stationary sources, or attracts mobile sources that may spend long periods queuing and idling at the site. Thus, due to the lack of significant stationary source emissions, no long-term localized significance threshold analysis is needed. Therefore, sensitive receptors would not be adversely affected during Project construction, nor as the result of Project operations.

The proposed Project would not result in a CO "hotspot" as a result of Project related traffic during ongoing operations, nor would the Project result in a significant adverse health impact as discussed in Section 3.8.

3.11 ODORS

The potential for the Project to generate objectionable odors has also been considered. Land uses generally associated with odor complaints include:

- Agricultural uses (livestock and farming)
- Wastewater treatment plants
- Food processing plants
- Chemical plants
- Composting operations
- Refineries
- Landfills
- Dairies
- Fiberglass molding facilities

The Project does not contain land uses typically associated with emitting objectionable odors. Potential odor sources associated with the proposed Project may result from construction equipment exhaust and the application of asphalt and architectural coatings during construction activities and the temporary storage of typical solid waste (refuse) associated with the proposed Project's (long-term operational) uses. Standard construction requirements would minimize odor impacts from construction. The construction odor emissions would be temporary, short-term, and intermittent in nature and would cease upon completion of the respective phase of construction and is thus considered less than significant. It is expected that Project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the City's solid waste regulations. The proposed Project would also be required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed Project construction and operations would be less than significant and no mitigation is required.

3.12 CUMULATIVE IMPACTS

The Project area is designated as a non-attainment area for ozone, PM₁₀, PM_{2.5}, and lead.

The AQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (32). In this report the AQMD clearly states (Page D-3):

"...the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance

thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

Therefore, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment, and, therefore, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable.

Construction Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that Project construction-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, Project construction-source emissions would be considered less than significant on a project-specific and cumulative basis.

Operational Impacts

The Project-specific evaluation of emissions presented in the preceding analysis demonstrates that Project operational-source air pollutant emissions would not result in exceedances of regional thresholds. Therefore, Project operational-source emissions would be considered less than significant on a project-specific and cumulative basis.

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5 CERTIFICATION

The contents of this air study report represent an accurate depiction of the environmental impacts associated with the proposed Tentative Tract Map No. 36647 Project. The information contained in this air quality impact assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 336-5987.

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Master of Science in Environmental Studies
California State University, Fullerton • May, 2010

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AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Planned Communities and Urban Infill – Urban Land Institute • June, 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April, 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August, 2007
AB2588 Regulatory Standards – Trinity Consultants • November, 2006
Air Dispersion Modeling – Lakes Environmental • June, 2006

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APPENDIX 3.1:

STATE/FEDERAL ATTAINMENT STATUS OF CRITERIA POLLUTANTS

TABLE 2-3
National Ambient Air Quality Standards (NAAQS) Attainment Status - South Coast Air Basin

Criteria Pollutant	Averaging Time	Designation ^a	Attainment Date ^b
Ozone (O₃)	(1979) 1-Hour (0.12 ppm) ^c	Nonattainment (“extreme”)	2/26/2023 (revised deadline)
	(2015) 8-Hour (0.070 ppm) ^d	Pending – Expect Nonattainment (“extreme”)	Pending (beyond 2032)
	(2008) 8-Hour (0.075 ppm) ^d	Nonattainment (“extreme”)	7/20/2032
	(1997) 8-Hour (0.08 ppm) ^d	Nonattainment (“extreme”)	6/15/2024
PM_{2.5}^e	(2006) 24-Hour (35 µg/m ³)	Nonattainment (“serious”)	12/31/2019
	(2012) Annual (12.0 µg/m ³)	Nonattainment (“moderate”)	12/31/2021
	(1997) Annual (15.0 µg/m ³)	Attainment (final determination pending)	4/5/2015 (attained 2013)
PM₁₀^f	(1987) 24-hour (150 µg/m ³)	Attainment (Maintenance)	7/26/2013 (attained)
Lead (Pb)^g	(2008) 3-Months Rolling (0.15 µg/m ³)	Nonattainment (Partial) (Attainment determination to be requested)	12/31/2015
CO	(1971) 1-Hour (35 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	(1971) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
NO₂^h	(2010) 1-Hour (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	(1971) Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
SO₂ⁱ	(2010) 1-Hour (75 ppb)	Designations Pending (expect Unclassifiable/Attainment)	N/A (attained)
	(1971) 24-Hour (0.14 ppm) (1971) Annual (0.03 ppm)	Unclassifiable/Attainment	3/19/1979 (attained)

- a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable
- b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for an attainment demonstration
- c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05 ; however, the Basin has not attained this standard and therefore has some continuing obligations with respect to the revoked standard; original attainment date was 11/15/2010; the revised attainment date is 2/6/23
- d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone NAAQS implementation rule, effective 4/6/15; there are continuing obligations under the revoked 1997 and revised 2008 ozone NAAQS until they are attained
- e) The attainment deadline for the 2006 24-hour PM_{2.5} NAAQS was 12/31/15 for the former “moderate” classification; U.S.EPA approved reclassification to “serious,” effective 2/12/16 with an attainment deadline of 12/31/2019; the 2012 (proposal year) annual PM_{2.5} NAAQS was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/m³; new annual designations were final 1/15/15, effective 4/15/15; on July 25, 2016 U.S. EPA finalized a determination that the Basin attained the 1997 annual (15.0 µg/m³) and 24-hour PM_{2.5} (65 µg/m³) NAAQS, effective August 24, 2016
- f) The annual PM₁₀ NAAQS was revoked, effective 12/18/06; the 24-hour PM₁₀ NAAQS deadline was 12/31/2006; the Basin’s Attainment Re-designation Request and PM₁₀ Maintenance Plan was approved by U.S. EPA on 6/26/13, effective 7/26/13
- g) Partial Nonattainment designation – Los Angeles County portion of the Basin only for near-source monitors; expect to remain in attainment based on current monitoring data; attainment re-designation request pending
- h) New 1-hour NO₂ NAAQS became effective 8/2/10, with attainment designations 1/20/12; annual NO₂ NAAQS retained
- i) The 1971 annual and 24-hour SO₂ NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO₂ 1-hour NAAQS; final area designations expected by 12/31/20 due to new source-specific monitoring requirements; Basin expected to be in attainment due to ongoing clean data

TABLE 2-4
National Ambient Air Quality Standards (NAAQS) Attainment Status
Coachella Valley Portion of the Salton Sea Air Basin

Criteria Pollutant	Averaging Time	Designation ^a	Attainment Date ^b
Ozone (O₃)	(1979) 1-Hour (0.12 ppm) ^c	Attainment	11/15/2007 (attained 12/31/2013)
	(2015) 8-Hour (0.070 ppm) ^d	Pending – Expect Nonattainment (Severe)	Pending
	(2008) 8-Hour (0.075 ppm) ^d	Nonattainment (Severe-15)	7/20/2027
	(1997) 8-Hour (0.08 ppm) ^d	Nonattainment (Severe-15)	6/15/2019
PM_{2.5}^e	(2006) 24-Hour (35 µg/m ³)	Unclassifiable/Attainment	N/A (attained)
	(2012) Annual (12.0 µg/m ³)	Unclassifiable/Attainment	N/A (attained)
	(1997) Annual (15.0 µg/m ³)	Unclassifiable/Attainment	N/A (attained)
PM₁₀^f	(1987) 24-hour (150 µg/m ³)	Nonattainment (“serious”)	12/31/2006
Lead (Pb)	(2008) 3-Months Rolling (0.15 µg/m ³)	Unclassifiable/Attainment	Unclassifiable/ Attainment
CO	(1971) 1-Hour (35 ppm)	Unclassifiable/Attainment	N/A (attained)
	(1971) 8-Hour (9 ppm)	Unclassifiable/Attainment	N/A (attained)
NO₂^g	(2010) 1-Hour (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	(1971) Annual (0.053 ppm)	Unclassifiable/Attainment	N/A (attained)
SO₂^h	(2010) 1-Hour (75 ppb)	Designations Pending	N/A
	(1971) 24-Hour (0.14 ppm)	Unclassifiable/Attainment	Unclassifiable/ Attainment
	(1971) Annual (0.03 ppm)		

- a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable
- b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for an attainment demonstration
- c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05; the Southeast Desert Modified Air Quality Management Area, including the Coachella Valley, had not timely attained this standard by the 11/15/07 “severe-17” deadline, based on 2005-2007 data; on 8/25/14, U.S. EPA proposed a clean data finding based on 2011–2013 data and a determination of attainment for the former 1-hour ozone NAAQS for the Southeast Desert nonattainment area; this rule was finalized by U.S. EPA on 4/15/15, effective 5/15/15, that included preliminary 2014 data
- d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone NAAQS implementation rule, effective 4/6/15; there are continuing obligations under the 1997 and 2008 ozone NAAQS until they are attained
- e) The annual PM_{2.5} standard was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/m³
- f) The annual PM₁₀ standard was revoked, effective 12/18/06; the 24-hour PM₁₀ NAAQS attainment deadline was 12/31/2006; the Coachella Valley Attainment Re-designation Request and PM₁₀ Maintenance Plan was postponed by U.S. EPA pending additional monitoring and analysis in the southeastern Coachella Valley
- g) New 1-hour NO₂ NAAQS became effective 8/2/10; attainment designations 1/20/12; annual NO₂ NAAQS retained
- h) The 1971 Annual and 24-hour SO₂ NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO₂ 1-hour standard; final area designations expected by 12/31/2020 with SSAB expected to be designated Unclassifiable/Attainment

The current status of CAAQS attainment for the pollutants with State standards is presented in Table 2-5 for the Basin and the Riverside County portion of the SSAB (Coachella Valley).

TABLE 2-5

California Ambient Air Quality Standards (CAAQS) Attainment Status
South Coast Air Basin and Coachella Valley portion of Salton Sea Air Basin

Pollutant	Averaging Time and Level ^b	Designation ^a	
		South Coast Air Basin	Coachella Valley
Ozone (O ₃)	1-Hour (0.09 ppm) ^c	Nonattainment	Nonattainment
	8-Hour (0.070 ppm) ^d	Nonattainment	Nonattainment
PM2.5	Annual (12.0 µg/m ³)	Nonattainment	Attainment
PM10	24-Hour (50 µg/m ³)	Nonattainment	Nonattainment
	Annual (20 µg/m ³)	Nonattainment	Nonattainment
Lead (Pb)	30-Day Average (1.5 µg/m ³)	Attainment	Attainment
CO	1-Hour (20 ppm)	Attainment	Attainment
	8-Hour (9.0 ppm)	Attainment	Attainment
NO ₂	1-Hour (0.18 ppm)	Attainment	Attainment
	Annual (0.030 ppm)	Attainment	Attainment
SO ₂	1-Hour (0.25 ppm)	Attainment	Attainment
	24-Hour (0.04 ppm)	Attainment	Attainment
Sulfates	24-Hour (25 µg/m ³)	Attainment	Attainment
H ₂ S ^c	1-Hour (0.03 ppm)	Unclassified	Unclassified ^{c)}

- a) CA State designations shown were updated by CARB in 2016, based on the 2013–2015 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events; Source: <http://www.arb.ca.gov/desig/statedesig.htm#current>
- b) CA State standards, or CAAQS, for ozone, CO, SO₂, NO₂, PM10 and PM2.5 are values not to be exceeded; lead, sulfates, and H₂S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations
- c) SCAQMD began monitoring H₂S in the southeastern Coachella Valley in November 2013 due to odor events related to the Salton Sea; three full years of data are not yet available for a State designation, but nonattainment is anticipated for the H₂S CAAQS in at least part of the Coachella Valley

The 1979 federal 1-hour ozone standard (0.12 ppm) was revoked by the U.S. EPA and replaced by the 8-hour average ozone standard (0.08 ppm), effective June 15, 2005. However, the Basin and the former Southeast Desert Modified Air Quality Management Area (which included the Coachella Valley) had not attained the 1-hour federal ozone NAAQS by the attainment dates in 2010 and 2007, respectively, and, therefore, had continuing obligations under the former standard. On August 25, 2014, U.S. EPA

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APPENDIX 3.2:

CALEEMOD EMISSIONS MODEL OUTPUTS

Stratford Ranch - South Coast AQMD Air District, Summer

Stratford Ranch
South Coast AQMD Air District, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.77	Acre	5.77	251,341.20	0
Other Non-Asphalt Surfaces	4.06	Acre	4.06	176,853.60	0
Single Family Housing	90.00	Dwelling Unit	15.12	329,274.00	257

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2020
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

Stratford Ranch - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use - Inputs based on data provided by project applicant.

Construction Phase - Construction schedule based on prior report

Off-road Equipment - Hours based on 8 hour operating work day consistent with prior study

Off-road Equipment - equipment unit amounts and hours consistent with prior report

Off-road Equipment - Number of equipment types consistent with prior study

Off-road Equipment -

Trips and VMT - Values based on prior report trips and vmt. Hauling trip length measured on google maps.

Grading - 150,000 cy imported from East Basin site per emails

Architectural Coating -

Vehicle Trips - Trips based on ITE 10th Edition

Area Coating -

Solid Waste -

Construction Off-road Equipment Mitigation -

Fleet Mix -

Woodstoves - Rule 445, No Woodstoves or Fireplaces in New Development

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	370.00	220.00
tblConstructionPhase	NumDays	35.00	125.00
tblConstructionPhase	NumDays	20.00	240.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	76.50	0.00
tblFireplaces	NumberNoFireplace	9.00	0.00

Stratford Ranch - South Coast AQMD Air District, Summer

tblFireplaces	NumberWood	4.50	0.00
tblGrading	MaterialImported	0.00	150,000.00
tblLandUse	LandUseSquareFeet	162,000.00	329,274.00
tblLandUse	LotAcreage	29.22	15.12
tblOffRoadEquipment	LoadFactor	0.48	0.43
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	VendorTripNumber	80.00	21.00
tblTripsAndVMT	WorkerTripNumber	212.00	63.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	42.00	15.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	4.50	0.00
tblWoodstoves	NumberNoncatalytic	4.50	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Stratford Ranch - South Coast AQMD Air District, Summer

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					
2018	7.5314	98.2883	50.5215	0.1112	11.1575	3.5039	14.6613	3.9230	3.2241	7.1471	0.0000	11,306.24 40	11,306.24 40	3.1342	0.0000	11,384.59 78
2019	2.9010	25.3238	21.7256	0.0417	0.8386	1.4016	2.2402	0.2254	1.3161	1.5416	0.0000	4,102.394 1	4,102.394 1	0.7521	0.0000	4,121.195 7
2020	62.6603	14.1051	15.1835	0.0243	0.1677	0.7539	0.8992	0.0445	0.6936	0.7321	0.0000	2,356.507 7	2,356.507 7	0.7183	0.0000	2,374.465 3
Maximum	62.6603	98.2883	50.5215	0.1112	11.1575	3.5039	14.6613	3.9230	3.2241	7.1471	0.0000	11,306.24 40	11,306.24 40	3.1342	0.0000	11,384.59 78

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					
2018	7.5314	98.2883	50.5215	0.1112	4.5729	3.5039	8.0768	1.5894	3.2241	4.8135	0.0000	11,306.24 40	11,306.24 40	3.1342	0.0000	11,384.59 78
2019	2.9010	25.3238	21.7256	0.0417	0.8386	1.4016	2.2402	0.2254	1.3161	1.5416	0.0000	4,102.394 1	4,102.394 1	0.7521	0.0000	4,121.195 7
2020	62.6603	14.1051	15.1835	0.0243	0.1677	0.7539	0.8992	0.0445	0.6936	0.7321	0.0000	2,356.507 7	2,356.507 7	0.7183	0.0000	2,374.465 3
Maximum	62.6603	98.2883	50.5215	0.1112	4.5729	3.5039	8.0768	1.5894	3.2241	4.8135	0.0000	11,306.24 40	11,306.24 40	3.1342	0.0000	11,384.59 78

Stratford Ranch - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.13	0.00	36.99	55.66	0.00	24.77	0.00	0.00	0.00	0.00	0.00	0.00

Stratford Ranch - South Coast AQMD Air District, Summer

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	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979
Energy	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Mobile	1.7399	8.7925	23.4252	0.0801	6.2385	0.0782	6.3167	1.6693	0.0734	1.7427		8,143.0195	8,143.0195	0.4028		8,153.0890
Total	9.3166	9.5740	31.1718	0.0850	6.2385	0.1754	6.4139	1.6693	0.1706	1.8399	0.0000	9,043.9509	9,043.9509	0.4328	0.0163	9,059.6208

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	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979
Energy	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Mobile	1.7399	8.7925	23.4252	0.0801	6.2385	0.0782	6.3167	1.6693	0.0734	1.7427		8,143.0195	8,143.0195	0.4028		8,153.0890
Total	9.3166	9.5740	31.1718	0.0850	6.2385	0.1754	6.4139	1.6693	0.1706	1.8399	0.0000	9,043.9509	9,043.9509	0.4328	0.0163	9,059.6208

Stratford Ranch - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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	Grading	Grading	7/2/2018	12/21/2018	5	125	
2	Building Construction	Building Construction	12/22/2018	10/25/2019	5	220	
3	Paving	Paving	10/26/2019	9/25/2020	5	240	
4	Architectural Coating	Architectural Coating	9/26/2020	11/13/2020	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 562.5

Acres of Paving: 9.83

Residential Indoor: 666,780; Residential Outdoor: 222,260; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 25,692 (Architectural Coating – sqft)

OffRoad Equipment

Stratford Ranch - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	4	8.00	367	0.43
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	9	23.00	0.00	14,831.00	14.70	6.90	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Stratford Ranch - South Coast AQMD Air District, Summer

3.2 Grading - 2018**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					10.7943	0.0000	10.7943	3.8255	0.0000	3.8255			0.0000			0.0000
Off-Road	7.1242	84.5912	47.5910	0.0910		3.4867	3.4867		3.2078	3.2078		9,155.948 4	9,155.948 4	2.8504		9,227.207 6
Total	7.1242	84.5912	47.5910	0.0910	10.7943	3.4867	14.2810	3.8255	3.2078	7.0333		9,155.948 4	9,155.948 4	2.8504		9,227.207 6

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	0.2833	13.6083	1.7764	0.0174	0.1061	0.0151	0.1212	0.0293	0.0145	0.0437		1,869.844 8	1,869.844 8	0.2742		1,876.700 2
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	0.1239	0.0889	1.1540	2.8200e-003	0.2571	2.0500e-003	0.2591	0.0682	1.8900e-003	0.0701		280.4509	280.4509	9.5600e-003		280.6900
Total	0.4072	13.6971	2.9305	0.0202	0.3631	0.0172	0.3803	0.0975	0.0163	0.1138		2,150.295 6	2,150.295 6	0.2838		2,157.390 2

Stratford Ranch - South Coast AQMD Air District, Summer

3.2 Grading - 2018**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					4.2098	0.0000	4.2098	1.4920	0.0000	1.4920			0.0000			0.0000
Off-Road	7.1242	84.5912	47.5910	0.0910		3.4867	3.4867		3.2078	3.2078	0.0000	9,155.948 3	9,155.948 3	2.8504		9,227.207 6
Total	7.1242	84.5912	47.5910	0.0910	4.2098	3.4867	7.6965	1.4920	3.2078	4.6997	0.0000	9,155.948 3	9,155.948 3	2.8504		9,227.207 6

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	0.2833	13.6083	1.7764	0.0174	0.1061	0.0151	0.1212	0.0293	0.0145	0.0437		1,869.844 8	1,869.844 8	0.2742		1,876.700 2
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	0.1239	0.0889	1.1540	2.8200e-003	0.2571	2.0500e-003	0.2591	0.0682	1.8900e-003	0.0701		280.4509	280.4509	9.5600e-003		280.6900
Total	0.4072	13.6971	2.9305	0.0202	0.3631	0.0172	0.3803	0.0975	0.0163	0.1138		2,150.295 6	2,150.295 6	0.2838		2,157.390 2

Stratford Ranch - South Coast AQMD Air District, Summer

3.3 Building Construction - 2018**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	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082		2,810.8008	2,810.8008	0.7012		2,828.3317
Total	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082		2,810.8008	2,810.8008	0.7012		2,828.3317

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	0.0894	2.5449	0.6338	5.5000e-003	0.1344	0.0186	0.1530	0.0387	0.0178	0.0565		585.1819	585.1819	0.0398		586.1776
Worker	0.3395	0.2434	3.1611	7.7200e-003	0.7042	5.6100e-003	0.7098	0.1868	5.1700e-003	0.1919		768.1915	768.1915	0.0262		768.8464
Total	0.4288	2.7883	3.7948	0.0132	0.8386	0.0242	0.8628	0.2254	0.0230	0.2484		1,353.3734	1,353.3734	0.0660		1,355.0239

Stratford Ranch - South Coast AQMD Air District, Summer

3.3 Building Construction - 2018**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	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082	0.0000	2,810.8008	2,810.8008	0.7012		2,828.3317
Total	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082	0.0000	2,810.8008	2,810.8008	0.7012		2,828.3317

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	0.0894	2.5449	0.6338	5.5000e-003	0.1344	0.0186	0.1530	0.0387	0.0178	0.0565		585.1819	585.1819	0.0398		586.1776
Worker	0.3395	0.2434	3.1611	7.7200e-003	0.7042	5.6100e-003	0.7098	0.1868	5.1700e-003	0.1919		768.1915	768.1915	0.0262		768.8464
Total	0.4288	2.7883	3.7948	0.0132	0.8386	0.0242	0.8628	0.2254	0.0230	0.2484		1,353.3734	1,353.3734	0.0660		1,355.0239

Stratford Ranch - South Coast AQMD Air District, Summer

3.3 Building Construction - 2019**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	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958		2,778.3097	2,778.3097	0.6904		2,795.5700
Total	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958		2,778.3097	2,778.3097	0.6904		2,795.5700

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	0.0810	2.4029	0.5809	5.4400e-003	0.1344	0.0159	0.1503	0.0387	0.0152	0.0539		580.0614	580.0614	0.0384		581.0209
Worker	0.3085	0.2147	2.8308	7.4700e-003	0.7042	5.4800e-003	0.7097	0.1868	5.0500e-003	0.1918		744.0231	744.0231	0.0233		744.6048
Total	0.3895	2.6176	3.4117	0.0129	0.8386	0.0214	0.8600	0.2254	0.0203	0.2457		1,324.0845	1,324.0845	0.0617		1,325.6257

Stratford Ranch - South Coast AQMD Air District, Summer

3.3 Building Construction - 2019**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	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958	0.0000	2,778.3097	2,778.3097	0.6904		2,795.5700
Total	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958	0.0000	2,778.3097	2,778.3097	0.6904		2,795.5700

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	0.0810	2.4029	0.5809	5.4400e-003	0.1344	0.0159	0.1503	0.0387	0.0152	0.0539		580.0614	580.0614	0.0384		581.0209
Worker	0.3085	0.2147	2.8308	7.4700e-003	0.7042	5.4800e-003	0.7097	0.1868	5.0500e-003	0.1918		744.0231	744.0231	0.0233		744.6048
Total	0.3895	2.6176	3.4117	0.0129	0.8386	0.0214	0.8600	0.2254	0.0203	0.2457		1,324.0845	1,324.0845	0.0617		1,325.6257

Stratford Ranch - South Coast AQMD Air District, Summer

3.4 Paving - 2019**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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.5174	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548

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	0.0637	0.0443	0.5841	1.5400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		153.5286	153.5286	4.8000e-003		153.6486
Total	0.0637	0.0443	0.5841	1.5400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		153.5286	153.5286	4.8000e-003		153.6486

Stratford Ranch - South Coast AQMD Air District, Summer

3.4 Paving - 2019**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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.5174	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548

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	0.0637	0.0443	0.5841	1.5400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		153.5286	153.5286	4.8000e-003		153.6486
Total	0.0637	0.0443	0.5841	1.5400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		153.5286	153.5286	4.8000e-003		153.6486

Stratford Ranch - South Coast AQMD Air District, Summer

3.4 Paving - 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	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.4195	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1

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	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812
Total	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812

Stratford Ranch - South Coast AQMD Air District, Summer

3.4 Paving - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.4195	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.733 4	2,207.733 4	0.7140		2,225.584 1

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	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812
Total	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812

Stratford Ranch - South Coast AQMD Air District, Summer

3.5 Architectural Coating - 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					
Archit. Coating	62.2695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479		375.2641	375.2641	0.0291		375.9904
Total	62.5924	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479		375.2641	375.2641	0.0291		375.9904

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	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860
Total	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860

Stratford Ranch - South Coast AQMD Air District, Summer

3.5 Architectural Coating - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.2695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479	0.0000	375.2641	375.2641	0.0291		375.9904
Total	62.5924	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479	0.0000	375.2641	375.2641	0.0291		375.9904

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	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860
Total	0.0679	0.0456	0.6132	1.7200e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		171.6626	171.6626	4.9400e-003		171.7860

4.0 Operational Detail - Mobile

Stratford Ranch - South Coast AQMD Air District, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.7399	8.7925	23.4252	0.0801	6.2385	0.0782	6.3167	1.6693	0.0734	1.7427		8,143.0195	8,143.0195	0.4028		8,153.0890
Unmitigated	1.7399	8.7925	23.4252	0.0801	6.2385	0.0782	6.3167	1.6693	0.0734	1.7427		8,143.0195	8,143.0195	0.4028		8,153.0890

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	849.60	858.60	769.50	2,868,504	2,868,504
Total	849.60	858.60	769.50	2,868,504	2,868,504

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

Stratford Ranch - South Coast AQMD Air District, Summer

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Other Non-Asphalt Surfaces	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Single Family Housing	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

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	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
NaturalGas Unmitigated	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339

Stratford Ranch - South Coast AQMD Air District, Summer

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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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
Single Family Housing	7544.26	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Total		0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339

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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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
Single Family Housing	7.54426	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Total		0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339

6.0 Area Detail

Stratford Ranch - South Coast AQMD Air District, Summer

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	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979
Unmitigated	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979

Stratford Ranch - South Coast AQMD Air District, Summer

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	0.5971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2270	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410		13.3719	13.3719	0.0130		13.6979
Total	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979

Stratford Ranch - South Coast AQMD Air District, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2270	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410		13.3719	13.3719	0.0130		13.6979
Total	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

Stratford Ranch - South Coast AQMD Air District, Summer

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

Stratford Ranch - South Coast AQMD Air District, Winter

Stratford Ranch
South Coast AQMD Air District, Winter

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	5.77	Acre	5.77	251,341.20	0
Other Non-Asphalt Surfaces	4.06	Acre	4.06	176,853.60	0
Single Family Housing	90.00	Dwelling Unit	15.12	329,274.00	257

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	10			Operational Year	2020
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

Stratford Ranch - South Coast AQMD Air District, Winter

Project Characteristics -

Land Use - Inputs based on data provided by project applicant.

Construction Phase - Construction schedule based on prior report

Off-road Equipment - Hours based on 8 hour operating work day consistent with prior study

Off-road Equipment - equipment unit amounts and hours consistent with prior report

Off-road Equipment - Number of equipment types consistent with prior study

Off-road Equipment -

Trips and VMT - Values based on prior report trips and vmt. Hauling trip length measured on google maps.

Grading - 150,000 cy imported from East Basin site per emails

Architectural Coating -

Vehicle Trips - Trips based on ITE 10th Edition

Area Coating -

Solid Waste -

Construction Off-road Equipment Mitigation -

Fleet Mix -

Woodstoves - Rule 445, No Woodstoves or Fireplaces in New Development

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	370.00	220.00
tblConstructionPhase	NumDays	35.00	125.00
tblConstructionPhase	NumDays	20.00	240.00
tblFireplaces	FireplaceDayYear	25.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	76.50	0.00
tblFireplaces	NumberNoFireplace	9.00	0.00

Stratford Ranch - South Coast AQMD Air District, Winter

tblFireplaces	NumberWood	4.50	0.00
tblGrading	MaterialImported	0.00	150,000.00
tblLandUse	LandUseSquareFeet	162,000.00	329,274.00
tblLandUse	LotAcreage	29.22	15.12
tblOffRoadEquipment	LoadFactor	0.48	0.43
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	VendorTripNumber	80.00	21.00
tblTripsAndVMT	WorkerTripNumber	212.00	63.00
tblTripsAndVMT	WorkerTripNumber	15.00	13.00
tblTripsAndVMT	WorkerTripNumber	42.00	15.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	4.50	0.00
tblWoodstoves	NumberNoncatalytic	4.50	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Stratford Ranch - South Coast AQMD Air District, Winter

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					
2018	7.5730	97.8370	51.0142	0.1093	11.1575	3.5066	14.6641	3.9230	3.2267	7.1497	0.0000	11,105.8003	11,105.8003	3.1659	0.0000	11,184.9471
2019	2.9320	25.3460	21.5148	0.0411	0.8386	1.4019	2.2405	0.2254	1.3164	1.5418	0.0000	4,037.7070	4,037.7070	0.7534	0.0000	4,056.5419
2020	62.6664	14.1089	15.1306	0.0242	0.1677	0.7539	0.8992	0.0445	0.6936	0.7321	0.0000	2,346.8809	2,346.8809	0.7180	0.0000	2,364.8313
Maximum	62.6664	97.8370	51.0142	0.1093	11.1575	3.5066	14.6641	3.9230	3.2267	7.1497	0.0000	11,105.8003	11,105.8003	3.1659	0.0000	11,184.9471

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					
2018	7.5730	97.8370	51.0142	0.1093	4.5729	3.5066	8.0795	1.5894	3.2267	4.8161	0.0000	11,105.8003	11,105.8003	3.1659	0.0000	11,184.9471
2019	2.9320	25.3460	21.5148	0.0411	0.8386	1.4019	2.2405	0.2254	1.3164	1.5418	0.0000	4,037.7070	4,037.7070	0.7534	0.0000	4,056.5419
2020	62.6664	14.1089	15.1306	0.0242	0.1677	0.7539	0.8992	0.0445	0.6936	0.7321	0.0000	2,346.8809	2,346.8809	0.7180	0.0000	2,364.8313
Maximum	62.6664	97.8370	51.0142	0.1093	4.5729	3.5066	8.0795	1.5894	3.2267	4.8161	0.0000	11,105.8003	11,105.8003	3.1659	0.0000	11,184.9471

Stratford Ranch - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	54.13	0.00	36.98	55.66	0.00	24.76	0.00	0.00	0.00	0.00	0.00	0.00

Stratford Ranch - South Coast AQMD Air District, Winter

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	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979
Energy	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Mobile	1.6584	8.9986	21.9335	0.0758	6.2385	0.0786	6.3171	1.6693	0.0738	1.7431		7,709.0105	7,709.0105	0.4014		7,719.0456
Total	9.2351	9.7800	29.6802	0.0806	6.2385	0.1758	6.4143	1.6693	0.1710	1.8403	0.0000	8,609.9419	8,609.9419	0.4315	0.0163	8,625.5774

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	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979
Energy	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Mobile	1.6584	8.9986	21.9335	0.0758	6.2385	0.0786	6.3171	1.6693	0.0738	1.7431		7,709.0105	7,709.0105	0.4014		7,719.0456
Total	9.2351	9.7800	29.6802	0.0806	6.2385	0.1758	6.4143	1.6693	0.1710	1.8403	0.0000	8,609.9419	8,609.9419	0.4315	0.0163	8,625.5774

Stratford Ranch - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	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	Grading	Grading	7/2/2018	12/21/2018	5	125	
2	Building Construction	Building Construction	12/22/2018	10/25/2019	5	220	
3	Paving	Paving	10/26/2019	9/25/2020	5	240	
4	Architectural Coating	Architectural Coating	9/26/2020	11/13/2020	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 562.5

Acres of Paving: 9.83

Residential Indoor: 666,780; Residential Outdoor: 222,260; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 25,692 (Architectural Coating – sqft)

OffRoad Equipment

Stratford Ranch - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	1	8.00	402	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	4	8.00	367	0.43
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	9	23.00	0.00	14,831.00	14.70	6.90	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	63.00	21.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Stratford Ranch - South Coast AQMD Air District, Winter

3.2 Grading - 2018**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					10.7943	0.0000	10.7943	3.8255	0.0000	3.8255			0.0000			0.0000
Off-Road	7.1242	84.5912	47.5910	0.0910		3.4867	3.4867		3.2078	3.2078		9,155.948 4	9,155.948 4	2.8504		9,227.207 6
Total	7.1242	84.5912	47.5910	0.0910	10.7943	3.4867	14.2810	3.8255	3.2078	7.0333		9,155.948 4	9,155.948 4	2.8504		9,227.207 6

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	0.3141	13.1485	2.3788	0.0157	0.1061	0.0179	0.1239	0.0293	0.0171	0.0464		1,687.495 7	1,687.495 7	0.3066		1,695.159 4
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	0.1348	0.0973	1.0444	2.6400e-003	0.2571	2.0500e-003	0.2591	0.0682	1.8900e-003	0.0701		262.3562	262.3562	8.9500e-003		262.5800
Total	0.4488	13.2459	3.4232	0.0183	0.3631	0.0199	0.3830	0.0975	0.0190	0.1164		1,949.852 0	1,949.852 0	0.3155		1,957.739 4

Stratford Ranch - South Coast AQMD Air District, Winter

3.2 Grading - 2018**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					4.2098	0.0000	4.2098	1.4920	0.0000	1.4920			0.0000			0.0000
Off-Road	7.1242	84.5912	47.5910	0.0910		3.4867	3.4867		3.2078	3.2078	0.0000	9,155.948 3	9,155.948 3	2.8504		9,227.207 6
Total	7.1242	84.5912	47.5910	0.0910	4.2098	3.4867	7.6965	1.4920	3.2078	4.6997	0.0000	9,155.948 3	9,155.948 3	2.8504		9,227.207 6

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	0.3141	13.1485	2.3788	0.0157	0.1061	0.0179	0.1239	0.0293	0.0171	0.0464		1,687.495 7	1,687.495 7	0.3066		1,695.159 4
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	0.1348	0.0973	1.0444	2.6400e-003	0.2571	2.0500e-003	0.2591	0.0682	1.8900e-003	0.0701		262.3562	262.3562	8.9500e-003		262.5800
Total	0.4488	13.2459	3.4232	0.0183	0.3631	0.0199	0.3830	0.0975	0.0190	0.1164		1,949.852 0	1,949.852 0	0.3155		1,957.739 4

Stratford Ranch - South Coast AQMD Air District, Winter

3.3 Building Construction - 2018**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	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082		2,810.8008	2,810.8008	0.7012		2,828.3317
Total	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082		2,810.8008	2,810.8008	0.7012		2,828.3317

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	0.0933	2.5491	0.7035	5.3400e-003	0.1344	0.0189	0.1533	0.0387	0.0181	0.0568		568.5885	568.5885	0.0428		569.6582
Worker	0.3691	0.2666	2.8608	7.2200e-003	0.7042	5.6100e-003	0.7098	0.1868	5.1700e-003	0.1919		718.6279	718.6279	0.0245		719.2410
Total	0.4624	2.8157	3.5643	0.0126	0.8386	0.0245	0.8631	0.2254	0.0232	0.2487		1,287.2164	1,287.2164	0.0673		1,288.8992

Stratford Ranch - South Coast AQMD Air District, Winter

3.3 Building Construction - 2018**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	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082	0.0000	2,810.8008	2,810.8008	0.7012		2,828.3317
Total	2.8506	25.2288	18.7719	0.0288		1.6066	1.6066		1.5082	1.5082	0.0000	2,810.8008	2,810.8008	0.7012		2,828.3317

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	0.0933	2.5491	0.7035	5.3400e-003	0.1344	0.0189	0.1533	0.0387	0.0181	0.0568		568.5885	568.5885	0.0428		569.6582
Worker	0.3691	0.2666	2.8608	7.2200e-003	0.7042	5.6100e-003	0.7098	0.1868	5.1700e-003	0.1919		718.6279	718.6279	0.0245		719.2410
Total	0.4624	2.8157	3.5643	0.0126	0.8386	0.0245	0.8631	0.2254	0.0232	0.2487		1,287.2164	1,287.2164	0.0673		1,288.8992

Stratford Ranch - South Coast AQMD Air District, Winter

3.3 Building Construction - 2019**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	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958		2,778.3097	2,778.3097	0.6904		2,795.5700
Total	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958		2,778.3097	2,778.3097	0.6904		2,795.5700

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	0.0846	2.4046	0.6469	5.2900e-003	0.1344	0.0162	0.1506	0.0387	0.0155	0.0542		563.4642	563.4642	0.0412		564.4952
Worker	0.3359	0.2352	2.5539	6.9900e-003	0.7042	5.4800e-003	0.7097	0.1868	5.0500e-003	0.1918		695.9331	695.9331	0.0217		696.4767
Total	0.4205	2.6398	3.2008	0.0123	0.8386	0.0217	0.8602	0.2254	0.0205	0.2460		1,259.3973	1,259.3973	0.0630		1,260.9719

Stratford Ranch - South Coast AQMD Air District, Winter

3.3 Building Construction - 2019**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	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958	0.0000	2,778.3097	2,778.3097	0.6904		2,795.5700
Total	2.5115	22.7062	18.3139	0.0288		1.3802	1.3802		1.2958	1.2958	0.0000	2,778.3097	2,778.3097	0.6904		2,795.5700

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	0.0846	2.4046	0.6469	5.2900e-003	0.1344	0.0162	0.1506	0.0387	0.0155	0.0542		563.4642	563.4642	0.0412		564.4952
Worker	0.3359	0.2352	2.5539	6.9900e-003	0.7042	5.4800e-003	0.7097	0.1868	5.0500e-003	0.1918		695.9331	695.9331	0.0217		696.4767
Total	0.4205	2.6398	3.2008	0.0123	0.8386	0.0217	0.8602	0.2254	0.0205	0.2460		1,259.3973	1,259.3973	0.0630		1,260.9719

Stratford Ranch - South Coast AQMD Air District, Winter

3.4 Paving - 2019**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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.5174	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548

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	0.0693	0.0485	0.5270	1.4400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		143.6053	143.6053	4.4900e-003		143.7174
Total	0.0693	0.0485	0.5270	1.4400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		143.6053	143.6053	4.4900e-003		143.7174

Stratford Ranch - South Coast AQMD Air District, Winter

3.4 Paving - 2019**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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.5174	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548

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	0.0693	0.0485	0.5270	1.4400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		143.6053	143.6053	4.4900e-003		143.7174
Total	0.0693	0.0485	0.5270	1.4400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		143.6053	143.6053	4.4900e-003		143.7174

Stratford Ranch - South Coast AQMD Air District, Winter

3.4 Paving - 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	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.4195	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.733 4	2,207.733 4	0.7140		2,225.584 1

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	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472
Total	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472

Stratford Ranch - South Coast AQMD Air District, Winter

3.4 Paving - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.733 4	2,207.733 4	0.7140		2,225.584 1
Paving	0.0630					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.4195	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.733 4	2,207.733 4	0.7140		2,225.584 1

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	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472
Total	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472

Stratford Ranch - South Coast AQMD Air District, Winter

3.5 Architectural Coating - 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					
Archit. Coating	62.2695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479		375.2641	375.2641	0.0291		375.9904
Total	62.5924	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479		375.2641	375.2641	0.0291		375.9904

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	0.0740	0.0500	0.5521	1.6100e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		160.5547	160.5547	4.6000e-003		160.6699
Total	0.0740	0.0500	0.5521	1.6100e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		160.5547	160.5547	4.6000e-003		160.6699

Stratford Ranch - South Coast AQMD Air District, Winter

3.5 Architectural Coating - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.2695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3229	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479	0.0000	375.2641	375.2641	0.0291		375.9904
Total	62.5924	2.2451	2.4419	3.9600e-003		0.1479	0.1479		0.1479	0.1479	0.0000	375.2641	375.2641	0.0291		375.9904

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	0.0740	0.0500	0.5521	1.6100e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		160.5547	160.5547	4.6000e-003		160.6699
Total	0.0740	0.0500	0.5521	1.6100e-003	0.1677	1.2700e-003	0.1689	0.0445	1.1700e-003	0.0456		160.5547	160.5547	4.6000e-003		160.6699

4.0 Operational Detail - Mobile

Stratford Ranch - South Coast AQMD Air District, Winter

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6584	8.9986	21.9335	0.0758	6.2385	0.0786	6.3171	1.6693	0.0738	1.7431		7,709.0105	7,709.0105	0.4014		7,719.0456
Unmitigated	1.6584	8.9986	21.9335	0.0758	6.2385	0.0786	6.3171	1.6693	0.0738	1.7431		7,709.0105	7,709.0105	0.4014		7,719.0456

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	849.60	858.60	769.50	2,868,504	2,868,504
Total	849.60	858.60	769.50	2,868,504	2,868,504

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

Stratford Ranch - South Coast AQMD Air District, Winter

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Other Non-Asphalt Surfaces	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Single Family Housing	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

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	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
NaturalGas Unmitigated	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339

Stratford Ranch - South Coast AQMD Air District, Winter

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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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
Single Family Housing	7544.26	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Total		0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339

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					
Other Asphalt Surfaces	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
Other Non-Asphalt Surfaces	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
Single Family Housing	7.54426	0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339
Total		0.0814	0.6953	0.2959	4.4400e-003		0.0562	0.0562		0.0562	0.0562		887.5596	887.5596	0.0170	0.0163	892.8339

6.0 Area Detail

Stratford Ranch - South Coast AQMD Air District, Winter

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	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979
Unmitigated	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979

Stratford Ranch - South Coast AQMD Air District, Winter

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	0.5971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2270	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410		13.3719	13.3719	0.0130		13.6979
Total	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979

Stratford Ranch - South Coast AQMD Air District, Winter

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5971					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.6713					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2270	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410		13.3719	13.3719	0.0130		13.6979
Total	7.4953	0.0862	7.4508	3.9000e-004		0.0410	0.0410		0.0410	0.0410	0.0000	13.3719	13.3719	0.0130	0.0000	13.6979

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

Stratford Ranch - South Coast AQMD Air District, Winter

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation

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