Air Quality and Greenhouse Gas Analysis Report
Skyline Heights Project
City of Corona, California

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CO	carbon monoxide
CO_2	carbon dioxide
Diesel PM	diesel particulate matter
EPA	Environmental Protection Agency
$MTCO_2e$	metric tons of carbon dioxide equivalent
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
NO_X	nitrogen oxides
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
ppt	parts per trillion
ROG	reactive organic gases
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SO_X	sulfur oxides
VOC	volatile organic compounds

SECTION 1: EXECUTIVE SUMMARY

1.1 - Purpose and Methods of Analysis

The following air quality and greenhouse gas analysis was prepared to evaluate whether the estimated criteria air pollutant and greenhouse gas emissions generated from the project would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows South Coast Air Quality Management District (SCAQMD) recommendations for quantification of emissions and evaluation of potential impacts to air resources

1.2 - Project Summary

The Skyline Heights (TTM 36544) project is comprised of 270.9 acres of vacant land situated in the hills to the southwest of the City of Corona in Riverside County, California (see Exhibit 1, Regional Location Map). Specifically, the site is located adjacent to Foothill Parkway approximately 3 miles south of both State Route (SR) 71 and SR-91 freeways and four miles west of Interstate 15 (see Exhibit 2, Local Vicinity Map – Aerial Base).

The existing General Plan Land Use designation for this site is Agriculture and the existing Zoning is Rural Residential I (0.2 to 0.5 dwelling units per acre [du/ac]). The project will be processing a General Plan Amendment (GPA) and Zone Change for the property through the City of Corona. The proposed General Plan designation will be Low Density Residential (3 to 6 du/ac). The proposed Zoning for this project will be R-1-7.2 Single-Family Residential with 7,200 square feet (sq ft) minimum lots. The project would construct a total of 291 Single Family Low Density Residential lots as well as onsite water facilities and roadway improvements.

The project would consist of two (2) graded areas. The area north of Mabey Canyon would have 45 single-family lots, and the area to the south would have 246 single-family lots.

The project is included as part of the City of Corona's annexation area (see Appendix B for map). Parts of the annexation area (APNs: 102-320-009, -014 (partial); 275-040-016, -004, -005; 275-050-009 -014, -004, -005, -007, -010, -011, -017, -013, -012; 275-080-041, -040, -038, -017, -039, -013, -021, -011, -020, -009; 275-090-011; and 275-090-007) that are not part of the project, have no specific development details available, and are addressed programmatically in a qualitative manner in this report.

1.2.1 - Roadway Improvements

The primary access to the site is from the future westerly extension of Foothill parkway proposed by the City of Corona. Foothill Parkway is designated as a Secondary Highway with 72 feet of

pavement within a 103-foot right-of-way. This regional thoroughfare is anticipated to be constructed in the next few years and is targeted to be completed by 2015.

Area 1 proposes a single point public roadway access off Foothill Parkway just north of Mabey Canyon Debris Basin. This public roadway is 88 foot wide with a 16 foot wide raised median. A 28-foot wide emergency fire and existing residents' access road will also be proposed for emergency purposes to connect to the existing dirt access along Mabey Canyon south of the proposed roadway.

Area 2 proposes a 68-foot private local collector roadway section that extends into the project site from the intersection of Border Avenue and future Foothill Parkway. A 60 foot private roadway section will connect and continue this spine local roadway southerly to connect with the existing 68-foot wide Trudy Way (TTM 31955)

In addition to these proposed roadways, other local private roadways are proposed throughout the project site. These proposed roadways are designed with 36-foot wide pavement within a 56-foot right-of-way or 36 foot wide pavement within a 60-foot right-of-way. The parkways are 10 foot wide or 12 foot wide with 4-foot sidewalks (not curb adjacent).

1.2.2 - Water Features

The proposed onsite water facilities will include an intermediate water pressure Zone 6A Water Reservoir site, a Zone 6A Booster Pump Station site, and a network of Zone 5 (1,380 feet HWL) and Zone 6A (1,560 feet HWL) water distribution pipelines. Two detention basins are proposed within the project site to detain the increased runoff flows from project development and are identified on TTM 36544. The proposed detention basins are designed to be publicly maintained by the City of Corona.

1.2.3 - Construction Schedule

Although an exact construction schedule is not known at this time, grading for the project is anticipated to begin in the first quarter of 2015. Grading operation for the project would sensationally occur in one phase in order to balance soils onsite from the two distinct lotting areas. There may be at least 4 mapped phases, with roughly 70 to 75 lots per phase. The duration of each construction phase will be from 1 to 2 years, and could vary depending on market conditions.

1.3 - Standard Conditions

During construction and operation, the project must comply with applicable rules and regulations. The following are rules and regulations the project may be required to comply with, either directly, or indirectly.

1.3.1 - South Coast Air Quality Management District Rules

SCAQMD Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.

- During all construction activities, construction contractors shall sweep onsite and offsite streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

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

SCAQMD Rule 1108 governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1113 governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

SCAQMD Rule 1143 governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1415, Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems. The SCAQMD originally adopted Rule 1415 to reduce ozone-depleting refrigerant emissions from stationary, non-residential air conditioning (comfort cooling) and refrigeration systems with full charge capacity of greater than 50 pounds, and using Class I and Class II refrigerants. Recently, the SCAQMD amended Rule 1415 to include high-global warming potential refrigerants. Further, the rule now applies only to air conditioning systems with full charge capacity of greater than 50 pounds of refrigerant.

SCAQMD Rule 1415.1, Reduction of Refrigerant Emissions from Stationary Refrigeration Systems, is to control emissions of high-global warming potential refrigerants used in stationary, non-residential refrigeration systems. With the adoption of Rule 1415.1, refrigeration systems with full charge capacity of greater than 50 pounds of high-global warming potential refrigerants are now regulated solely under the new rule. Such systems are typically used in supermarkets, cold storage warehouses, food processing plants, and process cooling operations. Rule 1415.1 is equivalent in every aspect to the Refrigerant Management Program, a statewide regulation adopted by the

California Air Resources Board to reduce emissions of high-global warming potential gases from stationary refrigeration systems. The Refrigerant Management Program took effect January 1, 2011.

Rule 1415.1 requires an owner or operator of a stationary, non-residential refrigeration system to submit annually a Rule 1415.1 Registration Plan to the SCAQMD until registration with ARB is required. In addition, the owner or operator is required to:

- Conduct leak inspections, i.e., monthly, quarterly, or annually based on the refrigeration system's full charge capacity, unless automatic leak detection devices are installed;
- Repair any refrigerant leak within 14 days of initial leak detection;
- Keep onsite records of all leak inspections, leak repair work and other servicing of the refrigeration system, including receipts of refrigerant purchases; and
- Submit an Annual Report to ARB, when required.

SCAQMD Rule 2202, On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

1.3.2 - State of California

Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines Rated at 50 horsepower and Greater. Effective February 19, 2011, each fleet shall comply with weighted reduced particulate matter emission fleet averages by compliance dates listed in the regulation.

ARB Regulation for In-Use Off-Road Diesel Vehicles. On July 26, 2007, the ARB adopted a regulation to reduce diesel particulate matter and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average NO_X emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

ARB Airborne Toxic Control Measure. In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

1.3.3 - Green Building Standards

During operation, the project is required to comply with Title 24 of the California Code of Regulations established by the Energy Commission regarding energy conservation standards. The project is also required to comply with the California Green Building Standards.

Title 24. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2011 must follow the 2008 standards. The upcoming standards are anticipated in 2013. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Green Building Standards. On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard which buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

The California Green Building Standards Code (code section in parentheses) requires:

- Short-term bicycle parking. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1).
- Long-term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.2).
- Designated parking. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.6.2 (5.106.5.2).
- Recycling by Occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling.
- Construction waste. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80-percent for commercial projects. All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled.
- Wastewater reduction. Each building shall reduce the generation of wastewater by one of the following methods:
    1. The installation of water-conserving fixtures or
    2. Using nonpotable water systems (5.303.4).
- Water use savings. 20-percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35 and 40-percent reductions.
- Water meters. Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day.
- Irrigation efficiency. Moisture-sensing irrigation systems for larger landscaped areas.
- Materials pollution control. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particleboard.
- Building commissioning. Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies.

1.4 - Summary of Analysis Results

The following is a summary of the analysis results:

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact**

Impact AIR-2: The project would not violate air quality standards or contribute substantially to an existing or projected air quality violation. **Less than significant impact with mitigation.**

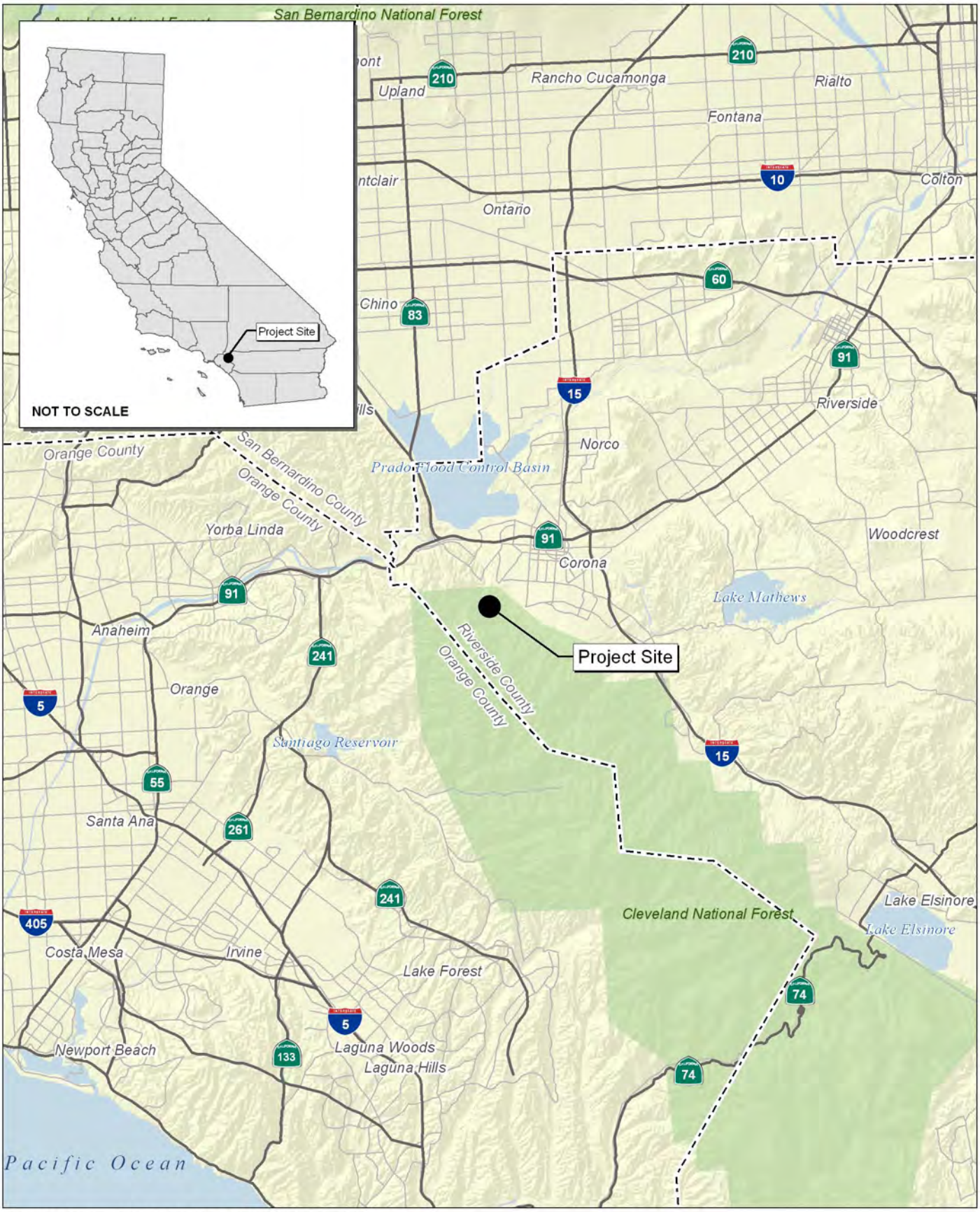
Impact AIR-3: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors). **Less than significant impact**

Impact AIR-4: The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact with mitigation.**

Impact AIR-5: The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact**

Impact AIR-6: The project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact with mitigation**

Impact AIR-7: The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact with mitigation**



Source: Census 2000 Data, The CaSIL, MBA GIS 2013.

NORTH

5 2.5 0 5

Miles

Michael Brandman Associates

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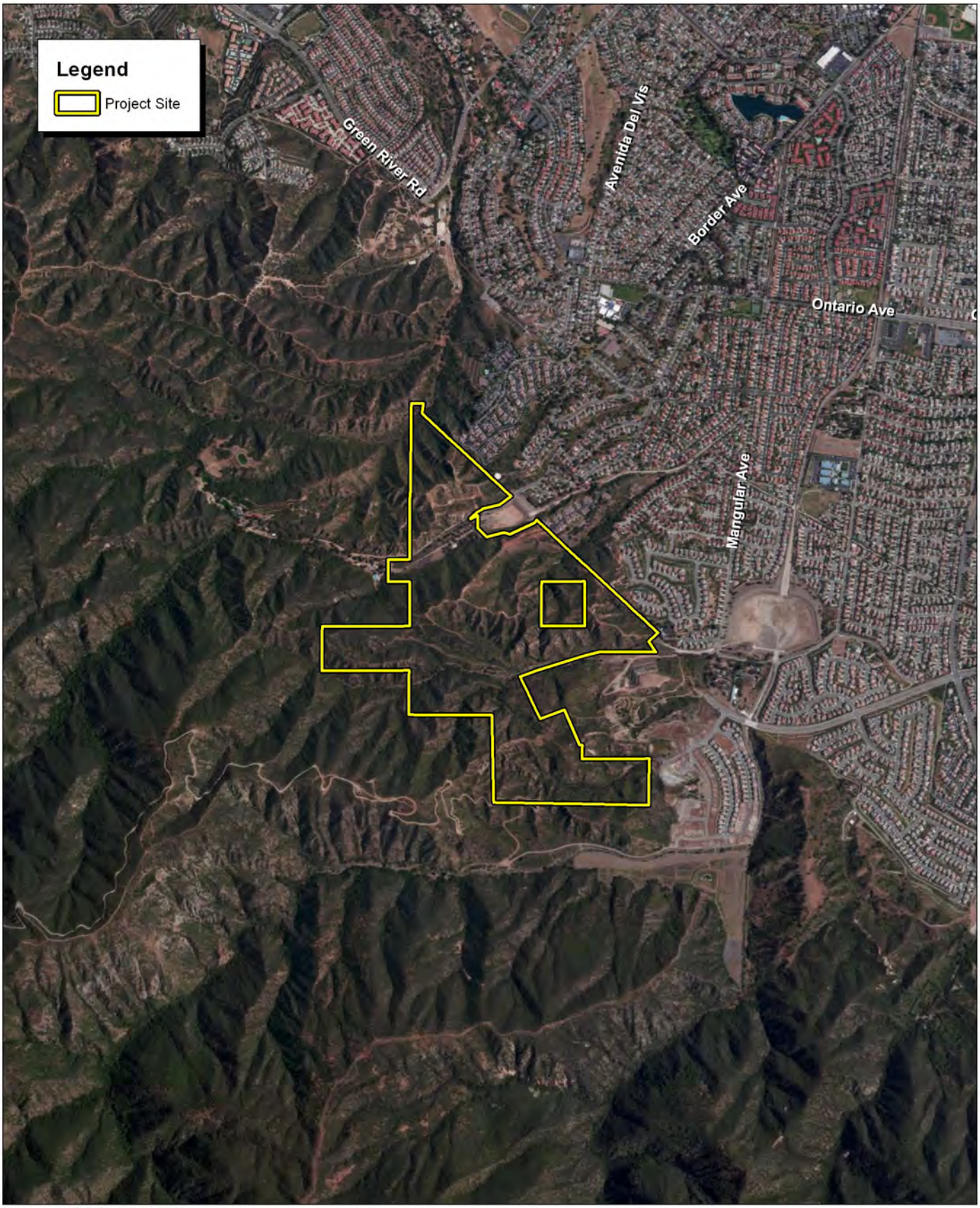
Exhibit 1
Regional Location Map

RICHLAND DEVELOPERS, INC. • SKYLINE HEIGHTS
AIR QUALITY AND GREENHOUSE GAS ANALYSIS REPORT



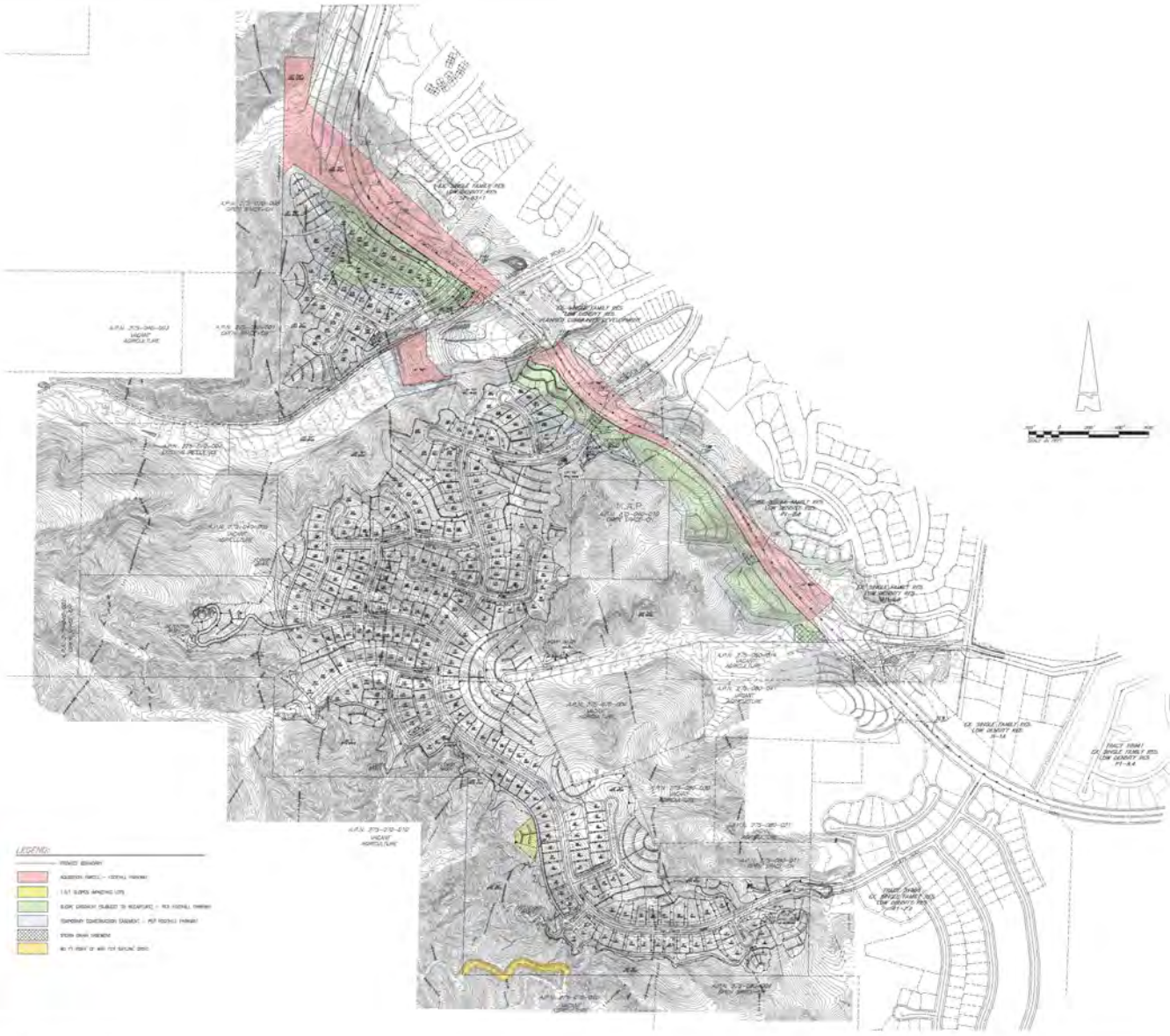
Source: ESRI Aerial Imagery.

NORTH

2,000 1,000 0 2,000
Feet

Michael Brandman Associates

Exhibit 2
Local Vicinity Map
Aerial Base



Source: KWC Engineers, April 2014.

NORTH

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Exhibit 3
Site Plan

SECTION 2: LOCAL AND REGIONAL ENVIRONMENTAL SETTING

2.1 - Existing Physical Setting

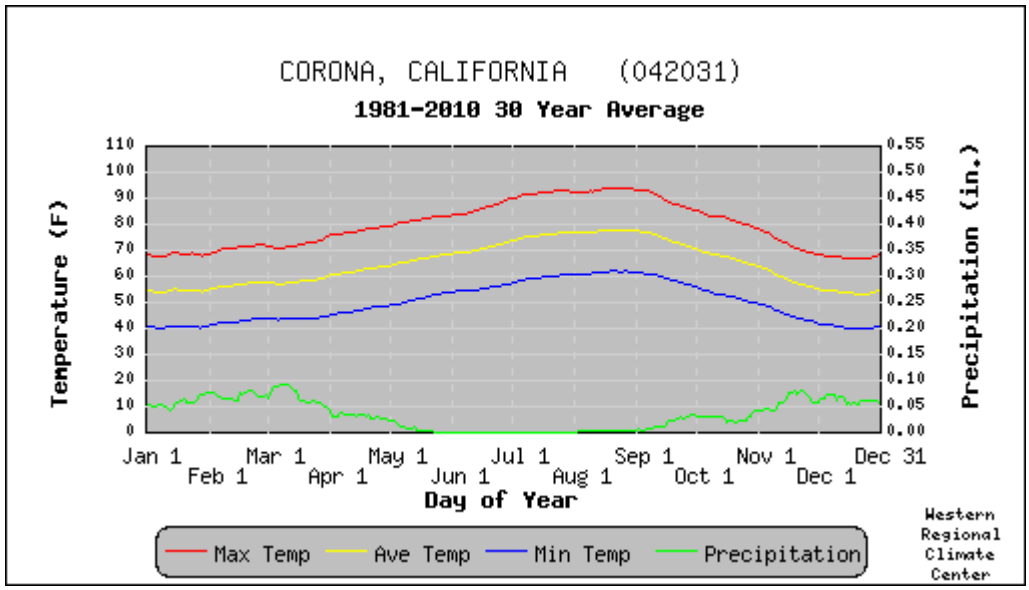
2.1.1 - Local Climate

The project is located in the City of Corona in Riverside County and is within the South Coast Air Basin (basin). To the west of the basin is the Pacific Ocean. To the north and east of the basin are the San Gabriel, San Bernardino, and San Jacinto mountains, while the southern limit of the basin is the San Diego County line. The basin consists of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County (see figure, source: ARB 2009). The air quality in the basin is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal areas and around the Los Angeles area is transported inland until it reaches the mountains where the combination of mountains and inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows. The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas where the project site is located. As shown in Figure 1, the average temperatures recorded in the City of Corona typically ranges from the middle 50s to the high 70s (Source: Western Regional Climate Center 2013). Furthermore, as shown in Figure 1, the majority of the annual rainfall in the area occurs between November and April. The average annual precipitation in Corona is 12.56 inches.

Figure 1: Temperature and Precipitation



Temperature inversions limit the vertical depth through which pollution can be mixed. Among the most common temperature inversions in the basin are radiation inversions, which form on clear winter nights when cold air off mountains sink to the valley floor while the air aloft over the valley remains warm. These inversions, in conjunction with calm winds, trap pollutants near the source. Other types of temperature inversions that affect the basin include marine, subsidence, and high-pressure inversions.

Summers often have periods of hazy visibility and occasionally unhealthful air, while air quality impacts in the winter tend to be localized. Higher temperatures and sunshine can contribute to air pollutant formation, particularly ozone. Impacts of ozone are discussed in the impact sections of this analysis.

2.1.2 - Local Air Quality

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. For evaluation purposes, the SCAQMD has divided the basin into 36 Source Receptor Areas within the Basin operating monitoring stations in most of the areas. These Source Receptor Areas are designated to provide a general representation of the local meteorological, terrain, and air quality conditions within the particular geographical area. The project is within Source Receptor Area 22, and the nearest SCAQMD-operated monitoring station (station #4155) is located in Norco, CA. Table 1 summarizes published monitoring data from 2009 through 2011, which is the most recent 3-year period available. The data collected by the SCAQMD's station #4155 only pertains to suspended particulates (PM_{10}). As such, data for the other criteria pollutants were collected from the next monitoring station in closest proximity to the project site. The data shows that during the past three years, the project area has exceeded the ozone, PM_{10}, and $PM_{2.5}$ standards.

Table 1: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2010	2011	2012
Ozone[1]	1 Hour	Max 1 Hour (ppm)	0.121	0.126	0.124
		Days > State Standard (0.09 ppm)	22	32	31
	8 Hour	Max 8 Hour (ppm)	0.094	0.104	0.103
		Days > State Standard (0.07 ppm)	59	63	72
		Days > National Standard (0.075 ppm)	38	36	47
Carbon monoxide	1 Hour[2]	Max 1 Hour (ppm)	3	ND	1.6
		Days > State Standard (20 ppm)	0	0	0
		Days > National Standard (35 ppm)	0	0	0
	8 Hour[3]	Max 8 Hour (ppm)[6]	1.73	1.49	1.46
		Days > State Standard (9.0 ppm)	0	0	0
		Days > National Standard (9 ppm)	0	0	0
Nitrogen dioxide	Annual[3]	Annual Average (ppm)	0.017	ID	ID
	1 Hour[2]	98th percentile (ppm)	0.057	0.057	0.055
	1 Hour[3]	Max 1 Hour (ppm)	0.061	0.057	0.060
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide	Annual[4]	Annual Average (ppm)	0.001	0.000	ID
	24 Hour[4]	Max 24 Hour (ppm)	0.005	0.001	0.001
		Days > State Standard (0.04 ppm)	0	0	0
	1 Hour[2]	Max 1 Hour (ppm)	0.02	0.05	0.05
		Days > State Standard (0.25 ppm)	0	0	0
		Days > National Standard (0.075 ppm)	0	0	0
Inhalable coarse particles (PM_{10})[5]	Annual	Annual Average (µg/m^3)	27.2	27.6	26.6
	24 hour	Max 24 Hour (µg/m^3)	50.0	60.0	52.0
		Days > State Standard (50 µg/m^3)	0	2	1
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$)[3]	Annual	Annual Average (µg/m^3)[7]	11.0	11.7	ID
	24 Hour	24 Hour (µg/m^3)[7]	43.7	51.6	30.2
		Measured Days > National Standard (35 µg/m^3)	2	2	0

Air Pollutant	Averaging Time	Item	2010	2011	2012

Notes and Abbreviations:
> = exceed ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] From the Mira Loma Van Buren monitoring station
[2] From the SCAQMD monitoring station No. 4144
[3] From the Riverside-Magnolia monitoring station
[4] From the Riverside-Rubidoux monitoring station
[5] From the SCAQMD monitoring station No. 4155
[6] State statistic
[7] National statistic
Sources: California Air Resources Board 2014; South Coast Air Quality Management District 2014.

2.1.3 - Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. In general, sensitive receptors are considered to be locations that houses or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Specifically, the SCAQMD considers elderly care facilities, daycare facilities, schools, parks, residential areas, hospitals, and rehabilitation facilities as sensitive receptor locations.

The nearest sensitive receptors to the project are existing residences to the north and east. To the southeast of the project site is a single-family residential community that is currently graded and under construction (TTM 31955).

2.1.4 - Air Quality Improvement in the South Coast Air Basin

Ozone, NOx, VOC, and CO concentrations have been decreasing in the Basin since 1975 and are projected to continue to decrease through 2020 (California Air Resources Board 2009). These decreases are primarily from motor vehicle controls and reductions in evaporative emissions. Although vehicle miles traveled in the basin are increasing, NOx and VOC are decreasing because of more motor vehicle controls and more lower-emitting vehicles replace the older polluting vehicles. NOx emissions from electric utilities have also decreased due to use of cleaner fuels and renewable energy. The number of days exceeding the national 8-hour standard has decreased between 1997 and 2007. In the 2007 period, there was an overall decrease in exceedance days.

Direct emissions of PM_{10} have been increasing in the Basin and direct emissions of $PM_{2.5}$ have decreased slightly since 1975. Area wide sources (fugitive dust from roads, dust from construction and demolition, and other sources) contribute the greatest amount of direct particulate matter emissions. The overall trends of particulate matter concentrations in the air (not emissions) show an overall improvement.

2.1.5 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the basin are shown in Table 2. The basin is designated as nonattainment for the state and federal ozone, PM_{10}, and $PM_{2.5}$, standards. The basin is also in nonattainment for the state nitrogen dioxide annual standard, based on the 2006 – 2008 data. The Los Angeles County portion of the basin is in nonattainment for lead; however, the project area is in attainment for lead. Based on more recent data (2007 – 2009), the basin would be in attainment for nitrogen dioxide; however, the State has not officially designated the basin as in attainment.

Table 2: South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide (annual)	Nonattainment	Attainment/Maintenance
Nitrogen dioxide (1-hour)	Attainment	Attainment/Unclassifiable
Sulfur dioxide	Attainment	Attainment
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
Lead (Los Angeles County)	Nonattainment	Nonattainment
Lead (other parts of Basin, including the project area)	Attainment	Attainment
Source of State status: California Air Resources Board 2011a. Source of National status: U.S. Environmental Protection Agency 2012.		

2.2 - Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at

the national level. The California Air Resources Board (ARB) regulates at the state level. The South Coast Air Quality Management District (SCAQMD) regulates at the air basin level.

2.2.1 - National and State

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards, also known as federal standards. There are federal standards for six common air pollutants, called criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970. The criteria pollutants are:

- Ozone
- Nitrogen dioxide
- Lead
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (California Air Resources Board 2012).

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's State Implementation Plan incorporates individual federal attainment plans for regional air districts-- air district prepares their federal attainment plan, which sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The ARB also administers California Ambient Air Quality Standards (state standards) for the 10 air pollutants designated in the California Clean Air Act. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The federal and State ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 3.

Table 3: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_X, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.075 ppm			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide [b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides - NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related small particles and result in PM related health effects.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NOx emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 3 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide [c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	- Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. - Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility reducing particles	8 Hour	See note below [d]				

Table 3 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead [e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride [e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.

Table 3 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no State or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Benzene		There are no ambient air quality standards for benzene.		Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a "Group A" carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs naturally in gasoline at 1 to 2 percent by volume. The primary route of human exposure is through inhalation.

Table 3 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Diesel particulate matter (diesel PM)		There are no ambient air quality standards for diesel PM.		Some short-term (acute) effects of diesel PM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of diesel PM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	Diesel PM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of diesel PM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Notes:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter
[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[b] To attain the 1-hour nitrogen dioxide 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 parts per billion (0.100 ppm).
[c] 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.
[d] Visibility reducing particles: 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.
[e] 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.
Source of effects, properties, and sources: South Coast Air Quality Management District 2007a; California Environmental Protection Agency 2002; California Air Resources Board 2009; U.S. Environmental Protection Agency 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b.
Source of standards: California Air Resources Board 2012.

Several pollutants listed in Table 3 are not addressed in this analysis. Analysis of lead is not included in this report because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity.

Asbestos

Asbestos is listed as a toxic air contaminant by ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in surface deposits of several types of rock formations. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Crushing or breaking these rocks, through construction or other means, can release asbestoform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma.

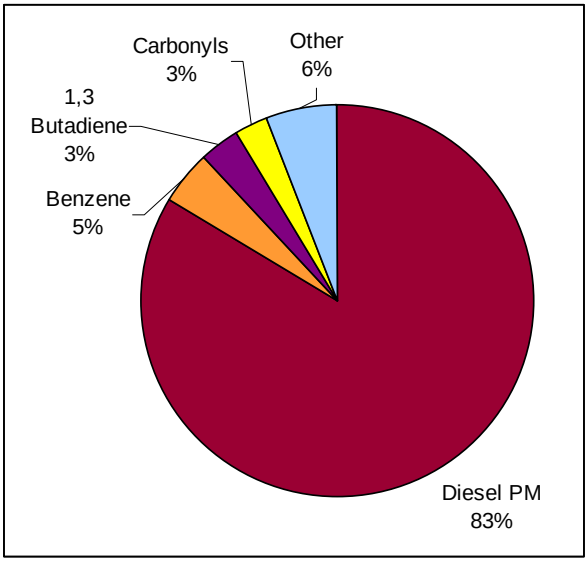
There are no known likely areas of naturally occurring asbestos in the project area (U.S. Geological Survey 2011).

Toxic Air Contaminants

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. These TACs are as follows: acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM).

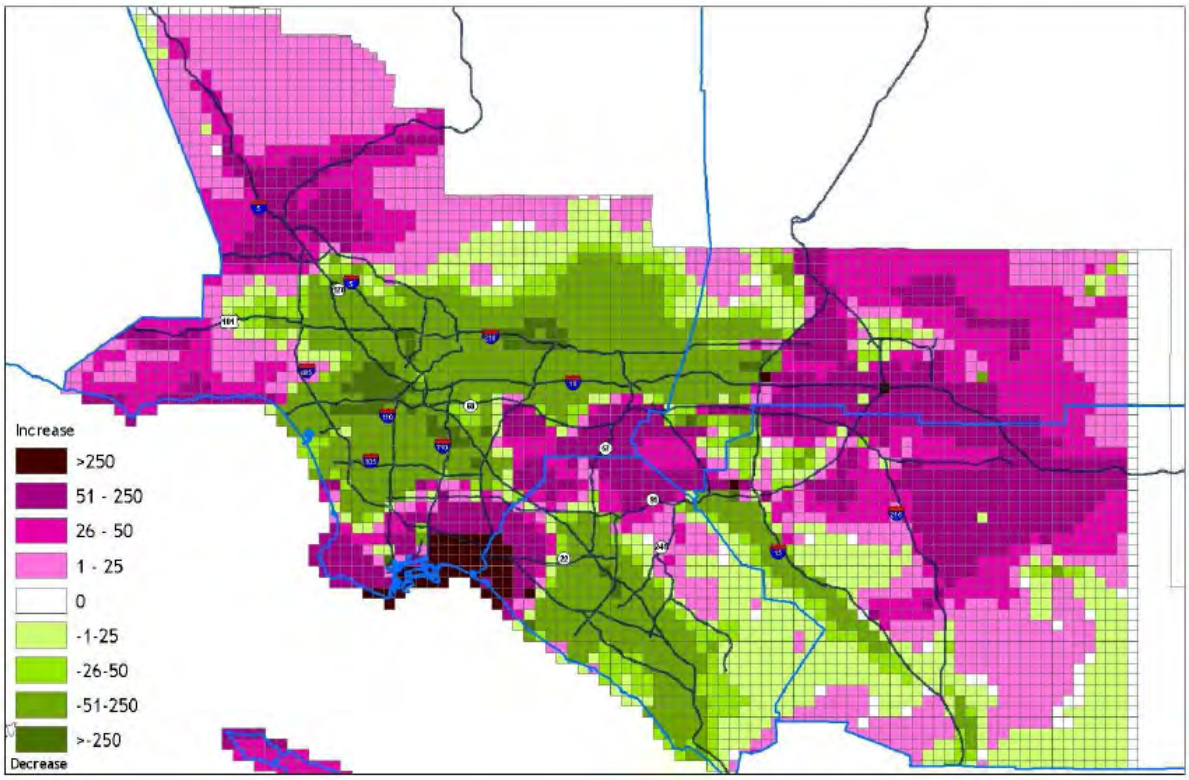
As shown in Figure 2, the SCAQMD MATES-III report indicates that overall, in the basin, diesel PM contributes 83.6 percent of the risk. The risk basinwide is 1,194 per million based on average at fixed monitoring sites.

Figure 2: Overall South Coast Air Basin Cancer Risk by Pollutant



As shown in Figure 3 (source: South Coast Air Quality Management District, MATES-III report), the project area experienced an increase of between 51 and 250 in one million from 1998-99 to 2005.

Figure 3: Change in Air Toxics Simulated Risk in South Coast Air Basin from 1998-99 to 2005



Some studies indicate that diesel PM poses the greatest health risk among the TACs listed above. A 10-year research program (California Air Resources Board 1998) demonstrated that diesel PM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to diesel PM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

However, some researchers that think the risk from diesel PM is over exaggerated (Enstrom 2008). Moreover, the current methodological protocols required by SCAQMD and ARB when studying the health risk posed by diesel PM assume the following: (1) 24-hour constant exposure; (2) 350 days a year; (3) for a continuous period lasting 70 years. These are incredibly conservative assumptions that are not replicated in reality. Most people are indoors for 18-20 hours a day (at their place of employment or home) and most people do not live in the same location for a 70-year period. Thus, the health risk assessments prepared pursuant to these protocols exaggerate the risk of cancer associated with diesel PM exposure.

Diesel PM differs from other TACs in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a diesel PM exposure method. This method uses the ARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of diesel PM. Within the South Coast Air Basin, in addition to diesel PM, there are emissions of benzene, formaldehyde, acetaldehyde, naphthalene, ethylbenzene, acrolein, toluene, hexane, propylene, and xylene from a variety of sources located within the Basin that contribute to health risks.

The SCAQMD conducted a detailed TAC emission inventory, air sampling, and dispersion modeling study called the Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-II) (South Coast Air Quality Management District 2000) and (MATES-III) (South Coast Air Quality Management District 2008c). The MATES Studies provided information on the importance of various TACs in terms of their relative health risks as well as their spatial magnitude and distribution across the Basin. The MATES-III information can be used to characterize the "background" health risks from both regional and local TAC emission sources. The MATES-III program results indicate that the cancer risks in the area where the project site is located are estimated to be 705 in one million of which diesel PM contributes approximately 84 percent of the total cancer risk. The MATES III

study found that the population weighted cancer risk in the entire Basin was estimated to be 853 in one million. The remaining portion of the total cancer risk is comprised mainly of exposures to benzene, formaldehyde, acrolein, and 1,3-butadiene.

2.2.2 - South Coast Air Quality Management District

The agency for air pollution control for the South Coast Air Basin (basin) is the South Coast Air Quality Management District (SCAQMD). The SCAQMD is responsible for controlling emissions primarily from stationary sources. The SCAQMD maintains air quality monitoring stations throughout the basin. The SCAQMD is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the basin, in coordination with the Southern California Association of Governments. The SCAQMD also has roles under CEQA.

Air Quality Management Plans

An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air basin where one or more ambient air quality standards are exceeded.

2003 AQMP

One of the purposes of the 2003 AQMP is to lead the basin and portions of the Salton Sea Air Basin under SCAQMD jurisdiction into compliance with the 1-hour ozone and PM_{10} federal standards (South Coast Air Quality Management District 2003). One of the purposes of the 2007 AQMP is to lead the basin into compliance of the federal 8-hour ozone and $PM_{2.5}$ standards.

The 2003 AQMP also replaced the 1997 attainment demonstration for the federal CO standard and provided a basis for a maintenance plan for CO for the future, and updated the maintenance plan for the federal nitrogen dioxide standard that the South Coast Air Basin has met since 1992 (2003 AQMP, page 1-1).

The 2003 AQMP also incorporated new scientific data in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2003 AQMP utilized complex modeling to show that with the control measures, the basin would be in compliance with the federal and state standards for all pollutants by 2010, except for the state ozone and PM_{10} standards and the state ozone and PM_{10} standard after 2010 or by the earliest practicable date, as mandated by the California Health and Safety Code Section 40462. The ARB approved the 2003 AQMP on August 1, 2003. The EPA's adequacy finding on the emissions budgets for conformity determination in the basin was published in the Federal Register (69 FR 15325-15326).

2007 AQMP

The 2007 AQMP was adopted by the SCAQMD on June 1, 2007 (South Coast Air Quality Management District 2007a). On July 13, 2007, the SCAQMD Board adopted the 2007 Final AQMP

Transportation Conformity Budgets and directed the Executive Officer to forward them to ARB for its approval and subsequent submittal to the EPA. On September 27, 2007, ARB adopted the State Strategy for the 2007 State Implementation Plan and the 2007 AQMP as part of the State Implementation Plan. On January 15, 2009, the EPA's regional administrator signed a final rule to approve in part and disapprove in part the SCAQMD 2003 1-hour ozone plan and the nitrogen dioxide maintenance plan. The parts of the plan that were approved strengthen the State Implementation Plan. The Clean Air Act does not require the disapproved portions of the plan, and the disapprovals do not start sanctions clocks.

The 2007 AQMP outlines a detailed strategy for meeting the federal health-based standards for $PM_{2.5}$ by 2015 and 8-hour ozone by 2024 while accounting for and accommodating future expected growth. The 2007 AQMP incorporates significant new emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling. Most of the reductions will be from mobile sources, which are currently responsible for about 75 percent of all smog and particulate forming emissions. The 2007 AQMP includes 37 control measures proposed for adoption by the SCAQMD, including measures to reduce emissions from new commercial and residential developments, more reductions from industrial facilities, and reductions from wood burning fireplaces and restaurant charbroilers.

2012 AQMP

The 2012 AQMP was adopted December 7, 2012 (South Coast Air Quality Management District 2012). The purpose of the 2012 AQMP for the Basin is to set forth a comprehensive and integrated program that will lead the Basin into compliance with the federal 24-hour PM2.5 air quality standard, and to provide an update of the Basin's projections in meeting the federal 8-hour ozone standards. The AQMP will be submitted to the U.S. EPA as the State Implementation Plan (SIP) once it is approved by the SCAQMD Governing Board and the ARB. Specifically, the AQMP will serve as the official SIP submittal for the federal 2006 24-hour PM2.5 standard, for which U.S. EPA has established a due date of December 14, 2012. In addition, the AQMP will update specific elements of the previously approved 8-hour ozone SIP: 1) an updated emissions inventory and, 2) new control measures and commitments for emissions reductions to help fulfill the Section 182(e)(5) portion of the 8-hour ozone SIP.

The 2012 AQMP proposes Basin-wide PM2.5 measures that will be implemented by the 2014 attainment date, episodic control measures to achieve air quality improvements (would only apply during high PM2.5 days), Section 182(e)(5) implementation measures (to maintain progress towards meeting the 2023 8-hour ozone national standard), and transportation control measures. Most of the control measures focus on incentives, outreach, and education.

Proposed $PM_{2.5}$ reduction measures in the 2012 AQMP include the following:

- Further NO_x reductions from RECLAIM
- Further reductions from residential wood burning devices
- Further reductions from open burning
- Emission reductions from under-fired charbroilers
- Further ammonia reductions from livestock waste
- Backstop measures for indirect sources of emissions from ports and port-related sources
- Further criteria pollutant reductions from education, outreach and incentives

There are multiple VOC and NOx reductions in the 2012 AQMP to attempt to reduce ozone formation, including further VOC reductions from architectural coatings, miscellaneous coatings, adhesives, solvents, lubricants, mold release products, consumer products.

The 2012 also contains proposed mobile source implementation measures for the deployment of zero- and near-zero emission on-road heavy-duty vehicles, locomotives, and cargo handling equipment. There are measures for the deployment of cleaner commercial harborcraft, cleaner ocean-going marine vessels, cleaner off-road equipment, and cleaner aircraft engines.

The 2012 AQMP proposes the following mobile source implementation measures:

- On-road mobile sources:
  - Accelerated penetration of partial zero-emission and zero-emission vehicles and light-heavy and medium-heavy duty vehicles through funding assistance for purchasing the vehicles
  - Accelerated retirement of older light-, medium-, and heavy-duty vehicles through funding incentives
  - Further emission reductions from heavy-duty vehicles serving near-dock railyards through a proposed control measure that calls for a requirement that any cargo container moved between the Ports of Los Angeles and Long Beach to the nearby railyards by with zero-emission technologies
- Off-road mobile sources:
  - Extension of the SOON provision for construction/industrial equipment, which provides funding to repower or replace older Tier 0 and Tier 1 equipment
  - Further emission reductions from freight and passenger locomotives calls for an accelerated use of Tier 4 locomotives in the Basin
  - Further emission reductions from ocean-going marine vessels while at berth
  - Emission reductions from ocean-going marine vessels

The 2012 AQMP also relies upon the Southern California Association of Governments regional transportation strategy, which is in its adopted 2012-2035 Regional Transportation Plan/Sustainable

Communities Strategy (RTP/SCS) and 2011 Federal Transportation Improvement Program, which contains the following sections:

1. Linking regional transportation planning to air quality planning: making sure that the regional transportation plan supports the goals and objectives of the AQMP/SIP.
2. Regional transportation strategy and transportation control measures: the RTP/SCS contains improvements to the regional multimodal transportation system including the following: active transportation (non-motorized transportation – biking and walking); transportation demand management; transportation system management; transit; passenger and high-speed rail; goods movement; aviation and airport ground access; highways; arterials; and operations and maintenance.
3. Reasonably available control measure analysis

SCAQMD Rules

The AQMP for the basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and federal standards. The rules and regulations that apply to this project include, but are not limited to, the rules listed in the Standard Conditions section of this report.

CEQA

The SCAQMD has two roles under CEQA:

1. Lead Agency: responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the SCAQMD where the SCAQMD has primary approval authority over the project.
2. Commenting Agency: the SCAQMD reviews and comments on air quality analyses prepared by other public agencies (such as the proposed project).

The SCAQMD also provides guidance and thresholds for CEQA air quality and greenhouse gas analyses. The result of this guidance as well as State regulations to control air pollution is an overall improvement in the Basin, as shown previously.

SECTION 3: CLIMATE CHANGE SETTING

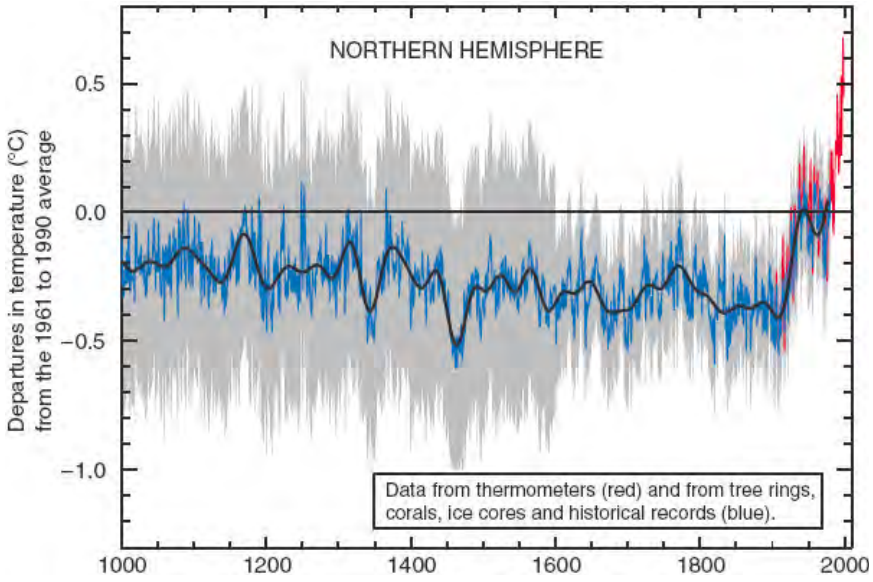
3.1 - Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (Intergovernmental Panel on Climate Change 2007a). The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

Some question the validity of the temperature graph used by the IPCC in some form in the Third and Fourth Assessment Reports. The graph is shown in Figure 4 (source Intergovernmental Panel on Climate Change 2001). The figure shows that temperatures are relatively stable until 1900, when the temperature increases rapidly. Some scientists have had trouble duplicating the data used for the graph (McIntyre and McKitrick 2003) and indicated when the data is correctly handled "shows the 20th century climate to be unexceptional compared to earlier centuries" (McKitrick 2005). Hans von Storch, a German climate scientist, claimed that the methods used by Mann et al. probably underestimated the temperature fluctuations in the past by a factor of two or more (Von Storch et al. 2004).

Figure 4: Historical Temperature Changes



Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from California Climate Change Center 2006 and Moser et al. 2009).

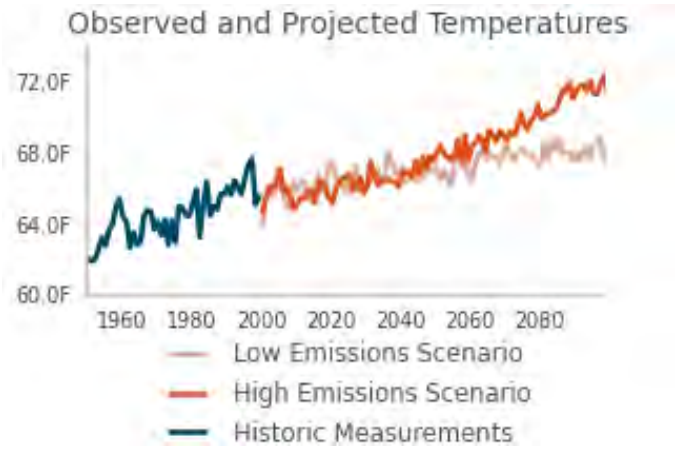
- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.

- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Consequences of Climate Change in Corona

Figure 5 displays a chart of measured historical and projected annual average temperatures in the Corona area. As shown in the figure, temperatures are expected to rise in the low and high greenhouse gas emissions scenarios.

Figure 5: Observed and Projected Temperatures from Climate Change in Corona



Source: CalAdapt 2013, using data from Maurer et al. 2002
and California Energy Commission, 2008

3.2 - Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as greenhouse gases. The effect is analogous to the way a greenhouse retains heat. Common greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit greenhouse gases. The presence of greenhouse gases in the atmosphere affects the earth's temperature. It is believed

that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a greenhouse gas compared with the reference gas, carbon dioxide.

Individual greenhouse gas compounds have varying global warming potential and atmospheric lifetimes. Carbon dioxide, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a greenhouse gas is a measure of how much a given mass of a greenhouse gas is estimated to contribute to global warming. To describe how much global warming a given type and amount of greenhouse gas may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing greenhouse gas emissions since it normalizes various greenhouse gas emissions to a consistent reference gas, carbon dioxide. For example, methane's warming potential of 21 indicates that methane has 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual greenhouse gas multiplied by its global warming potential. Greenhouse gases defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 4.

Table 4: Description of Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless greenhouse gas. It has a lifetime of 114 years. Its global warming potential is 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 21.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.
Carbon dioxide	Carbon dioxide (CO_2) is an odorless, colorless, natural greenhouse gas. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Chlorofluorocarbons	These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 3,800 to 8,100.	Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987.
Hydrofluorocarbons	Hydrofluorocarbons are a group of greenhouse gases containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b.		

Other greenhouse gases include water vapor, ozone, and aerosols. Water vapor is an important component of our climate system and is not regulated. Ozone and aerosols are short-lived greenhouse

gases; global warming potentials for short-lived greenhouse gases are not defined by the IPCC. Aerosols can remain suspended in the atmosphere for about a week and can warm the atmosphere by absorbing heat and cool the atmosphere by reflecting light.

Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, as opposed to other greenhouse gases that can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

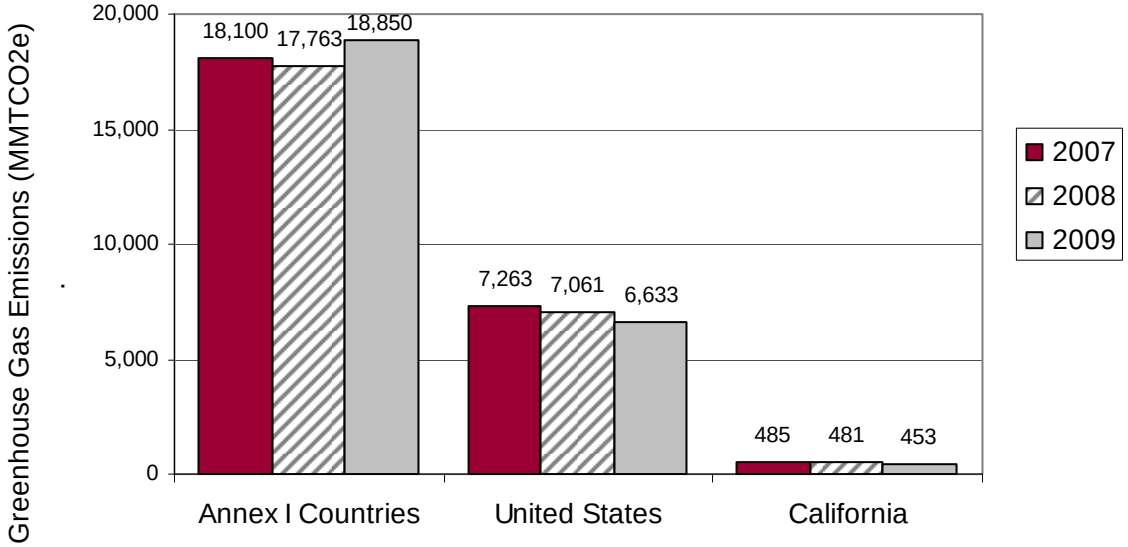
The project would emit black carbon through emissions of diesel PM during construction and operation. However, procedures to quantify changes due to black carbon emissions have not been widely accepted or thoroughly researched (IPCC 2007; Wilson and Walters 2012). Therefore, impacts to climate change from black carbon are speculative at this time and no further discussion is necessary.

Although there could be health effects resulting from changes in the climate and the consequences that can bring about, inhalation of greenhouse gases at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (Centers for Disease Control and Prevention 2010, Occupational Safety and Health Administration 2003).

3.2.1 - Emissions Inventories

Emissions worldwide were approximately 49,000 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2004 (Intergovernmental Panel on Climate Change 2007b). Greenhouse gas emissions in 2007, 2008, and 2009 are shown in Figure 6. Annex I parties refer to countries that joined the United Nations Framework Convention on Climate Change.

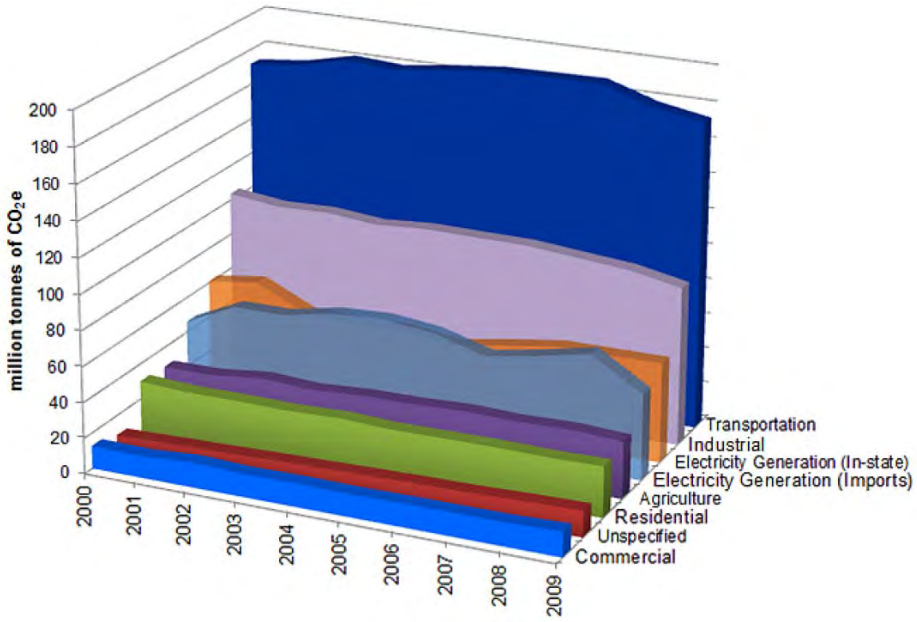
Figure 6: Greenhouse Gas Emissions Trends



Prepared by Michael Brandman Associates using the following data sources:
California Air Resources Board 2011
U.S. Environmental Protection Agency 2011
United Nations Framework Convention on Climate Change 2010

As shown in Figure 7, the main contribution of greenhouse gas emissions in California between the year 2000 through 2009 was transportation (Source: California Air Resources Board 2011b). The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output.

Figure 7: Greenhouse Gas Emission Trends by Sector in California



3.3 - Regulatory Environment

3.3.1 - International

Climate change is a global issue involving greenhouse gas emissions from all around the world; therefore, countries such as the ones discussed below have made an effort to reduce greenhouse gases.

Intergovernmental Panel on Climate Change. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Framework Convention on Climate Change (Convention). On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Kyoto Protocol. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas emissions at average of five per cent against 1990 levels over the five-year period 2008-2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

The United States has not entered into force of the Kyoto Protocol. However, other countries have entered, such as Australia, Canada, China, the European Union (Belgium, Denmark, Germany, the Hellenic Republic, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden, Great Britain, and Northern Ireland), Japan, Mexico, and New Zealand.

3.3.2 - National

Prior to the last decade, there have been no concrete federal regulations of greenhouse gases or major planning for climate change adaptation. The following are actions regarding the federal government, greenhouse gases, and fuel efficiency.

Greenhouse Gas Endangerment. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four greenhouse gases, including carbon dioxide, under Section 202(a)(1) of the Clean

Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing greenhouse gas emissions standards for vehicles, as discussed in the section "Clean Vehicles" below.

The EPA denied ten petitions for Reconsideration of the Endangerment and Cause or Contribute Findings in 2010. Some of the petitioners included the Ohio Coal Association, Peabody Energy Company, and the State of Texas.

In September 2011, the EPA Office of Inspector General evaluated the EPA's compliance with established policy and procedures in the development of the endangerment finding, including processes for ensuring information quality. The evaluation concluded that the technical support document should have had more rigorous EPA peer review.

In June 2012, a federal appeals court rejected a lawsuit by thirteen states against the EPA. The suit alleged that the EPA violated the law by relying almost exclusively on data from the United Nations Intergovernmental Panel on Climate Change rather than doing its own research or testing data according to federal standards. The states include Virginia, Texas, Alabama, Florida, Hawaii, Indiana, Kentucky, Louisiana, Mississippi, Nebraska, North Dakota, Oklahoma, South Carolina, South Dakota, and Utah. Virginia intends to petition the Supreme Court to review the case.

Clean Vehicles. Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a

national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program would apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this carbon dioxide level solely through fuel economy improvements. Together, these standards would cut carbon dioxide emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). The EPA and the National Highway Safety Administration are working on a second-phase joint rulemaking to establish national standards for light-duty vehicles for model years 2017 and beyond.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of *heavy-duty trucks and buses*. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year, which would achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

Mandatory Reporting of Greenhouse Gases. The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory greenhouse gas reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule. The rule requires reporting of greenhouse gas emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of greenhouse gas emissions are required to submit annual reports to the EPA.

New Source Review. The EPA issued a final rule on May 13, 2010 that establishes thresholds for greenhouse gases that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

EPA estimates that facilities responsible for nearly 70 percent of the national greenhouse gas emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest greenhouse gas emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units. As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new affected fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatt would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology.

Proposed Energy Tax Prevention Act of 2011. This Republican-submitted Act passed the House of Representatives in April 2011 but has not passed the Senate; therefore, it is not currently a law. If it is passed by the Senate and signed by the president, the Act would amend the Clean Air Act to prohibit the Administrator of the EPA from promulgating any regulation concerning, taking action relating to, or taking into consideration the emission of a greenhouse gas to address climate change. It would exclude greenhouse gases from the definition of "air pollutant" for purposes of addressing climate change. Items except from this Act include the following: implementation and enforcement of the light-, medium-, and heavy-duty vehicle greenhouse gas emission standards and Corporate Average Fuel Economy Standards; implementation of the renewable fuel program; federal research and programs addressing climate change; stratospheric ozone protection; and monitoring and reporting of carbon dioxide emissions. The Act provides that none of such exemptions shall cause a greenhouse gas to be subject to regulations relating to prevention of significant deterioration of air quality or considered an air pollutant for purposes of air pollution prevention and control permits.

Cap and Trade. Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. Successful examples in the United States include the Acid Rain Program and the NOx Budget Trading Program

in the northeast. There is no federal cap and trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

The Regional Greenhouse Gas Initiative is an effort to reduce greenhouse gases among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional greenhouse gas emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Its cap and trade program is estimated to be fully implemented in 2015.

3.3.3 - California

Title 24 and California Green Building Standards. Although these regulations are not specifically enacted to reduce greenhouse gases, they increase energy efficiency for new buildings, thus indirectly reducing greenhouse gas emissions. For a description, please refer to Section 1.3.3, Green Building Standards. Although an exact construction schedule is not known at this time, grading for the project is anticipated to begin in the first quarter of 2015. Grading operation for the project would sensationally occur in one phase in order to balance soils onsite from the two distinct lotting areas. There may be at least 4 mapped phases, with roughly 70 to 75 lots per phase. The duration of each construction phase will be from 1 to 2 years, and could vary depending on market conditions.

Pavley Regulations and Fuel Efficiency Standards. California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. The regulation was stalled by automaker lawsuits and by the EPA's denial of an implementation waiver. On January 21, 2009, the ARB requested that the EPA reconsider its previous waiver denial. On January 26, 2009, President Obama directed that the EPA assess whether the denial of the waiver was appropriate. On June 30, 2009, the EPA granted the waiver request. On September 8, 2009, the U.S. Chamber of Commerce and the National Automobile Dealers Association sued EPA to challenge its granting of the waiver to California for its standards. California assisted EPA in defending the waiver decision. The U.S. District Court for the District of Columbia denied the Chamber's petition on April 29, 2011.

The standards phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009-2012) standards will result in about a 22-percent reduction compared with the 2002 fleet, and the mid-term (2013-2016) standards will result in about a 30-percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than

relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

Executive Order S-3-05. Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for greenhouse gas emissions:

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

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

Low Carbon Fuel Standard - Executive Order S-01-07. The Governor signed Executive Order S-01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009. The Low Carbon Fuel Standard was challenged in the United States District Court in Fresno in 2011. The court's ruling issued on December 29, 2011 included a preliminary injunction against ARB's implementation of the rule. The Ninth Circuit Court of Appeals stayed the injunction on April 23, 2012 pending final ruling on appeal, allowing the ARB to continue to implement and enforce the regulation.

SB 97 and the CEQA Guidelines Update. Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code. It provided CEQA protection until January 1, 2010 for

transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of greenhouse gases would not violate CEQA.

On April 13, 2009, the Office of Planning and Research submitted to the Secretary for Natural Resources its recommended amendments to the CEQA Guidelines for addressing greenhouse gas emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting these amendments pursuant to Public Resources Code section 21083.05. Following a 55-day public comment period and two public hearings, the Natural Resources Agency proposed revisions to the text of the proposed Guidelines amendments. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

The CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of greenhouse gas emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

A new section, CEQA Guidelines Section 15064.4, was added to assist agencies in determining the significance of greenhouse gas emissions. The new section allows agencies the discretion to determine whether a quantitative or qualitative analysis is best for a particular project. However, little guidance is offered on the crucial next step in this assessment process—how to determine whether the project's estimated greenhouse gas emissions are significant or cumulatively considerable.

Also amended were CEQA Guidelines Sections 15126.4 and 15130, which address mitigation measures and cumulative impacts respectively. Greenhouse gas mitigation measures are referenced in general terms, but no specific measures are championed. The revision to the cumulative impact discussion requirement (Section 15130) simply directs agencies to analyze greenhouse gas emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable, however it does not answer the question of when emissions are cumulatively considerable.

Section 15183.5 permits programmatic greenhouse gas analysis and later project-specific tiering, as well as the preparation of Greenhouse Gas Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to proposed Section 15183.5(b).

In addition, the amendments revised Appendix F of the CEQA Guidelines, which focuses on Energy Conservation. The sample environmental checklist in Appendix G was amended to include greenhouse gas questions.

AB 32. The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. ARB is the state agency charged with monitoring and regulating sources of greenhouse gases. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB Board approved the 1990 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) on December 6, 2007 (California Air Resources Board 2007). Therefore, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a "business as usual" scenario were estimated in 2008 to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (California Air Resources Board 2008c). However, ARB updated the year 2020 business as usual (BAU) scenario in 2012 based on new and revised data. The updated forecast accounts for the effects of the recent economic recession, as well as new estimates for future fuel and energy demand, as well as other factors. The current year 2020 BAU forecast is 545 $MMTCO_2e$. Therefore, a 21.7 percent reduction from the year 2020 BAU forecast is required to achieve AB 32 reduction goal for year 2020.

The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 (California Air Resources Board 2008). The Scoping Plan identifies recommended measures for multiple greenhouse gas emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 greenhouse gas target include:

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

- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between "capped" and "uncapped" strategies. "Capped" strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. "Uncapped" strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional greenhouse gas emission reductions.[1]

SB 375. Passing the Senate on August 30, 2008, SB 375 was signed by the Governor on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of greenhouse gas emissions, which emits over 40 percent of the total greenhouse gas emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing greenhouse gas emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies. The Southern California Association of Governments has adopted emissions reductions for per capita light duty vehicles from 2005 levels of 7 percent by 2020 and 13 percent by 2035.

Concerning CEQA, SB 375, section 21159.28 states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth inducing impacts or (2) any

[1] On March 17, 2011, the San Francisco Superior Court issued a final decision in *Association of Irritated Residents v. California Air Resources Board* (Case No. CPF-09-509562). While the Court upheld the validity of the ARB Scoping Plan for the implementation of AB 32, the Court enjoined ARB from further rulemaking under AB 32 until ARB amends its CEQA environmental review of the Scoping Plan to address the flaws identified by the Court. On May 23, 2011, ARB filed an appeal. On June 24, 2011, the Court of Appeal granted ARB's petition staying the trail court's order pending consideration of the appeal. In the interest of informed decision-making, on June 13, 2011, ARB released the expanded alternatives analysis in a draft Supplement to the AB 32 Scoping Plan Functional Equivalent Document. The ARB Board approved the Scoping Plan and the CEQA document on August 24, 2011.

project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved sustainable communities strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets.
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies).
3. Incorporates the mitigation measures required by an applicable prior environmental document.

Executive Order S-13-08. Executive Order S-13-08 indicates that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the " . . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Renewable Electricity Standards. On September 12, 2002, Governor Gray Davis signed SB 1078 requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. The ARB Board approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23.

3.3.4 - Regional

The project is within the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

Threshold Development

A variety of agencies has developed greenhouse gas emission thresholds and/or has made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air

Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 $MTCO_2e$ per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The Bay Area Air Quality Management District and the San Joaquin Valley Air Pollution Control District have both developed greenhouse gas thresholds. However, those thresholds are not applicable to the project since the project is under the jurisdiction of the SCAQMD. The SCAQMD is in the process of developing thresholds, as discussed below.

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers, as follows:

- Tier 1 consists of evaluating whether or not a project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 is a screening threshold level to determine significance using a 90 percent emission capture rate approach and is 10,000 $MTCO_2e$ per year (with construction emissions amortized over 30 years and added to operational emissions).
- Tier 4 was not approved in the interim greenhouse gas threshold.
- Tier 5 would allow the project proponent to purchase offsite mitigation to reduce greenhouse gas emissions to less than the screening level (in Tier 3).

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the NOP (South Coast Air Quality Management District 2010). The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:

  - All land use types: 3,000 $MTCO_2e$ per year
  - Based on land use type: residential: 3,500 $MTCO_2e$ per year; commercial: 1,400 $MTCO_2e$ per year; or mixed use: 3,000 $MTCO_2e$ per year
- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual by a certain percentage; this percentage is currently undefined
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 $MTCO_2e$/SP/year for projects and 6.6 $MTCO_2e$/SP/year for plans;
  - Option 3, 2035 target: 3.0 $MTCO_2e$/SP/year for projects and 4.1 $MTCO_2e$/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD discusses its draft thresholds in the following excerpt (South Coast Air Quality Management District 2008b):

> The overarching policy objective with regard to establishing a GHG [greenhouse gas] significance threshold for the purposes of analyzing GHG impacts pursuant to CEQA is to establish a performance standard or target GHG reduction objective that will ultimate contribute to reducing GHG emissions to stabilize climate change. Full implementation of the Governor's Executive Order S-3-05 would reduce GHG emissions 80 percent below 1990 levels or 90 percent below current levels by 2050. It is anticipated that achieving the Executive Order's objective would contribute to worldwide efforts to cap GHG concentrations at 450 ppm, thus, stabilizing global climate.
>
> As described below, staff's recommended interim GHG significance threshold proposal uses a tiered approach to determining significance. Tier 3, which is expected to be the primary tier by which the AQMD will determine significance for projects where it is the lead agency, uses the Executive Order S-3-05 goal as the basis for deriving the screening level. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to some type of CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact.
>
> Therefore, the policy objective of staff's recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change. Further, a 90 percent

> emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2e/yr). In addition, these small projects would be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory.

In summary, the SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus, stabilizing global climate change.

3.3.5 - City of Corona

The City of Corona (City) has developed goals and policies within the Land Use and Environmental Resources sections of the City's General Plan, as well as the Corona Climate Action Plan, which are both aimed at improving the City's air quality and reducing greenhouse gas emissions.

City of Corona Climate Action Plan

The Corona Climate Action Plan (CAP) is an implementation tool for the greenhouse gas reduction strategies that can be found in the City's General Plan. The goals of the CAP are consistent with the targeted GHG reductions of AB 32; that is, to reduce Corona's GHG emissions to levels that are less-than, or equal-to, 1990's levels by year 2020. The CAP provides an analysis of the GHG emission sources that are attributed to the City; strategies for meeting regional, State, and Federal reduction targets; and methods for monitoring the City's progress towards reaching those goals. The CAP provides a basis for making GHG significance determinations under the CEQA review process for proposed development projects within the City.

City of Corona CEQA Thresholds and Screening Tables

In conjunction with the CAP, the City published CEQA thresholds and screening tables that aid in the CEQA review process, by making certain proposed development complies with specific reduction strategies in the CAP. For residential, commercial, and industrial projects, the Greenhouse Gasses Thresholds Points Worksheet provides a point system that is used to assign to the project's design features and incorporated mitigation. Projects that accumulate 100 points or more from the Greenhouse Gasses Thresholds Points Worksheet are not required to quantify project specific GHG emissions. In other words, a project that accumulates 100 points or more, will have a less than significant impact—both individually and cumulatively—for GHG emissions. However, the City does allow for a quantified significance analysis, and recommends application of the SCAQMD's

draft quantitative threshold as an alternative to use of the Greenhouse Gasses Thresholds Points Worksheet.

City of Corona General Plan

Air Quality Element

Goal 1.5

Distinct neighborhoods and districts that contribute to the identity, character, and image of Corona as a vital, livable, diverse, innovative, and environmentally sustainable community.

Policies

1.5.14: Require that developers demonstrate water conservation in the landscape design of their proposed projects, such as the use of drought tolerant species.

1.5.17: Require that new residential, commercial, office, and industrial development be designed to minimize consumption of and sustain scarce environmental resources through such methods as the following, as applicable to the type and scale of development:

- Site design—concentration and intermixing of development to minimize vehicular trips and promote walking, building orientation in consideration of solar access and heat gain and loss, and other
- Landscaping—drought-tolerant species, use of recycled water for irrigation, and other purposes
- Capture of rainwater and re-use on site
- Building design and construction materials—energy-and water efficient fixtures, recycled building materials, insulation and wall thickness, permeable paving surfaces, and comparable techniques

Goal 10.2

Ensure sustainable use of finite energy and water resources for the long-term use of residents and visitors of Corona.

Policies

10.2.5: Require the use of reclaimed water in common areas and landscape treatments for all proposed developments.

Goal 10.18

Improve air quality conditions within the Corona Planning Area by controlling point sources, reducing vehicle trips, and striving to achieve attainment of ozone, nitrogen dioxide, carbon monoxide, and sulfate standards as enforced by the South Coast Air Quality Management District.

Policies

10.18.3: Incorporate the provisions of the South Coast Air Quality Management District Management Plans as conditions of approval for all new development and re-development projects.

Goal 10.19

Reduce vehicle trip generation within Corona and its Planning Area through transit, shuttle, carpool and cycling facilities.

Policies

10.19.2: Require developers of major commercial centers and employment center projects, having 100 or greater employees to include transit amenities, access points, and availability of designated parking spaces for van and carpools, as part of the design of development.

10.19.4: Require new commercial and industrial development and redevelopment projects of sufficient scale and number of employees to provide adequate facilities for bicycles, employees, such as bicycle racks located close to front entranceways of buildings, and shower facilities with lockers.

Goal 10.20

Reduce criteria air pollutant emissions through more efficient land use planning and construction practices

Policies

10.20.4: Continue to create local employment opportunities by maintaining an adequate supply of designated commercial and industrial land supply, in accordance with the Land Use Element.

10.20.8: Reduce particulate emission from paved and unpaved roads, parking lots, and road and building construction, as required by the Southern California Air Quality Management District. Methods include but are not limited to:

- Maintaining construction equipment engines in good condition and in proper tune per manufacturer's specification for the duration of construction.
- Turning off construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, when not in use for more than five minutes.
- Encourage contractors to utilize alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) and low-emission diesel construction equipment to the extent that the equipment is readily available and cost effective.
- Rounding construction sites rather than electrical generators powered by internal combustion engines to the extent feasible.
- Implement dust control measures consistent with South Coast Air Quality Management District Rule 403-Fugitive Dust during the construction phases of new project development.
- Applying water and/or approved nontoxic chemical soil stabilizers according to manufacturer's specification to all inactive construction areas (previously graded areas that have been inactive for 10 or more days).
- Replacing ground cover in disturbed areas as quickly as possible.

- Enclosing, covering, watering twice daily, or applying approved chemical soil binders to exposed piles with 5 percent or greater silt content.
- Watering active grading sites at least twice daily.
- Suspending all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour over a 30-minute period.
- Covering or maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and the top of the trailer), in accordance with Section 23114 of the California Vehicle Code, in all trucks hauling dirt, sand, soil, or other loose materials.
- Sweeping streets adjacent to construction sites at the end of the day.
- Installing wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.
- Applying water three times daily or chemical soil stabilizers according to manufacturers' specifications to all nonpaved parking or staging areas or unpaved road surfaces.
- Posting and enforcing traffic speed limits of 15 miles per hour or less on all unpaved roads.

Goal 10.21

Reduce air quality degradation through energy conservation.

Policies

10.21.1: Reduce the amount of energy consumed by commercial and residential uses, as recommended by the Southern California Air Quality Management District.

10.21.2: Continue to require the use and installation of energy conservation features in all new construction projects and wherever feasible, retrofitting in existing and re-development projects.

SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

4.1 - Model Selection

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors are the emission rate of a pollutant given the activity over time; for example, grams of NO_X per horsepower hour. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2013.2.2 was developed in cooperation with the SCAQMD and other air districts throughout the state. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas emissions associated with construction and operation from a variety of land uses. CalEEMod was used to estimate emissions from project construction and operation. Specific parameters, assumptions, and inputs are provided in the following sections.

4.2 - Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$). Project areas of disturbance are provided in Table 5.

Table 5: Construction Acreages

Facilities	Acreage
Dwelling Units 1-291 Lots	67.46
Drainage Facilities	5.57
Streets (ROW-ROW)	23.68
Future Foothill Street (ROW-ROW)	8.19
Future Foothill Grading	17.04
Total Area Disturbed*	144.17

Facilities	Acreage
Notes: * Total area disturbed includes H.O.A maintained open space, and other spaces. ROW = right-of-way Source: KWC 13.	

The site will be mass graded together as one phase. The grading operation entails significant cuts and fills from the existing grades to the proposed ultimate roadway and pad grades within the project development. The anticipated maximum cut and fill depts. Are 160 feet and 145 feet, respectively. The estimated earthwork volume to be moved is approximately 5,000,000 cubic yards. The site is designed to balance the cut and fill within the project site with no import or export of material. The construction phase durations are currently unknown. Therefore, the CalEEMod default equipment and phase durations were used for a the purposes of a conservative CEQA analysis. The default durations for each construction phase from the CalEEMod model is shown in Table 6.

Table 6: Construction Duration

Phase	Duration (working days)
Site Preparation	120
Grading	310
Paving	75
Building Construction	1,110
Architectural Coating	75
Notes: Site Preparation and Grading duration based on mass grading of 144.17 acres. Paving, building construction, and architectural coatings based on development of 291 residential dwelling units on 67.46 acres. Source: CalEEMod and Michael Brandman Associates.	

Construction equipment assumptions are provided in Table 7. CalEEMod defaults were used for the construction equipment fleet. The activity for construction equipment is based on the horsepower and load factors of the equipment. In general, the horsepower is the power of an engine – the greater the horsepower, the greater the power. The load factor is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity.

Table 7: Construction Equipment Assumptions

Activity	Equipment	Number	Hours per day	Horse-power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	255	0.40
	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	2	8	162	0.38
	Graders	1	8	174	0.41
	Rubber Tired Dozers	1	8	255	0.40
	Scrapers	2	8	361	0.48
	Tractors/Loaders/Backhoes	2	8	97	0.37
Paving	Pavers	2	8	125	0.42
	Paving Equipment	2	8	130	0.36
	Rollers	2	8	80	0.38
Building Construction	Cranes	1	7	226	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
Coating	Air Compressors	1	6	78	0.48
Source: CalEEMod and Michael Brandman Associates.					

SCAQMD Rule 403 requires fugitive dust generating activities follow best available control measures to reduce emissions of fugitive dust. These measures are accounted for in CalEEMod as "mitigation" because the model categorizes the measures as "mitigation," even though they are technically not mitigation. The best available control measures and the associated measure in CalEEMod are displayed in Table 8.

The Annexation Area that is not part of the Project will be graded and potentially constructed upon at a later date and will be subject to all the same SCAQMD rules that the current Project will comply with. It is unknown at this time how the grading of the Annexation Area will be phased or divided up; therefore, those areas will be addressed as they become specific projects, and will be required to undergo a similar analysis as has been performed for this Project.

Table 8: Best Available Control Measures

Best Available Control Measure[1]	Associated Measure in CalEEMod [2]
Clearing and Grubbing 02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing. 02-2 Stabilize soil during clearing and grubbing activities. 02-3 Stabilize soil immediately after clearing and grubbing activities. **Earth Moving Activities** 08-1 Pre-apply water to depth of proposed cuts 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction 08-3 Stabilize soils once earth-moving activities are complete	Water exposed surfaces three times per day Soil stabilizers for unpaved roads Pre-water to 12%
Import/Export of Bulk Materials 09-1 Stabilize material while loading to reduce fugitive dust emissions. 09-2 Maintain at least six inches of freeboard on haul vehicles. 09-3 Stabilize material while transporting to reduce fugitive dust emissions. 09-4 Stabilize material while unloading to reduce fugitive dust emissions. 09-5 Comply with Vehicle Code Section 23114.	Water exposed surfaces three times per day
Landscaping 10-1 Stabilize soils, materials, slopes Guidance: Apply water to materials to stabilize; maintain materials in a crusted condition; maintain effective cover over materials; stabilize sloping surfaces using soil until vegetation or ground cover can effectively stabilize the slopes; hydroseed prior to rain season.	Replace ground cover in disturbed areas when unused for more than 10 days
Staging Areas 13-1 Stabilize staging areas during use by limiting vehicle speeds to 15 miles per hour.	Reduce speed on unpaved roads to 15 miles per hour.
Traffic Areas for Construction Activities 15-1 Stabilize all off-road traffic and parking areas. 15-2 Stabilize all haul routes. 15-3 Direct construction traffic over established haul routes. Guidance: Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; barriers can be used to ensure vehicles are only used on established parking areas/haul routes.	Water exposed surfaces three times per day
Sources: [1] SCAQMD Rule 403 [2] CalEEMod output in Appendix A.	

4.2.1 - Localized Analysis Methodology

To facilitate the localized assessment process, the SCAQMD provides a series of look-up tables that contain localized significance thresholds each Source Receptor Area within the basin (South Coast Air Quality Management District 2009). If onsite construction emissions exceed the localized significance thresholds, then the project would be considered to have a significant air quality impact. The current look-up tables are estimated by the SCAQMD based on air quality data from the years 2006 through 2008.

The localized significance thresholds appropriate to the project area were obtained from the look-up tables in the SCAQMD Final Localized Significance Threshold Methodology for a 1-acre project in Source Receptor Area 22. In addition to the dependence on geographic location within the SCAQMD (e.g., the Source Receptor Area), the localized thresholds also depend on the distance to the impacted receptor from the source of emissions. The distance to the nearest sensitive receptor is approximately 75 feet (23 meters) from the boundary of the project.

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011c). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain in its project design features or its mitigation measures the following parameters:

1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
2) The maximum number of acres disturbed on the peak day.
3) Any emission control devices added onto off-road equipment.
4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each of those activities is calculated differently in CalEEMod based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber tired dozers: 0.5 acres per 8-hour day
- Scrapers: 1 acre per 8-hour day

Therefore, the following acres are the quantity disturbed per day, per phase, according to the acreage disturbed quantities listed above:

- Site Preparation = 3.5 acres/day
- Mass Grading = 4 acres/day

4.3 - Operation

Operational emissions are those emissions that occur during operation of the project. The major sources are summarized below.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site. The emissions were estimated using the trip generation rate (9.52 daily trips per dwelling unit per day) from the Traffic Impact Analysis Report prepared by Linscott Law & Greenspan.

Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

Electricity

There would be emissions from the power plants that would generate electricity to be used by the project (for lighting, etc.). CalEEMod was used to estimate these emissions from the project.

Electricity Emission Factor

The default CalEEMod emission factors for Southern California Edison are as follows:

- Carbon dioxide: 630.89 pound per megawatt hour (lb/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

The project would be fully constructed by year 2021; therefore, it is assumed that the Renewable Portfolio Standards would have taken effect. The Renewable Portfolio Standard requires that electricyt providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. In the year 2006, Southern California Edison had 16.6 percent renewable energy in its portfolio (California Public Utilities Commission 2011). Therefore, an additional 16.4 percent reduction would be anticipated by the year 2020. The emission factors for 2021 therefore are estimated by reducing unadjusted (pre-16.6 percent renewable number) 2006 emission factors and are as follows:

- Carbon dioxide: 515.16 pound per megawatt hour (lb/MWh)

- Methane: 0.023 lb/MWh
- Nitrous oxide: 0.009 lb/MWh

Solid Waste

Greenhouse gas emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the greenhouse gas emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

5.1 - CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

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

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

d) Expose sensitive receptors to substantial pollutant concentrations; or

e) Create objectionable odors affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable SCAQMD thresholds and methodologies are contained under each impact statement below.

5.2 - Impact Analysis

Consistency with Air Quality Management Plan

Impact AIR-1:	**The project would not conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

According to the 1993 SCAQMD Handbook, there are two key indicators of consistency with the AQMP:

1. Indicator: Whether the 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 timely attainment of air quality standards or the interim emission reductions specified in the AQMP. Project applicability: applicable and assessed below.
2. Indicator: A project would conflict with the AQMP if it will exceed the assumptions in the AQMP in 2010 or increments based on the year of project build-out and phase. The Handbook 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 AQMP are not available. Therefore, this indicator is not applicable. Project applicability: not applicable.

Considering the recommended criteria in the SCAQMD's 1993 Handbook, this analysis utilizes the following criteria to address this potential impact:

- Step 1: Project's contribution to air quality violations (SCAQMD's first indictor)
- Step 2: Assumptions in AQMP (SCAQMD's second indictor)
- Step 3: Compliance with applicable emission control measures in the AQMPs

Step 1: Project's Contribution to Air Quality Violations

According to the SCAQMD, the project is consistent with the AQMP if the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (South Coast Air Quality Management District 1993, page 12-3).

As shown in Impact AIR-2, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

If a project's emissions exceed the SCAQMD regional thresholds for NO_X, VOC, PM_{10}, or $PM_{2.5}$, it follows that the emissions could cumulatively contribute to an exceedance of a pollutant for which the basin is in nonattainment (ozone, nitrogen dioxide, PM_{10}, $PM_{2.5}$) at a monitoring station in the basin. An exceedance of a nonattainment pollutant at a monitoring station would not be consistent with the goals of the AQMP - to achieve attainment of pollutants.

As discussed in Impact AIR-3, the project would not exceed the regional significance threshold for any nonattainment pollutant or ozone precursors. Therefore, the project would is consistent with the SCAQMD regional thresholds and is consistent with the AQMP. The project meets this criterion.

Step 2: Assumptions in AQMP

It is unknown if the land uses in city/county general plans are used in the projections in the AQMPs. Nevertheless, a discussion in this regard is included in this analysis.

According to Chapter 12 of the SCAQMD's CEQA Air Quality Handbook, the purpose of the consistency finding is to determine whether a project is inconsistent with the assumptions and objectives of the regional air quality plans, and thus whether it would interfere with the region's ability to comply with federal and State air quality standards. If a project is inconsistent, local governments need to consider project modifications or inclusion of mitigation to eliminate the inconsistency. Consistency with the AQMP implies that a project is consistent with the goals, objectives, and assumptions in the respective plan to achieve the national and State air quality standards. To assess the environmental impacts of new or renovated developments accurately, environmental pollution and population growth are projected for future scenarios.

Since the AQMP could be based on local general plans (there is no direct evidence that suggests this), projects that are deemed consistent with the general plan are found to be consistent with the AQMP. Since the project's intended land use is not consistent with the existing non-operational land use, implementation of the project would require amendments to the City's zoning designations for the project site. However, the project would be within the City's General Plan designation as amended and is consistent with the adopted SCAQMD AQMP according to this criterion.

Step 3: Control Measures

This step involves assessing the project's compliance with the control measures in the AQMPs.

2003 AQMP. The 2003 AQMP contains a number of land use and transportation control measures including the following: the District's Stationary and Mobile Source Control Measures; State Control Measures proposed by ARB; and Transportation Control Measures provided by Southern California Association of Governments. ARB's strategy for reducing mobile source emissions include the following approaches: new engine standards; reduce emissions from in-use fleet, require clean fuels, support alternative fuels and reduce petroleum dependency, work with EPA to reduce emissions from national and state sources, and pursue long-term advanced technology measures (AQMP 2003, page 4-25). Transportation control measures provided by Southern California Association of Governments include those contained in the Regional Transportation Plans, the most current version of which is the 2008 Regional Transportation Plan. The Regional Transportation Plan has control measures to reduce emissions from on-road sources by incorporating strategies such as high occupancy vehicle interventions, transit, and information-based technology interventions (AQMP 2003, page 4-19). The

project indirectly would comply with the control measures set by ARB and Southern California Association of Governments.

2007 AQMP. The focus of the 2007 AQMP is to demonstrate attainment of the federal $PM_{2.5}$ ambient air quality standard by 2015 and the federal 8-hour ozone standard by 2024, while making expeditious progress toward attainment of state standards. This is to be accomplished by building upon improvements from the previous plans and incorporating all feasible control measures while balancing costs and socioeconomic impacts. The 2007 AQMP indicates that $PM_{2.5}$ is formed mainly by secondary reactions or sources. Therefore, instead of reducing fugitive dust, the strategy for reducing $PM_{2.5}$ focuses on reducing precursor emissions of SO_X, directly emitted $PM_{2.5}$, NO_X, and VOC.

The Final 2007 AQMP control measures consist of four components. The first component is SCAQMD's Stationary and Mobile Source Control Measures. The Final 2007 AQMP includes 30 short-term and mid-term stationary and seven mobile source control measures for SCAQMD implementation. A complete listing of the measures is in the 2007 AQMP and includes measures such as VOC reductions from gasoline transfer and dispensing facilities, further NO_X reductions from space heaters, localized control program for PM emission hot spots, urban heat island, energy efficiency and conservation, etc. Some of the measures will become new rules and some will be amendments to existing rules. When the rules pass, the owner-operator will follow the applicable rules.

The second component is ARB's Proposed State Strategy, which includes short- and mid-term control measures aimed at reducing emissions from sources that are primarily under state jurisdiction, including on-road and off-road mobile sources, and consumer products. These measures are required in order to achieve the remaining emission reductions necessary for $PM_{2.5}$ attainment. ARB's strategy includes measures such as improvements to California's Smog Check Program, expanded passenger vehicle retirement, cleaner in-use heavy-duty trucks, reductions from port related sources, cleaner off-road equipment, evaporative and exhaust strategies, pesticide strategies, etc. When these measures are implemented by the ARB, the project would be required to follow them.

The third component is SCAQMD Staff's Proposed Policy Options to Supplement ARB's Control Strategy. SCAQMD staff believe that a combination of regulatory actions and public funding is the most effective means of achieving emission reductions. As such, the 2007 Final AQMP proposes three policy options for the decision makers to consider in achieving additional reductions. The first option is to incorporate the SCAQMD proposed additional control measures as a menu of selections further reducing emissions from sources primarily under state and national jurisdiction. The second option is to have the State fulfill its NO_X emission reduction obligations under the 2003 AQMP by 2010 for its short-term defined control measures plus additional reductions needed to meet the NO_X emission target between 2010 and 2014. The third option is based on the same rate of progress under Policy Option 1, but it relies heavily on public funding assistance to achieve the needed NO_X

reductions via accelerated fleet turnover to post-2010 on-road emission standards or the cleanest off-road engine standards in effect today or after 2010. This strategy does not apply to the project.

The fourth component consists of Regional Transportation Strategy and Control Measures provided by Southern California Association of Governments. Transportation plans within the basin are statutorily required to conform to air quality plans in the region, as established by the 1990 Federal Clean Air Act and reinforced by other Acts. The region must demonstrate that its transportation plans and programs conform to the mandate to meet the federal ambient air quality standards in a timely manner. The Regional Transportation Plan, prepared by the Southern California Association of Governments, is developed every 4 years with a 20-year planning horizon to meet the long-term transportation planning requirements for emission reductions from on-road mobile sources within the basin. The biennial Regional Transportation Improvement Program requires that the short-term implementation requirements of the Transportation Conformity Rule be met by Southern California Association of Governments. The first 2 years of the program are fiscally constrained and demonstrate timely implementation of a special category of transportation projects called Transportation Control Measures. In general, Transportation Control Measures are those projects that provide emission reductions from on-road mobile sources, based on changes in the patterns and modes by which the regional transportation system is used. Strategies are grouped into three categories: high occupancy vehicle strategy, transit and systems management, and information-based technology (traveling during a less congested time of day). Southern California Association of Governments approved the transportation measures in the Regional Transportation Plan, which have been included in the region's air quality plans. The Transportation Control Measures will be implemented and will subsequently reduce emissions in the basin.

2012 AQMP. The 2012 AQMP was adopted December 7, 2012. The purpose of the 2012 AQMP for the Basin is to set forth a comprehensive and integrated program that will lead the Basin into compliance with the federal 24-hour PM2.5 air quality standard, and to provide an update of the Basin's projections in meeting the federal 8-hour ozone standards. Similarly to the prior AQMPs, the project would comply with all applicable rules and regulations enacted as part of the AQMP. In addition, as discussed in the Regulatory section, the AQMP relies upon the Southern California Association of Governments regional transportation strategy, which is in its adopted 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2011 Federal Transportation Improvement Program. Included in the RTP/SCS are regional transportation strategy and transportation control measures including the following: active transportation (non-motorized transportation – biking and walking); transportation demand management; transportation system management; transit; passenger and high-speed rail; goods movement; aviation and airport ground access; highways; arterials; and operations and maintenance. Construction and operation of the project would not hinder or impede implementation of the RTP/SCS.

Summary

In summary, the project would comply with all applicable rules and regulations. In addition, the project would not impede attainment because its emissions are less than the SCAQMD's regional significance thresholds.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Potential for Air Quality Standard Violation

Impact AIR-2:	**The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Impact Analysis

Two criteria are used to assess the significance of this impact: (1) the localized construction analysis and (2) the CO hot spot analysis.

Localized Construction Analysis

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds (also referred to as a LST analysis). Localized significance thresholds represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable state or federal ambient air quality standard. Localized significance thresholds were developed in recognition of the fact that criteria pollutants such as CO, NO_X, and PM_{10} and $PM_{2.5}$ in particular, can have local impacts at nearby sensitive receptors as well as regional impacts. The localized significance thresholds are developed for each source receptor area and are applicable to NO_X, CO, PM_{10}, and $PM_{2.5}$.

The localized significance thresholds appropriate to the project area were obtained from the look-up tables in the SCAQMD Final Localized Significance Threshold Methodology for a 5-acre project in Source Receptor Area 22. In addition to the dependence on geographic location within the SCAQMD (e.g., the Source Receptor Area), the localized thresholds also depend on the distance to the impacted receptor from the source of emissions. The nearest sensitive receptor approximately 23 meters from the boundary of the project.

The localized assessment methodology limits the emissions in the analysis to those generated from onsite activities. The onsite emissions during construction are compared with the localized significance thresholds and are summarized in Table 9. The onsite emissions were generated as discussed in the regional analysis. Onsite emissions are from fugitive dust during grading and off-

road diesel emissions. As shown in Table 9, unmitigated emissions during construction do not exceed the localized significance thresholds.

Table 9: Localized Significance Analysis (Construction)

Activity	Onsite Emissions (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation	56.89	42.63	0.98	6.71
Grading	79.05	50.84	7.02	4.91
Paving	22.39	14.82	1.26	1.16
Building Construction	26.41	18.13	1.78	1.67
Architectural Coating	1.53	1.82	0.09	0.09
Maximum Daily Emissions	**79.05**	**50.84**	**7.02**	**6.71**
Localized Significance Threshold	**270**	**1,700**	**12**	**8**
Exceed Threshold?	**No**	**No**	**No**	**No**

Notes:
Each of the above activities does not occur at the same time; therefore, the maximum daily emissions represent the maximum emissions that would occur in one day.
Source of emissions: Michael Brandman Associates 2014.
Source of thresholds: South Coast Air Quality Management District 2009, for Source Receptor Area 22, 5-acre project with a receptor at a distance of 25 meters.

As shown with the information above, the SCAQMD localized thresholds would be not exceeded during construction for any criteria pollutant emissions. Therefore, the short-term localized emissions are considered to have a less than significant local impact.

The localized construction analysis uses thresholds that represent the maximum project emissions that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard (South Coast Air Quality Management District 2008a). If the project results in emissions that do not exceed the localized significance thresholds, it follows that those emissions would not cause or contribute to a local exceedance of the appropriate ambient air quality standard. The localized construction analysis demonstrates that the project would not exceed the localized significance thresholds for CO, nitrogen dioxide, PM_{10}, or $PM_{2.5}$. Therefore, the project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation during construction.

Carbon Monoxide Hot Spot Analysis

Carbon monoxide (CO) "hot spot" thresholds ensure that emissions of CO associated with traffic impacts from a project in combination with CO emissions from existing and forecasted regional traffic do not exceed state or federal standards for CO at any traffic intersection impacted by the project. Project concentrations may be considered significant if a CO hot spot intersection analysis

determines that project generated CO concentrations cause a localized violation of the state CO 1-hour standard of 20 ppm, state CO 8-hour standard of 9 ppm, federal CO 1-hour standard of 35 ppm, or federal CO 8-hour standard of 9 ppm.

A carbon monoxide (CO) hot spot is a localized concentration of CO that is above the state or federal 1-hour or 8-hour CO ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. To provide a worst-case scenario, CO concentrations are estimated at project-impacted intersections, where the concentrations would be the greatest.

A Traffic Impact Analysis Report was prepared by Linscott Law & Greenspan. The Traffic Impact Analysis report found that project-affected intersections would be significantly impacted during Existing with Project, Year 2020 with Project, and Year 2035 with Project Scenarios. However, those intersections would operate at acceptable levels after incorporation of mitigation. Therefore, the project would not generate a significant source traffic congestion and idling or slow-moving vehicles new source of on-road traffic after incorporation of all mitigation contained within the Traffic Impact Analysis, and would result in a less than significant CO hotspot impact.

Level of Significance Before Mitigation
Potentially significant impact.

Mitigation Measures
All mitigation from within the Traffic Impact Analysis Report prepared by Linscott Law & Greenspan, April 4, 2013.

Level of Significance After Mitigation
Less than significant impact.

Cumulative Increase of Nonattainment Pollutants

Impact AIR-3:	**The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).**

Impact Analysis
To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the regional significance thresholds. This is an approach recommended by the SCAQMD in its comment letters.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

Note that the voluntary approaches in the SCAQMD's 1993 Handbook are not used in this analysis for the following reasons. The first approach in the 1993 Handbook is a 1-percent-per-year reduction (or 18 percent over 18 years to the year 2010) in project emissions of VOC, NO_X, CO, PM_{10}, and SO_X. This approach is not straightforward and operational reductions are not easy to quantify. The second approach is not applicable because it relies on SCAQMD Regulation XV, which was repealed in 1995 and therefore is not applicable. The third approach is to reduce the rate of growth in vehicle miles traveled and trips. In this approach, the rate of growth in vehicle miles traveled and trips "should be held to the rate of population or household growth." Data that was used by Southern California Association of Governments in the AQMP should be used in this approach; however, that data is not available. Therefore, the approaches in the 1993 SCAQMD Handbook pertaining to cumulative impacts are not used.

Step 1: Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The South Coast Air Basin is in nonattainment for PM_{10}, $PM_{2.5}$, nitrogen dioxide, and ozone. Therefore, if the project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the regional threshold for NO_X or VOC, then it follows that the project would contribute to a cumulatively considerable impact for ozone. If the project exceeds the NO_X threshold, it could contribute cumulatively to nitrogen dioxide concentrations.

Regional emissions include those generated from all onsite and offsite activities. Regional significance thresholds have been established by the SCAQMD because emissions from projects in the Basin can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the South Coast Air Basin region with regional emissions in excess of any of the thresholds presented in Table 10 (for construction) and Table 11 (for operation) are considered to have a significant regional air quality impact.

Construction Regional Emissions

Table 10 summarizes construction-related emissions (without mitigation). For the assumptions used in generating the emissions, please refer to Section 4 of this report. The information shown in Table

10 indicates that the SCAQMD regional emission thresholds would not be exceeded. Therefore, the short-term construction emissions are considered to have a less than significant regional impact.

Table 10: Construction Air Pollutant Emissions

Source	Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	5.34	56.98	43.77	0.04	1.18	6.77
Grading	6.89	79.15	52.10	0.06	7.24	4.97
Paving	2.15	22.45	15.67	0.02	1.43	1.21
Building Construction	3.68	29.19	26.02	0.05	3.20	2.09
Architectural Coatings	54.90	1.59	2.59	0.01	0.33	0.16
Maximum Daily Emissions	**54.90**	**79.15**	**52.10**	**0.06**	**7.24**	**6.77**
Significance Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Significant Impact?	**No**	**No**	**No**	**No**	**No**	**No**

Notes:
The maximum daily emissions refer to the maximum emissions that would occur in one day; it was assumed that the grading activities do not occur at the same time as the other construction activities; therefore, their emissions are not summed.
VOC = volatile organic compounds NO_X = nitrogen oxides CO = carbon monoxide
SO_X = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source of emissions: Appendix A: CalEEMod Output.
Source of thresholds: South Coast Air Quality Management District 2011a.

Operational Regional Emissions

Operational emissions from emission sources generated both onsite and offsite as derived from CalEEMod are shown in Table 11 for the summer season. As shown in Table 11, the project's emissions do not exceed the SCAQMD's regional thresholds and are considered less than significant.

Table 11: Operational Emissions (Summer)

Source	Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	12.70	0.28	24.09	0.00	0.46	0.46
Energy	0.23	1.97	0.84	0.01	0.16	0.16
Mobile	8.43	23.08	91.35	0.31	21.69	6.08
Total	21.36	25.33	116.28	0.33	22.31	6.70
Significance Threshold	55	55	550	150	150	55
Significant Impact?	No	No	No	No	No	No

Source	Emissions (pounds per day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Notes: VOC = volatile organic compounds NO_X = nitrogen oxides CO = carbon monoxide SO_X = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter Source of emissions: Appendix A: CalEEMod Output. Source of thresholds: South Coast Air Quality Management District 2011a.						

Effective April 12, 2010, EPA promulgated a new federal ambient air quality standard for nitrogen dioxide. The current SCAQMD significance thresholds do not take into account this new standard. The SCAQMD may update its significance thresholds for NO_X and nitrogen dioxide in late 2010; however, there is no indication regarding what the new thresholds will be. The new federal standard of 0.100 ppm is based on the 3-year average of the 98th percentile of the daily maximum 1-hour average. The state standard is 0.18 ppm, which is not to be exceeded at all. Therefore, the two cannot be easily compared. As shown in Table 1, the maximum 1-hour nitrogen dioxide concentration in the Basin was 0.057 ppm in 2011. Furthermore, the average of the two most recent years of data for the 98^{th} percentile of nitrogen dioxide is 0.057 ppm. The 98^{th} percentile averaged over three years is below the maximum concentrations. This analysis uses the current SCAQMD thresholds to determine significance for nitrogen dioxide and NO_X.

The regional significance analysis of construction and operational emissions demonstrates that emissions are below the SCAQMD regional significance thresholds. Therefore, the project does not contribute to a cumulative impact according to this criterion.

Step 2: Plan Approach

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current CEQA Guidelines, which includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. This analysis is based on the 2003 and 2007 AQMPs. The South Coast Air Basin is in nonattainment for ozone, particulate matter (PM_{10} and $PM_{2.5}$), and nitrogen dioxide, which means that concentrations of those pollutants currently exceed the ambient air quality standards for those

pollutants. When concentrations of ozone, PM_{10}, $PM_{2.5}$, and nitrogen dioxide exceed the ambient air quality standard, then those sensitive to air pollution (i.e., children, elderly, sick) could experience health effects such as decrease of pulmonary function and localized lung edema in humans and animals, increased mortality risk, and risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans.

Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The AQMPs describe and evaluate the future projected emissions sources in the South Coast Air Basin and sets forth a strategy to meet both state and federal Clean Air Act planning requirements and federal ambient air quality standards. Therefore, the AQMPs are relevant plans for a CEQA cumulative impacts analysis. The 2003 AQMP updates the attainment demonstration for the federal standards for ozone and PM_{10}; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future; and updates the maintenance plan for the federal nitrogen dioxide standard that the South Coast Air Basin has met since 1992. The 2007 AQMP focuses on ozone and $PM_{2.5}$. The AQMP also incorporates significant new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling.

The geographic scope for cumulative criteria pollution from air quality impacts is the South Coast Air Basin, because that is the area in which the air pollutants generated by the sources within the basin circulate and are often trapped. The SCAQMD is required to prepare and maintain an AQMP and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it is recognized that changes in land use and circulation planning are necessary to maintain clean air. The SCAQMD evaluated the entire Basin when it developed the AQMP.

In accordance with CEQA Guidelines section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously approved plan or mitigation program. As identified in Impact AIR-1, the project complies with the control measures in the 2003 and the 2007 AQMP and all of the SCAQMD's applicable rules and regulations. However, because the project is less than the SCAQMD's CEQA significance thresholds, the analysis contained in Impact AIR-1 demonstrates that the project is consistent with the most recent AQMP and State Implementation Plan without mitigation. Therefore, the project presents a less than significant impact according to this criterion.

Step 3: Cumulative Health Impacts

The Basin is in nonattainment for ozone, nitrogen dioxide, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals

(such as the elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 3. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

The regional analysis of construction and operational emissions indicates that the project would not exceed the SCAQMD regional significance thresholds. The project would not result in cumulative health impacts.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Receptors

Impact AIR-4:	**The project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008a). Commercial and industrial facilities are not included in the definition because employees do not typically remain onsite for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities would be considered sensitive receptors for those purposes.

The closest sensitive receptors are residences located approximately 23 meters north and northeast of the project site.

Localized Significance Threshold Analysis

The localized construction analysis uses thresholds that represent the maximum emissions for a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard (South Coast Air Quality Management District 2008a). The

thresholds are developed based on the ambient concentrations of that pollutant for each source receptor area and on the location of the sensitive receptors. If the project results in emissions under those thresholds, it follows that the project would not cause or contribute to an exceedance of the standard. The standards are set to protect the health of sensitive individuals. If the standards are not exceeded at the sensitive receptor locations, it follows that the receptors would not be exposed to substantial pollutant concentrations.

As identified in Impact AIR-2, the localized construction analysis demonstrated that the project would not exceed the localized thresholds for CO, nitrogen dioxide, PM_{10}, or $PM_{2.5}$. Therefore, during construction, the project would not expose sensitive receptors to substantial pollutant concentrations of CO, nitrogen dioxide, PM_{10}, or $PM_{2.5}$.

Criteria Pollutant Analysis

Emissions of NO_X and VOC (ozone precursors) during construction and operation from only the project would not expose sensitive receptors to substantial pollutant concentrations. (See the Cumulative Increase of Nonattainment Pollutants impact analysis for an assessment of the cumulative contribution of ozone precursors.)

A CO hot spot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project. The CO hot spot analysis demonstrated that emissions of CO during operation would not result in an exceedance of the most stringent ambient air quality standards for CO after incorporation of mitigation measures. The standards are set to protect the health of sensitive individuals. If the standards are not exceeded, then the sensitive individuals would not be significantly impacted. Therefore, according to this criterion, air pollutant emissions during operation would result in a less than significant impact.

In summary, the project would result in a less than significant exposure of sensitive receptors to substantial pollution concentrations from construction or operation.

Toxic Air Pollutants – Onsite Workers

There are a variety of state and national programs that protect workers from safety hazards, including high air pollutant concentrations (California Division of Occupational Safety and Health and Centers for Disease Control and Prevention 2012)

Onsite workers are not required to be addressed through this health risk assessment process. A document published by the California Air Pollution Control Officers Association (2009), Health Risk Assessments for Proposed Land Use Projects, indicates that onsite receptors are included in risk assessments if they are persons not employed by the project. Persons not employed by the project would not remain onsite for any significant period. Therefore, a health risk assessment for onsite workers is not required or recommended.

Toxic Air Pollutants

The construction equipment would emit diesel particulate matter, which is a carcinogen. However, the diesel particulate matter emissions are short-term in nature. Determination of risk from diesel particulate matter is considered over a 70-year exposure time. Guidance published by the California Air Pollution Control Officers Association (2009), Health Risk Assessments for Proposed Land Use Projects, does not include guidance for health risks from construction projects addressed in CEQA; risks near construction projects are expected to be included later when the toxic emissions from construction activities are better understood. Additionally, the nearest sensitive receptors (residences) would be located approximately 23 meters from the project site. Therefore, considering the dispersion of the emissions and the short time frame, exposure to diesel particulate matter is anticipated to be less than significant.

Toxic Air Pollutants - Operation

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (California Air Resources Board 2005), including recommendations for distances between sensitive receptors and certain land uses. These recommendations are assessed as follows.

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The project does not include the construction or operation of a heavily traveled road.
- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The project would not result in a new distribution center.
- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities. The project does not include any fueling stations.
- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The project would not result in a new dry cleaning operation.

Therefore, the project would result in a less than significant impact to sensitive receptors from project operation.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

All mitigation from within the Traffic Impact Analysis Report prepared by Linscott Law & Greenspan, April 4, 2013.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors

Impact AIR-5:	**The project would not create objectionable odors affecting a substantial number of people.**

Impact Analysis

Background Information

Odors can cause a variety of responses. The impact of an odor results from interacting factors such as frequency (how often), intensity (strength), duration (in time), offensiveness (unpleasantness), location, and sensory perception.

Odor is typically a warning system that prevents animals and humans from consuming spoiled food or toxic materials. Odor-related symptoms reported in a number of studies include nervousness, headache, sleeplessness, fatigue, dizziness, nausea, loss of appetite, stomach ache, sinus congestion, eye irritation, nose irritation, runny nose, sore throat, cough, and asthma exacerbation (South Coast Air Quality Management District 2007b).

The SCAQMD's role is to protect the public's health from air pollution by overseeing and enforcing regulations (South Coast Air Quality Management District 2007b). The SCAQMD's resolution activity for odor compliance is mandated under California Health & Safety Code Section 41700, and falls under SCAQMD Rule 402. This rule on Public Nuisance Regulation states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

The SCAQMD indicates that the number of overall complaints has declined over the last five years. Over the last four years, odor complaints make up 50 to 55 percent of the total nuisance complaints. Over the past decade, odors from paint and coating operations have decreased from 27 to 7 percent and odors from refuse collection stations have increased from 9 to 34 percent (South Coast Air Quality Management District 2007b).

Project Analysis

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The project does not contain land uses typically associated with emitting objectionable odors. In addition, the project is not located within the screening distances of land uses typically considered sources of significant objectionable odor.

Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required

Level of Significance After Mitigation

Less than significant impact.

SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

6.1 - CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on greenhouse gases, the type, level, and impact of emissions generated by the project must be evaluated.

The following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

6.2 - Impact Analysis

Greenhouse Gas Inventory

Impact AIR-6:	**The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.**

Impact Analysis

Thresholds of Significance for this Project

As stated in Section 3.3.5, the City of Corona allows project to utilize either the SCAQMD's draft thresholds or the City's adopted Greenhouse Gasses Thresholds Points Worksheet. City Corona comments on the project, dated December 19, 2012, Community Development Department comment 1PL-006 (2) demonstrates that the use of the SCAQMD's draft threshold is considered equivalent to the use of the City's Greenhouse Gasses Thresholds Points Worksheet. To determine whether the project is significant, this project uses the SCAQMD draft local agency tiered threshold. The threshold is as follows:

- Tier 1: The project is not exempt under CEQA; go to Tier 2.
- Tier 2: There is no greenhouse gas reduction plan applicable to the project; go to Tier 3.
- Tier 3: project greenhouse gas emissions compared with the threshold: 3,500 $MTCO_2e$ per year (see analysis below).
- Tier 4, option 1: Reduce greenhouse gas emissions from business as usual* by 21.7 percent. The California 2020 emissions target is 427 $MMTCO_2e$ and the 2020 baseline (without any AB

32 related regulations) is 545 $MMTCO_2e$. Therefore, a 21.7 percent reduction is required to reduce emissions to the target .

- Tier 4, option 3: 4.8 $MTCO_2e$/SP/year (see analysis below).

In December 2007, ARB approved a year 2020 emissions limit of 427 MMTCO2e (471 million tons) for the State. In 2008, the year 2020 "business as usual" (BAU) scenario forecast was estimated to be 596 $MMTCO_2e$, meaning the year 2020 target requires a total emissions reduction of 169 $MMTCO_2e$. Therefore, it was understood in 2008 that a 28.5 percent from the projected BAU scenario for year 2020 (i.e. 28.5 percent of 596 $MMTCO_2e$) would be required to meet the AB 32 emission reduction goal. However, ARB updated the year 2020 BAU scenario in 2012 based on new and revised data. The updated forecast accounts for the effects of the recent economic recession, as well as new estimates for future fuel and energy demand, as well as other factors. The current year 2020 BAU forecast is 545 $MMTCO_2e$. Therefore, a 21.7 percent reduction from the year 2020 BAU forecast is required to achieve AB 32 reduction goal for year 2020.

Section 15064.4(b) of the CEQA Guideline amendments for greenhouse gas emissions state that a lead agency may take into account the following three considerations in assessing the significance of impacts from greenhouse gas emissions.

Consideration #1: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.

Consideration #2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

Consideration #3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Greenhouse Gas Inventory

This analysis is restricted to greenhouse gases identified by AB 32, which include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of greenhouse gases during construction and operation, including several defined by AB 32 such as carbon dioxide, methane, and nitrous oxide.

The project may also emit greenhouse gases that are not defined by AB 32. For example, the project may generate aerosols. Aerosols are short-lived particles, as they remain in the atmosphere for about

one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (Intergovernmental Panel on Climate Change 2007a). Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities. The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain greenhouse gases defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

An upstream emission source (also known as life cycle emissions) refers to emissions that were generated during the manufacture of products to be used for construction of the project. Upstream emission sources for the project include but are not limited emissions from the manufacture of cement, emissions from the manufacture of steel, and/or emissions from the transportation of building materials to the seller. The upstream emissions were not estimated because they are not within the control of the project and to do so would be speculative. Additionally, the California Air Pollution Control Officers Association White Paper on CEQA and Climate Change supports this conclusion by stating, "The full life-cycle of GHG [greenhouse gas] emissions from construction activities is not accounted for . . . and the information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level" (California Air Pollution Control Officers Association 2008). Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream /life cycle emissions are speculative and no further discussion is necessary.

Construction

The project would emit greenhouse gases from upstream emission sources and direct sources (combustion of fuels from worker vehicles and construction equipment). For assumptions used in estimating these emissions, please refer to Section 4. Greenhouse gas emissions from project construction equipment and worker vehicles are shown in Table 12. The emissions are from all phases of construction.

Table 12: Construction Greenhouse Gas Emissions

Phase	Annual Emissions (MTCO2e)		
	Onsite	Offsite	Total
Site Preparation	225.21	10.46	235.67
Grading (2015)	509.51	16.24	525.75
Paving (2016)	79.30	5.25	84.55
Building Construction (2017)	312.93	198.01	510.94
Building Construction (2018)	310.57	192.78	503.35
Building Construction (2019)	307.09	187.06	494.15
Building Construction (2020)	303.70	181.40	485.09
Building Construction (2021)	76.51	45.24	121.75
Architectural Coatings (2021)	9.59	6.17	15.76
Total			2,997.02
Averaged over 30 years	—	—	99.23

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents (includes carbon dioxide, methane, and/or nitrous oxide).
Source: CalEEMod output (Appendix A).

The draft SCAQMD GHG Threshold Guidance document released in October 2008 (SCAQMD 2008b) recommends that construction emissions be amortized for a project lifetime of 30 years to ensure that GHG reduction measures address construction GHG emissions as part of the operational reduction strategies. Therefore, the project's total construction emissions were distributed over 30 years to yield an average of 99.23 $MtCO_2e$ per year. The annual average construction emissions are included in the analysis of the project's total operational emissions below in Table 13.

Operation

Operational or long-term emissions occur over the life of the project. For assumptions used in estimating the emissions, please refer to Section 4 of this report. The operational and annualized construction emissions for the project are shown in Table 13 for year 2021. Carbon sequestration from the approximately 6,100 anticipated trees is incorporated into the analysis using an annual greenhouse gas sequestration rate of 0.0354 $MTCO_2e$ per tree per year.

As shown in Table 13, the major sources of operational greenhouse gases are from vehicles, contributing approximately 74 percent of the subtotal emissions. Emission factors from 2005 are utilized to estimate emissions that would occur under the BAU scenario, which is growth in the absence of post-AB 32 regulatory reductions such as Pavely Standards for vehicles and the 2013 Title 24 Standards for building envelope energy efficiency.

Table 13: Project Operational Greenhouse Gases

Source	Emissions ($MTCO_2e$ per year)		Percent Reduction from BAU
	2005 BAU	2021 Project	
Area	64.83	64.76	0.01 %
Energy	1,169.63	952.29	18.6 %
Mobile	4,994.84	3,535.40	29.2 %
Waste	155.18	155.18	0.0 %
Water	132.60	98.16	26.0 %
Subtotal – Operation	6,517.07	4,805.78	26.3 %
Subtotal – Construction (averaged over 30 years)	99.23	99.23	0.0 %
Carbon Sequestration* from Newly Planted Trees	-215.94	-215.94	0.0 %
Net Total	**6,400.36**	**4,689.07**	**26.7 %**
		Emission Reduction Goal	**21.7 %**
		Does project achieve the reduction goal?	**Yes**

Notes:
* Sequestration: Uses the equation 0.0354 multiplied by number of trees; 0.0354 corresponds to the default annual CO_2 accumulation per tree [MT CO_2/year] for miscellaneous broad species). Per Baxter Miller from BMLA Landscape Architecture, there will be 6,100 trees planted on the Project's slopes, streets, and front yards to meet the minimum landscaping requirements for the City of Corona (personal communication 7-2-2013).
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix A).

The total emissions of greenhouses gases from the project site would approximately be 4,689.07 $MTCO_2e$ per year, which is a 26.7 percent reduction from emissions that would occur under the BAU scenario. These emissions are less the SCAQMD draft threshold and, as such, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required

Level of Significance After Mitigation

Less than significant impact.

Greenhouse Gas Reduction Plans

Impact AIR-7	**The project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.**

Impact Analysis

As stated previously, the City of Corona has an adopted Climate Action Plan. The Corona Climate Action Plan (CAP) is a planning and implementation tool to reduce the City's GHG emissions to levels that are less-than or equal-to 1990's levels by 2020. The CAP provides an analysis of the GHG emission sources that are attributed to the City; strategies for meeting regional, State, and Federal reduction targets; and methods for monitoring the City's progress towards reaching those goals. The Greenhouse Gasses Thresholds Points Worksheet provides a basis for making significance determinations for proposed developments under CEQA review within the City. The document utilizes a point system. Per the City's guidance, commercial projects that achieve 100 points or more would be compliant with the reduction values in the City's CAP, and therefore would be considered less than significant.

However, as stated in Impact AIR-6, the City has determined that the use of the SCAQMD's draft quantitative thresholds is equivalent to the use of the City's Greenhouse Gasses Thresholds Points Worksheet. The project is below the threshold of 21.7 percent reduction from BAU. Therefore, the project would be consistent with the CAP.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required

Level of Significance After Mitigation

Less than significant impact.

SECTION 7: REFERENCES

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Appendix A:
CalEEMod Output

Skyline Heights - Site Prep, Mass Grading, and Paving

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	144.17	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage of 67.46, but 144.17 total disturbed acres

Construction Phase - Pavement Duration based on gross lot acreage.

Grading -

Construction Off-road Equipment Mitigation - Rule 403 Compliance

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	75.00
tblConstructionPhase	PhaseEndDate	12/14/2016	12/13/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	8/31/2016
tblLandUse	LotAcreage	94.48	144.17
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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					
2015	6.8603	79.1477	52.1022	0.0644	6.8948	3.8036	9.9843	3.9263	3.4993	6.7688	0.0000	6,716.5496	6,716.5496	1.9469	0.0000	6,757.4343
2016	8.7033	97.3580	65.9399	0.0887	3.6047	4.8477	8.4523	1.5064	4.4598	5.9662	0.0000	9,119.7110	9,119.7110	2.6504	0.0000	9,175.3702
Total	**15.5636**	**176.5057**	**118.0421**	**0.1531**	**10.4994**	**8.6513**	**18.4367**	**5.4327**	**7.9592**	**12.7350**	**0.0000**	**15,836.2606**	**15,836.2606**	**4.5973**	**0.0000**	**15,932.8045**

2.2 Overall Operational

Not Applicable

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/8/2015	6/24/2015	5	120	
2	Grading	Grading	6/25/2015	8/31/2016	5	310	
3	Paving	Paving	8/31/2016	12/13/2016	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6936	0.0000	6.6936	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**6.6936**	**3.0883**	**9.7818**	**3.8730**	**2.8412**	**6.7142**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0767	0.0909	1.1360	2.4100e-003	0.2012	1.3100e-003	0.2025	0.0534	1.2000e-003	0.0546		207.2757	207.2757	9.4300e-003		207.4737
Total	**0.0767**	**0.0909**	**1.1360**	**2.4100e-003**	**0.2012**	**1.3100e-003**	**0.2025**	**0.0534**	**1.2000e-003**	**0.0546**		**207.2757**	**207.2757**	**9.4300e-003**		**207.4737**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2135	0.0000	3.2135	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	6.7751	79.0467	50.8400	0.0618		3.8022	3.8022		3.4980	3.4980	0.0000	6,486.2433	6,486.2433	1.9364		6,526.9080
Total	**6.7751**	**79.0467**	**50.8400**	**0.0618**	**3.2135**	**3.8022**	**7.0157**	**1.4026**	**3.4980**	**4.9006**	**0.0000**	**6,486.2433**	**6,486.2433**	**1.9364**		**6,526.9080**

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	0.0852	0.1010	1.2622	2.6800e-003	0.2236	1.4600e-003	0.2250	0.0593	1.3400e-003	0.0606		230.3063	230.3063	0.0105		230.5263
Total	**0.0852**	**0.1010**	**1.2622**	**2.6800e-003**	**0.2236**	**1.4600e-003**	**0.2250**	**0.0593**	**1.3400e-003**	**0.0606**		**230.3063**	**230.3063**	**0.0105**		**230.5263**

3.3 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2135	0.0000	3.2135	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**3.2135**	**3.5842**	**6.7977**	**1.4026**	**3.2975**	**4.7001**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

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	0.0766	0.0905	1.1342	2.6800e-003	0.2236	1.4000e-003	0.2250	0.0593	1.2800e-003	0.0606		221.9163	221.9163	9.5700e-003		222.1173
Total	**0.0766**	**0.0905**	**1.1342**	**2.6800e-003**	**0.2236**	**1.4000e-003**	**0.2250**	**0.0593**	**1.2800e-003**	**0.0606**		**221.9163**	**221.9163**	**9.5700e-003**		**222.1173**

3.4 Paving - 2016

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	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0575	0.0679	0.8507	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454		166.4372	166.4372	7.1800e-003		166.5880
Total	**0.0575**	**0.0679**	**0.8507**	**2.0100e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.6000e-004**	**0.0454**		**166.4372**	**166.4372**	**7.1800e-003**		**166.5880**

Skyline heights - Site Prep, Mass Grading, and Paving

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	144.17	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage of 67.46, but 144.17 total disturbed acres

Construction Phase - Pavement Duration based on gross lot acreage.

Construction Off-road Equipment Mitigation - Rule 403 Compliance

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	75.00
tblConstructionPhase	PhaseEndDate	12/14/2016	12/13/2016
tblConstructionPhase	PhaseStartDate	9/1/2016	8/31/2016
tblLandUse	LotAcreage	94.48	144.17
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.7857	8.8022	6.1530	6.8500e-003	0.9265	0.4440	1.3705	0.4569	0.4085	0.8654	0.0000	647.5462	647.5462	0.1874	0.0000	651.4822
2016	0.6500	7.3598	4.9472	6.4900e-003	0.5234	0.3593	0.8827	0.2241	0.3305	0.5547	0.0000	606.5728	606.5728	0.1775	0.0000	610.3001
Total	**1.4357**	**16.1621**	**11.1002**	**0.0133**	**1.4499**	**0.8033**	**2.2532**	**0.6810**	**0.7390**	**1.4201**	**0.0000**	**1,254.1190**	**1,254.1190**	**0.3649**	**0.0000**	**1,261.7823**

2.2 Overall Operational

Not Applicable

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/8/2015	6/24/2015	5	120	
2	Grading	Grading	6/25/2015	8/31/2016	5	310	
3	Paving	Paving	8/31/2016	12/13/2016	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	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
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4016	0.0000	0.4016	0.2324	0.0000	0.2324	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3157	3.4134	2.5579	2.3500e-003		0.1853	0.1853		0.1705	0.1705	0.0000	223.8064	223.8064	0.0668	0.0000	225.2096
Total	**0.3157**	**3.4134**	**2.5579**	**2.3500e-003**	**0.4016**	**0.1853**	**0.5869**	**0.2324**	**0.1705**	**0.4029**	**0.0000**	**223.8064**	**223.8064**	**0.0668**	**0.0000**	**225.2096**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1400e-003	6.0600e-003	0.0611	1.3000e-004	0.0119	8.0000e-005	0.0120	3.1500e-003	7.0000e-005	3.2200e-003	0.0000	10.4518	10.4518	5.1000e-004	0.0000	10.4625
Total	**4.1400e-003**	**6.0600e-003**	**0.0611**	**1.3000e-004**	**0.0119**	**8.0000e-005**	**0.0120**	**3.1500e-003**	**7.0000e-005**	**3.2200e-003**	**0.0000**	**10.4518**	**10.4518**	**5.1000e-004**	**0.0000**	**10.4625**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4981	0.0000	0.4981	0.2174	0.0000	0.2174	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5637	6.5088	4.2750	5.3700e-003		0.3118	0.3118		0.2869	0.2869	0.0000	506.3022	506.3022	0.1527	0.0000	509.5093
Total	**0.5637**	**6.5088**	**4.2750**	**5.3700e-003**	**0.4981**	**0.3118**	**0.8099**	**0.2174**	**0.2869**	**0.5043**	**0.0000**	**506.3022**	**506.3022**	**0.1527**	**0.0000**	**509.5093**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9800e-003	8.7400e-003	0.0881	2.2000e-004	0.0191	1.2000e-004	0.0193	5.0800e-003	1.1000e-004	5.1900e-003	0.0000	16.2240	16.2240	7.6000e-004	0.0000	16.2399
Total	**5.9800e-003**	**8.7400e-003**	**0.0881**	**2.2000e-004**	**0.0191**	**1.2000e-004**	**0.0193**	**5.0800e-003**	**1.1000e-004**	**5.1900e-003**	**0.0000**	**16.2240**	**16.2240**	**7.6000e-004**	**0.0000**	**16.2399**

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0784	0.8395	0.5557	8.4000e-004		0.0473	0.0473		0.0435	0.0435	0.0000	78.8017	78.8017	0.0238	0.0000	79.3009
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0784**	**0.8395**	**0.5557**	**8.4000e-004**		**0.0473**	**0.0473**		**0.0435**	**0.0435**	**0.0000**	**78.8017**	**78.8017**	**0.0238**	**0.0000**	**79.3009**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9300e-003	2.8300e-003	0.0285	7.0000e-005	6.1800e-003	4.0000e-005	6.2200e-003	1.6400e-003	4.0000e-005	1.6800e-003	0.0000	5.2448	5.2448	2.4000e-004	0.0000	5.2500
Total	**1.9300e-003**	**2.8300e-003**	**0.0285**	**7.0000e-005**	**6.1800e-003**	**4.0000e-005**	**6.2200e-003**	**1.6400e-003**	**4.0000e-005**	**1.6800e-003**	**0.0000**	**5.2448**	**5.2448**	**2.4000e-004**	**0.0000**	**5.2500**

Skyline Heights - Building Construction and Architectural Coatings

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	67.46	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is 67.46

Construction Off-road Equipment Mitigation - Rule 403 Compliance

Vehicle Trips -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	94.48	67.46
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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					
2017	3.6803	29.1914	26.0194	0.0474	1.3687	1.8336	3.2023	0.3670	1.7212	2.0881	0.0000	4,402.6537	4,402.6537	0.6999	0.0000	4,417.3515
2018	3.1949	25.8047	24.7898	0.0474	1.3687	1.5440	2.9126	0.3670	1.4505	1.8175	0.0000	4,319.1277	4,319.1277	0.6854	0.0000	4,333.5211
2019	2.8385	23.3052	23.8733	0.0474	1.3686	1.3323	2.7009	0.3669	1.2518	1.6188	0.0000	4,238.8378	4,238.8378	0.6717	0.0000	4,252.9431
2020	2.5669	21.1295	23.1701	0.0474	1.3686	1.1569	2.5254	0.3669	1.0870	1.4539	0.0000	4,143.7964	4,143.7964	0.6609	0.0000	4,157.6743
2021	54.8971	19.0926	22.6006	0.0474	1.3685	0.9959	2.3645	0.3669	0.9357	1.3026	0.0000	4,127.9184	4,127.9184	0.6523	0.0000	4,141.6167
Total	**67.1777**	**118.5235**	**120.4532**	**0.2369**	**6.8430**	**6.8627**	**13.7057**	**1.8347**	**6.4462**	**8.2809**	**0.0000**	**21,232.3341**	**21,232.3341**	**3.3701**	**0.0000**	**21,303.1067**

2.2 Overall Operational

Not Applicable

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	4/2/2021	5	1110	
2	Architectural Coatings	Architectural Coating	4/3/2021	7/16/2021	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,060,695; Residential Outdoor: 353,565; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coatings	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	105.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	21.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

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	0.2175	2.3595	2.5426	6.5100e-003	0.1950	0.0453	0.2403	0.0557	0.0416	0.0973		643.9093	643.9093	4.1100e-003		643.9955
Worker	0.3604	0.4263	5.3477	0.0141	1.1737	7.1300e-003	1.1808	0.3113	6.5800e-003	0.3178		1,118.9391	1,118.9391	0.0461		1,119.9070
Total	**0.5779**	**2.7858**	**7.8903**	**0.0206**	**1.3687**	**0.0524**	**1.4211**	**0.3670**	**0.0482**	**0.4152**		**1,762.8484**	**1,762.8484**	**0.0502**		**1,763.9025**

3.2 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	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

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	0.2014	2.1585	2.4198	6.5000e-003	0.1950	0.0427	0.2377	0.0557	0.0393	0.0949		632.7052	632.7052	4.0700e-003		632.7908
Worker	0.3248	0.3854	4.8373	0.0141	1.1737	7.0300e-003	1.1807	0.3113	6.5000e-003	0.3178		1,076.4835	1,076.4835	0.0426		1,077.3786
Total	**0.5262**	**2.5439**	**7.2572**	**0.0206**	**1.3686**	**0.0497**	**1.4184**	**0.3670**	**0.0458**	**0.4127**		**1,709.1888**	**1,709.1888**	**0.0467**		**1,710.1694**

3.2 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	2.3516	20.9650	17.1204	0.0268		1.2850	1.2850		1.2083	1.2083	0.0000	2,580.7618	2,580.7618	0.6279		2,593.9479
Total	**2.3516**	**20.9650**	**17.1204**	**0.0268**		**1.2850**	**1.2850**		**1.2083**	**1.2083**	**0.0000**	**2,580.7618**	**2,580.7618**	**0.6279**		**2,593.9479**

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	0.1889	1.9883	2.3223	6.4900e-003	0.1950	0.0403	0.2352	0.0557	0.0371	0.0927		621.6958	621.6958	4.0100e-003		621.7801
Worker	0.2980	0.3519	4.4307	0.0141	1.1737	7.0000e-003	1.1807	0.3113	6.4900e-003	0.3178		1,036.3803	1,036.3803	0.0398		1,037.2151
Total	**0.4869**	**2.3402**	**6.7530**	**0.0206**	**1.3686**	**0.0473**	**1.4159**	**0.3669**	**0.0436**	**0.4105**		**1,658.0761**	**1,658.0761**	**0.0438**		**1,658.9952**

3.2 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1113	19.0839	16.8084	0.0268		1.1128	1.1128		1.0465	1.0465	0.0000	2,542.4799	2,542.4799	0.6194		2,555.4880
Total	**2.1113**	**19.0839**	**16.8084**	**0.0268**		**1.1128**	**1.1128**		**1.0465**	**1.0465**	**0.0000**	**2,542.4799**	**2,542.4799**	**0.6194**		**2,555.4880**

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	0.1780	1.7202	2.2471	6.4800e-003	0.1949	0.0370	0.2319	0.0557	0.0340	0.0897		607.2955	607.2955	3.9200e-003		607.3778
Worker	0.2776	0.3253	4.1145	0.0141	1.1737	7.0300e-003	1.1807	0.3113	6.5200e-003	0.3178		994.0210	994.0210	0.0375		994.8085
Total	**0.4557**	**2.0456**	**6.3616**	**0.0206**	**1.3686**	**0.0440**	**1.4126**	**0.3669**	**0.0406**	**0.4075**		**1,601.3165**	**1,601.3165**	**0.0414**		**1,602.1863**

3.2 Building Construction - 2021

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	1.8931	17.3403	16.5376	0.0268		0.9549	0.9549		0.8979	0.8979	0.0000	2,542.7817	2,542.7817	0.6126		2,555.6462
Total	**1.8931**	**17.3403**	**16.5376**	**0.0268**		**0.9549**	**0.9549**		**0.8979**	**0.8979**	**0.0000**	**2,542.7817**	**2,542.7817**	**0.6126**		**2,555.6462**

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	0.1729	1.4473	2.2119	6.4600e-003	0.1949	0.0340	0.2289	0.0557	0.0313	0.0869		606.1273	606.1273	3.9300e-003		606.2099
Worker	0.2622	0.3051	3.8511	0.0141	1.1737	7.0700e-003	1.1807	0.3113	6.5600e-003	0.3178		979.0094	979.0094	0.0358		979.7607
Total	**0.4351**	**1.7524**	**6.0630**	**0.0206**	**1.3685**	**0.0410**	**1.4096**	**0.3669**	**0.0378**	**0.4047**		**1,585.1367**	**1,585.1367**	**0.0397**		**1,585.9705**

3.3 Architectural Coatings - 2021

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	54.6258					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.8537
Total	**54.8447**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.8537**

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	0.0524	0.0610	0.7702	2.8200e-003	0.2347	1.4100e-003	0.2362	0.0623	1.3100e-003	0.0636		195.8019	195.8019	7.1600e-003		195.9521
Total	**0.0524**	**0.0610**	**0.7702**	**2.8200e-003**	**0.2347**	**1.4100e-003**	**0.2362**	**0.0623**	**1.3100e-003**	**0.0636**		**195.8019**	**195.8019**	**7.1600e-003**		**195.9521**

Skyline Heights - Building Construction and Architectural Coatings

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	67.46	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2015
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot Acreage is 67.46

Construction Off-road Equipment Mitigation - Rule 403 Compliance

Vehicle Trips -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	94.48	67.46
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.4749	3.8146	3.3661	6.0200e-003	0.1750	0.2384	0.4134	0.0470	0.2238	0.2708	0.0000	509.2085	509.2085	0.0826	0.0000	510.9421
2018	0.4136	3.3854	3.2239	6.0400e-003	0.1757	0.2015	0.3772	0.0472	0.1893	0.2365	0.0000	501.6454	501.6454	0.0812	0.0000	503.3496
2019	0.3673	3.0576	3.1086	6.0400e-003	0.1757	0.1739	0.3496	0.0472	0.1634	0.2106	0.0000	492.4834	492.4834	0.0795	0.0000	494.1535
2020	0.3333	2.7821	3.0317	6.0600e-003	0.1764	0.1516	0.3279	0.0474	0.1424	0.1898	0.0000	483.4433	483.4433	0.0785	0.0000	485.0927
2021	2.1345	0.6929	0.8392	1.7400e-003	0.0531	0.0365	0.0895	0.0142	0.0345	0.0487	0.0000	137.0820	137.0820	0.0204	0.0000	137.5111
Total	**3.7236**	**13.7326**	**13.5694**	**0.0259**	**0.7559**	**0.8018**	**1.5577**	**0.2029**	**0.7533**	**0.9563**	**0.0000**	**2,123.8627**	**2,123.8627**	**0.3422**	**0.0000**	**2,131.0489**

2.2 Overall Operational

Not Applicable

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	4/2/2021	5	1110	
2	Architectural Coatings	Architectural Coating	4/3/2021	7/16/2021	5	75	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 1,060,695; Residential Outdoor: 353,565; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coatings	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	105.00	31.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coatings	1	21.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0298	0.3204	0.3905	8.4000e-004	0.0250	5.9000e-003	0.0309	7.1600e-003	5.4300e-003	0.0126	0.0000	75.6619	75.6619	4.9000e-004	0.0000	75.6722
Worker	0.0418	0.0615	0.6188	1.6900e-003	0.1500	9.3000e-004	0.1510	0.0398	8.6000e-004	0.0407	0.0000	122.2241	122.2241	5.4400e-003	0.0000	122.3383
Total	**0.0716**	**0.3819**	**1.0093**	**2.5300e-003**	**0.1750**	**6.8300e-003**	**0.1819**	**0.0470**	**6.2900e-003**	**0.0533**	**0.0000**	**197.8861**	**197.8861**	**5.9300e-003**	**0.0000**	**198.0105**

3.2 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	tons/yr										MT/yr					
Off-Road	0.3483	3.0355	2.2880	3.5000e-003		0.1950	0.1950		0.1833	0.1833	0.0000	308.9841	308.9841	0.0756	0.0000	310.5720
Total	**0.3483**	**3.0355**	**2.2880**	**3.5000e-003**		**0.1950**	**0.1950**		**0.1833**	**0.1833**	**0.0000**	**308.9841**	**308.9841**	**0.0756**	**0.0000**	**310.5720**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0276	0.2941	0.3759	8.5000e-004	0.0251	5.5900e-003	0.0307	7.1800e-003	5.1400e-003	0.0123	0.0000	74.6306	74.6306	4.9000e-004	0.0000	74.6409
Worker	0.0377	0.0558	0.5600	1.7000e-003	0.1506	9.2000e-004	0.1515	0.0400	8.5000e-004	0.0408	0.0000	118.0308	118.0308	5.0500e-003	0.0000	118.1367
Total	**0.0653**	**0.3498**	**0.9358**	**2.5500e-003**	**0.1757**	**6.5100e-003**	**0.1822**	**0.0472**	**5.9900e-003**	**0.0532**	**0.0000**	**192.6613**	**192.6613**	**5.5400e-003**	**0.0000**	**192.7776**

3.2 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	tons/yr										MT/yr					
Off-Road	0.3069	2.7359	2.2342	3.5000e-003		0.1677	0.1677		0.1577	0.1577	0.0000	305.5299	305.5299	0.0743	0.0000	307.0909
Total	**0.3069**	**2.7359**	**2.2342**	**3.5000e-003**		**0.1677**	**0.1677**		**0.1577**	**0.1577**	**0.0000**	**305.5299**	**305.5299**	**0.0743**	**0.0000**	**307.0909**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0259	0.2707	0.3629	8.4000e-004	0.0251	5.2700e-003	0.0304	7.1800e-003	4.8500e-003	0.0120	0.0000	73.3313	73.3313	4.8000e-004	0.0000	73.3414
Worker	0.0345	0.0509	0.5115	1.7000e-003	0.1506	9.1000e-004	0.1515	0.0400	8.5000e-004	0.0408	0.0000	113.6223	113.6223	4.7100e-003	0.0000	113.7211
Total	**0.0604**	**0.3216**	**0.8744**	**2.5400e-003**	**0.1757**	**6.1800e-003**	**0.1819**	**0.0472**	**5.7000e-003**	**0.0529**	**0.0000**	**186.9536**	**186.9536**	**5.1900e-003**	**0.0000**	**187.0626**

3.2 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2766	2.5000	2.2019	3.5100e-003		0.1458	0.1458		0.1371	0.1371	0.0000	302.1510	302.1510	0.0736	0.0000	303.6969
Total	**0.2766**	**2.5000**	**2.2019**	**3.5100e-003**		**0.1458**	**0.1458**		**0.1371**	**0.1371**	**0.0000**	**302.1510**	**302.1510**	**0.0736**	**0.0000**	**303.6969**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0245	0.2349	0.3539	8.5000e-004	0.0252	4.8600e-003	0.0300	7.2000e-003	4.4700e-003	0.0117	0.0000	71.9063	71.9063	4.7000e-004	0.0000	71.9162
Worker	0.0323	0.0472	0.4759	1.7100e-003	0.1512	9.2000e-004	0.1521	0.0402	8.5000e-004	0.0410	0.0000	109.3860	109.3860	4.4600e-003	0.0000	109.4796
Total	**0.0567**	**0.2821**	**0.8298**	**2.5600e-003**	**0.1764**	**5.7800e-003**	**0.1822**	**0.0474**	**5.3200e-003**	**0.0527**	**0.0000**	**181.2923**	**181.2923**	**4.9300e-003**	**0.0000**	**181.3958**

3.2 Building Construction - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0625	0.5722	0.5457	8.8000e-004		0.0315	0.0315		0.0296	0.0296	0.0000	76.1234	76.1234	0.0183	0.0000	76.5085
Total	**0.0625**	**0.5722**	**0.5457**	**8.8000e-004**		**0.0315**	**0.0315**		**0.0296**	**0.0296**	**0.0000**	**76.1234**	**76.1234**	**0.0183**	**0.0000**	**76.5085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9800e-003	0.0498	0.0878	2.1000e-004	6.3400e-003	1.1200e-003	7.4700e-003	1.8100e-003	1.0300e-003	2.8500e-003	0.0000	18.0788	18.0788	1.2000e-004	0.0000	18.0813
Worker	7.6700e-003	0.0112	0.1121	4.3000e-004	0.0381	2.3000e-004	0.0383	0.0101	2.2000e-004	0.0103	0.0000	27.1375	27.1375	1.0700e-003	0.0000	27.1600
Total	**0.0137**	**0.0609**	**0.1998**	**6.4000e-004**	**0.0444**	**1.3500e-003**	**0.0458**	**0.0119**	**1.2500e-003**	**0.0132**	**0.0000**	**45.2163**	**45.2163**	**1.1900e-003**	**0.0000**	**45.2413**

3.3 Architectural Coatings - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0485					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.2100e-003	0.0573	0.0682	1.1000e-004		3.5300e-003	3.5300e-003		3.5300e-003	3.5300e-003	0.0000	9.5747	9.5747	6.6000e-004	0.0000	9.5885
Total	**2.0567**	**0.0573**	**0.0682**	**1.1000e-004**		**3.5300e-003**	**3.5300e-003**		**3.5300e-003**	**3.5300e-003**	**0.0000**	**9.5747**	**9.5747**	**6.6000e-004**	**0.0000**	**9.5885**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7400e-003	2.5300e-003	0.0255	1.0000e-004	8.6600e-003	5.0000e-005	8.7100e-003	2.3000e-003	5.0000e-005	2.3500e-003	0.0000	6.1676	6.1676	2.4000e-004	0.0000	6.1727
Total	**1.7400e-003**	**2.5300e-003**	**0.0255**	**1.0000e-004**	**8.6600e-003**	**5.0000e-005**	**8.7100e-003**	**2.3000e-003**	**5.0000e-005**	**2.3500e-003**	**0.0000**	**6.1676**	**6.1676**	**2.4000e-004**	**0.0000**	**6.1727**

Skyline Heights - Operations

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	67.46	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	515.16	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.09

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Factor adjusted for Renewable Portfolio Standards

Land Use - Lot Acreage is 67.46

Vehicle Trips - Default Trip Rates for Weekday, Saturday, and Weekend equate to an average annual daily trip rate of 9.52 trips/unit

Woodstoves - No Wood Stoves

Energy Mitigation - 2013 Title 24 requirements are 25 percent more efficient than 2008 Title 24 requirements.

Water Mitigation - GreenBuilding Requirements

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberNoFireplace	29.10	43.65
tblFireplaces	NumberWood	14.55	0.00
tblLandUse	LotAcreage	94.48	67.46
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023

tblProjectCharacteristics	CO2IntensityFactor	630.89	515.16
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.09
tblProjectCharacteristics	OperationalYear	2014	2021
tblWoodstoves	NumberCatalytic	14.55	0.00
tblWoodstoves	NumberNoncatalytic	14.55	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Not Applicable

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.7028	0.2778	24.0862	1.2700e-003		0.4644	0.4644		0.4609	0.4609	0.0000	5,281.2287	5,281.2287	0.1423	0.0960	5,313.9861
Energy	0.2305	1.9700	0.8383	0.0126		0.1593	0.1593		0.1593	0.1593		2,514.9083	2,514.9083	0.0482	0.0461	2,530.2136
Mobile	8.4313	23.0804	91.3543	0.3144	21.2385	0.4511	21.6896	5.6676	0.4158	6.0834		23,935.4760	23,935.4760	0.6456		23,949.0331
Total	**21.3646**	**25.3281**	**116.2788**	**0.3282**	**21.2385**	**1.0748**	**22.3132**	**5.6676**	**1.0360**	**6.7035**	**0.0000**	**31,731.6130**	**31,731.6130**	**0.8361**	**0.1421**	**31,793.2327**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.4313	23.0804	91.3543	0.3144	21.2385	0.4511	21.6896	5.6676	0.4158	6.0834		23,935.4760	23,935.4760	0.6456		23,949.0331
Unmitigated	8.4313	23.0804	91.3543	0.3144	21.2385	0.4511	21.6896	5.6676	0.4158	6.0834		23,935.4760	23,935.4760	0.6456		23,949.0331

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,784.87	2,933.28	2552.07	9,475,128	9,475,128
Total	2,784.87	2,933.28	2,552.07	9,475,128	9,475,128

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456057	0.068715	0.179002	0.172810	0.046712	0.007447	0.012395	0.044413	0.000888	0.001061	0.006318	0.000819	0.003363

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2305	1.9700	0.8383	0.0126		0.1593	0.1593		0.1593	0.1593		2,514.9083	2,514.9083	0.0482	0.0461	2,530.2136
NaturalGas Unmitigated	0.2903	2.4810	1.0557	0.0158		0.2006	0.2006		0.2006	0.2006		3,167.1793	3,167.1793	0.0607	0.0581	3,186.4542

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	21.3767	0.2305	1.9700	0.8383	0.0126		0.1593	0.1593		0.1593	0.1593		2,514.9083	2,514.9083	0.0482	0.0461	2,530.2136
Total		**0.2305**	**1.9700**	**0.8383**	**0.0126**		**0.1593**	**0.1593**		**0.1593**	**0.1593**		**2,514.9083**	**2,514.9083**	**0.0482**	**0.0461**	**2,530.2136**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.7028	0.2778	24.0862	1.2700e-003		0.4644	0.4644		0.4609	0.4609	0.0000	5,281.2287	5,281.2287	0.1423	0.0960	5,313.9861
Unmitigated	12.7028	0.2778	24.0862	1.2700e-003		0.4644	0.4644		0.4609	0.4609	0.0000	5,281.2287	5,281.2287	0.1423	0.0960	5,313.9861

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	1.1225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.3712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4802	2.0000e-005	0.0262	0.0000		0.3317	0.3317		0.3283	0.3283	0.0000	5,238.0000	5,238.0000	0.1004	0.0960	5,269.8776
Landscaping	0.7290	0.2777	24.0600	1.2700e-003		0.1326	0.1326		0.1326	0.1326		43.2287	43.2287	0.0419		44.1085
Total	**12.7028**	**0.2778**	**24.0862**	**1.2700e-003**		**0.4644**	**0.4644**		**0.4609**	**0.4609**	**0.0000**	**5,281.2287**	**5,281.2287**	**0.1423**	**0.0960**	**5,313.9860**

Skyline Heights - Operations

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	67.46	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	515.16	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.09

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Factor adjusted for Renewable Portfolio Standards

Land Use - Lot Acreage is 67.46

Vehicle Trips - Default Trip Rates for Weekday, Saturday, and Weekend equate to an average annual daily trip rate of 9.52 trips/unit

Woodstoves - No Wood Stoves

Energy Mitigation - 2013 Title 24 requirements are 25 percent more efficient than 2008 Title 24 requirements.

Water Mitigation - GreenBuilding Requirements

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberNoFireplace	29.10	43.65
tblFireplaces	NumberWood	14.55	0.00
tblLandUse	LotAcreage	94.48	67.46
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023

tblProjectCharacteristics	CO2IntensityFactor	630.89	515.16
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.09
tblProjectCharacteristics	OperationalYear	2014	2021
tblWoodstoves	NumberCatalytic	14.55	0.00
tblWoodstoves	NumberNoncatalytic	14.55	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Not Applicable

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.7028	0.2778	24.0862	1.2700e-003		0.4644	0.4644		0.4609	0.4609	0.0000	5,281.2287	5,281.2287	0.1423	0.0960	5,313.9861
Energy	0.2305	1.9700	0.8383	0.0126		0.1593	0.1593		0.1593	0.1593		2,514.9083	2,514.9083	0.0482	0.0461	2,530.2136
Mobile	8.2117	24.0384	85.9917	0.2932	21.2385	0.4524	21.6909	5.6676	0.4170	6.0846		22,436.1493	22,436.1493	0.6468		22,449.7311
Total	**21.1450**	**26.2862**	**110.9162**	**0.3071**	**21.2385**	**1.0761**	**22.3145**	**5.6676**	**1.0372**	**6.7047**	**0.0000**	**30,232.2863**	**30,232.2863**	**0.8372**	**0.1421**	**30,293.9307**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.2117	24.0384	85.9917	0.2932	21.2385	0.4524	21.6909	5.6676	0.4170	6.0846		22,436.1493	22,436.1493	0.6468		22,449.7311
Unmitigated	8.2117	24.0384	85.9917	0.2932	21.2385	0.4524	21.6909	5.6676	0.4170	6.0846		22,436.1493	22,436.1493	0.6468		22,449.7311

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,784.87	2,933.28	2552.07	9,475,128	9,475,128
Total	2,784.87	2,933.28	2,552.07	9,475,128	9,475,128

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456057	0.068715	0.179002	0.172810	0.046712	0.007447	0.012395	0.044413	0.000888	0.001061	0.006318	0.000819	0.003363

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2305	1.9700	0.8383	0.0126		0.1593	0.1593		0.1593	0.1593		2,514.9083	2,514.9083	0.0482	0.0461	2,530.2136
NaturalGas Unmitigated	0.2903	2.4810	1.0557	0.0158		0.2006	0.2006		0.2006	0.2006		3,167.1793	3,167.1793	0.0607	0.0581	3,186.4542

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	21.3767	0.2305	1.9700	0.8383	0.0126		0.1593	0.1593		0.1593	0.1593		2,514.9083	2,514.9083	0.0482	0.0461	2,530.2136
Total		**0.2305**	**1.9700**	**0.8383**	**0.0126**		**0.1593**	**0.1593**		**0.1593**	**0.1593**		**2,514.9083**	**2,514.9083**	**0.0482**	**0.0461**	**2,530.2136**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.7028	0.2778	24.0862	1.2700e-003		0.4644	0.4644		0.4609	0.4609	0.0000	5,281.2287	5,281.2287	0.1423	0.0960	5,313.9861
Unmitigated	12.7028	0.2778	24.0862	1.2700e-003		0.4644	0.4644		0.4609	0.4609	0.0000	5,281.2287	5,281.2287	0.1423	0.0960	5,313.9861

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	1.1225					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.3712					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.4802	2.0000e-005	0.0262	0.0000		0.3317	0.3317		0.3283	0.3283	0.0000	5,238.0000	5,238.0000	0.1004	0.0960	5,269.8776
Landscaping	0.7290	0.2777	24.0600	1.2700e-003		0.1326	0.1326		0.1326	0.1326		43.2287	43.2287	0.0419		44.1085
Total	**12.7028**	**0.2778**	**24.0862**	**1.2700e-003**		**0.4644**	**0.4644**		**0.4609**	**0.4609**	**0.0000**	**5,281.2287**	**5,281.2287**	**0.1423**	**0.0960**	**5,313.9860**

Skyline Heights - Operations

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	67.46	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	515.16	**CH4 Intensity (lb/MWhr)**	0.023	**N2O Intensity (lb/MWhr)**	0.09

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy Intensity Factor adjusted for Renewable Portfolio Standards

Land Use - Lot Acreage is 67.46

Vehicle Trips - Default Trip Rates for Weekday, Saturday, and Weekend equate to an average annual daily trip rate of 9.52 trips/unit

Woodstoves - No Wood Stoves

Energy Mitigation - 2013 Title 24 requirements are 25 percent more efficient than 2008 Title 24 requirements.

Water Mitigation - GreenBuilding Requirements

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberNoFireplace	29.10	43.65
tblFireplaces	NumberWood	14.55	0.00
tblLandUse	LotAcreage	94.48	67.46
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.023

tblProjectCharacteristics	CO2IntensityFactor	630.89	515.16
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.09
tblProjectCharacteristics	OperationalYear	2014	2021
tblWoodstoves	NumberCatalytic	14.55	0.00
tblWoodstoves	NumberNoncatalytic	14.55	0.00

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1947	0.0347	3.0078	1.6000e-004		0.0207	0.0207		0.0207	0.0207	0.0000	64.3000	64.3000	5.8900e-003	1.0900e-003	64.7612
Energy	0.0421	0.3595	0.1530	2.2900e-003		0.0291	0.0291		0.0291	0.0291	0.0000	921.9006	921.9006	0.0306	0.0960	952.2870
Mobile	1.3508	4.2280	15.2408	0.0509	3.5939	0.0776	3.6715	0.9603	0.0715	1.0319	0.0000	3,533.2837	3,533.2837	0.1007	0.0000	3,535.3988
Waste						0.0000	0.0000		0.0000	0.0000	69.2443	0.0000	69.2443	4.0922	0.0000	155.1809
Water						0.0000	0.0000		0.0000	0.0000	4.8121	75.2887	80.1007	0.4975	0.0245	98.1574
Total	**3.5876**	**4.6223**	**18.4016**	**0.0534**	**3.5939**	**0.1274**	**3.7213**	**0.9603**	**0.1213**	**1.0816**	**74.0563**	**4,594.7730**	**4,668.8293**	**4.7269**	**0.1216**	**4,805.7853**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3508	4.2280	15.2408	0.0509	3.5939	0.0776	3.6715	0.9603	0.0715	1.0319	0.0000	3,533.2837	3,533.2837	0.1007	0.0000	3,535.3988
Unmitigated	1.3508	4.2280	15.2408	0.0509	3.5939	0.0776	3.6715	0.9603	0.0715	1.0319	0.0000	3,533.2837	3,533.2837	0.1007	0.0000	3,535.3988

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,784.87	2,933.28	2552.07	9,475,128	9,475,128
Total	2,784.87	2,933.28	2,552.07	9,475,128	9,475,128

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.456057	0.068715	0.179002	0.172810	0.046712	0.007447	0.012395	0.044413	0.000888	0.001061	0.006318	0.000819	0.003363

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	505.5293	505.5293	0.0226	0.0883	533.3817
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	522.2058	522.2058	0.0233	0.0912	550.9770
NaturalGas Mitigated	0.0421	0.3595	0.1530	2.2900e-003		0.0291	0.0291		0.0291	0.0291	0.0000	416.3713	416.3713	7.9800e-003	7.6300e-003	418.9052
NaturalGas Unmitigated	0.0530	0.4528	0.1927	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.3621	524.3621	0.0101	9.6100e-003	527.5532

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	7.8025e+006	0.0421	0.3595	0.1530	2.2900e-003		0.0291	0.0291		0.0291	0.0291	0.0000	416.3713	416.3713	7.9800e-003	7.6300e-003	418.9052
Total		**0.0421**	**0.3595**	**0.1530**	**2.2900e-003**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**416.3713**	**416.3713**	**7.9800e-003**	**7.6300e-003**	**418.9052**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.16341e+006	505.5293	0.0226	0.0883	533.3817
Total		**505.5293**	**0.0226**	**0.0883**	**533.3817**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1947	0.0347	3.0078	1.6000e-004		0.0207	0.0207		0.0207	0.0207	0.0000	64.3000	64.3000	5.8900e-003	1.0900e-003	64.7612
Unmitigated	2.1947	0.0347	3.0078	1.6000e-004		0.0207	0.0207		0.0207	0.0207	0.0000	64.3000	64.3000	5.8900e-003	1.0900e-003	64.7612

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2049					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.8928					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.0000e-003	0.0000	3.3000e-004	0.0000		4.1500e-003	4.1500e-003		4.1000e-003	4.1000e-003	0.0000	59.3979	59.3979	1.1400e-003	1.0900e-003	59.7594
Landscaping	0.0911	0.0347	3.0075	1.6000e-004		0.0166	0.0166		0.0166	0.0166	0.0000	4.9021	4.9021	4.7500e-003	0.0000	5.0018
Total	**2.1947**	**0.0347**	**3.0078**	**1.6000e-004**		**0.0207**	**0.0207**		**0.0207**	**0.0207**	**0.0000**	**64.3000**	**64.3000**	**5.8900e-003**	**1.0900e-003**	**64.7612**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	80.1007	0.4975	0.0245	98.1574
Unmitigated	94.7343	0.6218	0.0301	117.1184

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	15.1679 / 11.2238	80.1007	0.4975	0.0245	98.1574
Total		**80.1007**	**0.4975**	**0.0245**	**98.1574**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	69.2443	4.0922	0.0000	155.1809
Unmitigated	69.2443	4.0922	0.0000	155.1809

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	341.12	69.2443	4.0922	0.0000	155.1809
Total		**69.2443**	**4.0922**	**0.0000**	**155.1809**

Skyline Heights - Operations 2005 Business As Usual

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	291.00	Dwelling Unit	67.46	523,800.00	832

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2005
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.00617

1.3 User Entered Comments & Non-Default Data

Land Use - Lot Acreage is 67.46

Vehicle Trips - Default Trip Rates for Weekday, Saturday, and Weekend equate to an average annual daily trip rate of 9.52 trips/unit

Woodstoves - No Wood Stoves

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberNoFireplace	29.10	43.65
tblFireplaces	NumberWood	14.55	0.00
tblLandUse	LotAcreage	94.48	67.46
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.00617
tblProjectCharacteristics	OperationalYear	2014	2005
tblWoodstoves	NumberCatalytic	14.55	0.00
tblWoodstoves	NumberNoncatalytic	14.55	0.00

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	64.3000	64.3000	8.9900e-003	1.0900e-003	64.8263
Energy											0.0000	1,163.8807	1,163.8807	0.0395	0.0159	1,169.6281
Mobile											0.0000	4,985.8804	4,985.8804	0.4268	0.0000	4,994.8428
Waste											69.2443	0.0000	69.2443	4.0922	0.0000	155.1809
Water											6.0151	108.6498	114.6649	0.6228	0.0157	132.5953
Total											**75.2594**	**6,322.7109**	**6,397.9703**	**5.1902**	**0.0326**	**6,517.0734**

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	4,985.8804	4,985.8804	0.4268	0.0000	4,994.8428
Unmitigated											0.0000	4,985.8804	4,985.8804	0.4268	0.0000	4,994.8428

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	2,784.87	2,933.28	2552.07	9,475,128	9,475,128
Total	2,784.87	2,933.28	2,552.07	9,475,128	9,475,128

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.437815	0.104647	0.233388	0.126882	0.026947	0.007657	0.012555	0.032638	0.000710	0.000618	0.011525	0.000974	0.003644

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	639.5187	639.5187	0.0294	6.2500e-003	642.0749
Electricity Unmitigated											0.0000	639.5187	639.5187	0.0294	6.2500e-003	642.0749
NaturalGas Mitigated											0.0000	524.3621	524.3621	0.0101	9.6100e-003	527.5532
NaturalGas Unmitigated											0.0000	524.3621	524.3621	0.0101	9.6100e-003	527.5532

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	9.82617e+006											0.0000	524.3621	524.3621	0.0101	9.6100e-003	527.5532
Total												**0.0000**	**524.3621**	**524.3621**	**0.0101**	**9.6100e-003**	**527.5532**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.23478e+006	639.5187	0.0294	6.2500e-003	642.0749
Total		**639.5187**	**0.0294**	**6.2500e-003**	**642.0749**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	64.3000	64.3000	8.9900e-003	1.0900e-003	64.8263
Unmitigated											0.0000	64.3000	64.3000	8.9900e-003	1.0900e-003	64.8263

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	59.3979	59.3979	1.1400e-003	1.0900e-003	59.7594
Landscaping											0.0000	4.9021	4.9021	7.8500e-003	0.0000	5.0669
Total											**0.0000**	**64.3000**	**64.3000**	**8.9900e-003**	**1.0900e-003**	**64.8263**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	114.6649	0.6227	0.0156	132.5855
Unmitigated	114.6649	0.6228	0.0157	132.5953

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	18.9598 / 11.9529	114.6649	0.6228	0.0157	132.5953
Total		**114.6649**	**0.6228**	**0.0157**	**132.5953**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	69.2443	4.0922	0.0000	155.1809
Mitigated	69.2443	4.0922	0.0000	155.1809

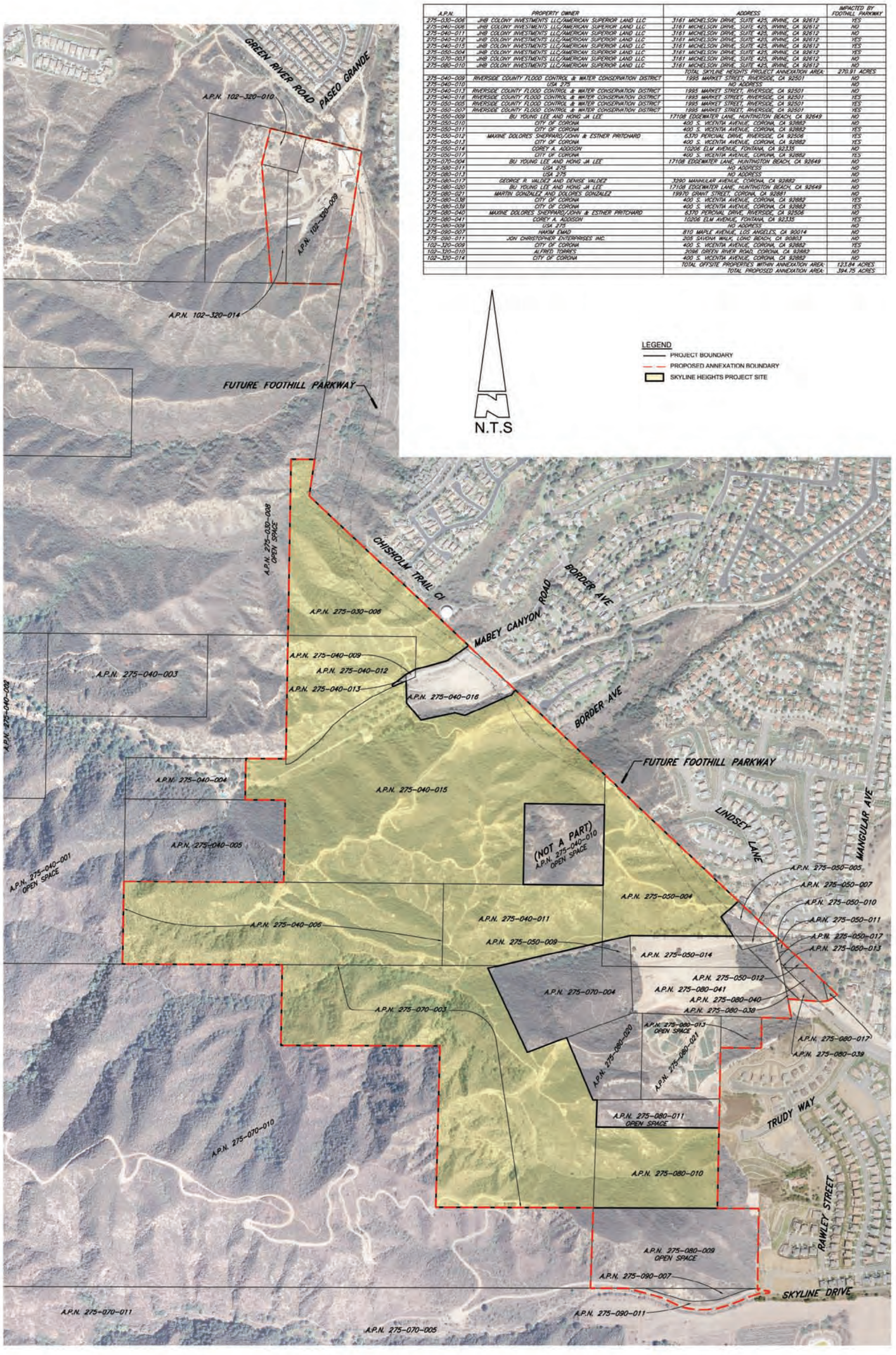
8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	341.12	69.2443	4.0922	0.0000	155.1809
Total		**69.2443**	**4.0922**	**0.0000**	**155.1809**

Appendix B:
Skyline Heights Annexation Area Exhibit

A.P.N.	PROPERTY OWNER	ADDRESS	IMPACTED BY FOOTHILL PARKWAY
275-030-006	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	YES
275-040-006	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	NO
275-040-011	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	NO
275-040-012	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	YES
275-040-015	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	YES
275-050-004	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	YES
275-070-003	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	NO
275-080-010	JHB COLONY INVESTMENTS LLC/AMERICAN SUPERIOR LAND LLC	3161 MICHELSON DRIVE, SUITE 425, IRVINE, CA 92612	NO
		TOTAL SKYLINE HEIGHTS PROJECT ANNEXATION AREA:	270.91 ACRES
275-040-009	RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT	1995 MARKET STREET, RIVERSIDE, CA 92501	NO
275-040-010	USA 275	NO ADDRESS	NO
275-040-013	RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT	1995 MARKET STREET, RIVERSIDE, CA 92501	NO
275-040-016	RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT	1995 MARKET STREET, RIVERSIDE, CA 92501	YES
275-050-005	RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT	1995 MARKET STREET, RIVERSIDE, CA 92501	YES
275-050-007	RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT	1995 MARKET STREET, RIVERSIDE, CA 92501	YES
275-050-009	BU YOUNG LEE AND HONG JA LEE	17108 EDGEWATER LANE, HUNTINGTON BEACH, CA 92649	NO
275-050-010	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	NO
275-050-011	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	YES
275-050-012	MAXINE DOLORES SHEPPARD/JOHN & ESTHER PRITCHARD	6370 PERCIVAL DRIVE, RIVERSIDE, CA 92506	YES
275-050-013	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	YES
275-050-014	COREY A. ADDISON	10206 ELM AVENUE, FONTANA, CA 92335	NO
275-050-017	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	YES
275-070-004	BU YOUNG LEE AND HONG JA LEE	17108 EDGEWATER LANE, HUNTINGTON BEACH, CA 92649	NO
275-080-011	USA 275	NO ADDRESS	NO
275-080-013	USA 275	NO ADDRESS	NO
275-080-017	GEORGE R. VALDEZ AND DENISE VALDEZ	3290 MANHULAR AVENUE, CORONA, CA 92882	NO
275-080-020	BU YOUNG LEE AND HONG JA LEE	17108 EDGEWATER LANE, HUNTINGTON BEACH, CA 92649	NO
275-080-021	MARTIN GONZALEZ AND DOLORES GONZALEZ	19970 GRANT STREET, CORONA, CA 92881	NO
275-080-038	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	YES
275-080-039	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	YES
275-080-040	MAXINE DOLORES SHEPPARD/JOHN & ESTHER PRITCHARD	6370 PERCIVAL DRIVE, RIVERSIDE, CA 92506	NO
275-080-041	COREY A. ADDISON	10206 ELM AVENUE, FONTANA, CA 92335	YES
275-080-009	USA 275	NO ADDRESS	NO
275-090-007	HAKIM EMAD	810 MAPLE AVENUE, LOS ANGELES, CA 90014	NO
275-090-011	JON CHRISTOPHER ENTERPRISES INC.	205 SAVONA WALK, LONG BEACH, CA 90803	NO
102-320-009	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	YES
102-320-010	ALFRED TORRES	2096 GREEN RIVER ROAD, CORONA, CA 92882	NO
102-320-014	CITY OF CORONA	400 S. VICENTIA AVENUE, CORONA, CA 92882	NO
		TOTAL OFFSITE PROPERTIES WITHIN ANNEXATION AREA:	123.84 ACRES
		TOTAL PROPOSED ANNEXATION AREA:	394.75 ACRES



Source: KWC Engineers

Michael Brandman Associates

Exhibit 4
Annexation Area