

**AIR QUALITY AND GREENHOUSE GAS  
EMISSIONS IMPACT ANALYSIS  
LAKEPOINTE APARTMENTS PROJECT  
CITY OF LAKE ELSINORE**

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## ACRONYMS AND ABBREVIATIONS

AQMP	Air Quality Management Plan
Air Basin	South Coast Air Basin
CAAQS	California Ambient Air Quality Standards
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CO <sub>2e</sub>	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	Environmental Protection Agency
°F	Fahrenheit
GHG	Greenhouse gas
GWP	Global warming potential
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LST	Localized Significant Thresholds
MSAT	Mobile Source Air Toxics
MTCO <sub>2e</sub>	Metric tons of carbon dioxide equivalent
MMTCO <sub>2e</sub>	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	Nitrogen oxides
NO <sub>2</sub>	Nitrogen dioxide
O <sub>3</sub>	Ozone
PM	Particle matter
PM <sub>10</sub>	Particles that are less than 10 micrometers in diameter
PM <sub>2.5</sub>	Particles that are less than 2.5 micrometers in diameter
PPM	Parts per million
PPB	Parts per billion

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RTIP	Regional Transportation Improvement Plan
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO <sub>x</sub>	Sulfur oxides
TAC	Toxic air contaminants
UNFCCC	United Nations' Framework Convention on Climate Change
VOC	Volatile organic compounds

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## **1.0 INTRODUCTION**

### ***1.1 Purpose of Analysis and Study Objectives***

This Air Quality and Greenhouse Gas Emissions Impact Analysis has been completed to determine the air quality and greenhouse gas emissions impacts associated with the proposed Lakepointe Apartments Project (proposed project). The following is provided in this report:

- A description of the proposed project;
- A description of the atmospheric setting;
- A description of the criteria pollutants and greenhouse gases (GHGs);
- A description of the air quality regulatory framework;
- A description of the air quality and GHG emissions thresholds including the California Environmental Quality Act (CEQA) significance thresholds;
- An analysis of the short-term construction related and long-term operational air quality and GHG emissions impacts;
- An analysis of the conformity of the proposed project with the South Coast Air Quality Management District (SCAQMD) Air Quality Management Plan (AQMP); and
- An analysis of the conformity of the proposed project with all applicable GHG emissions reduction plans and policies.

### ***1.2 Site Location and Study Area***

The project site is located in the western portion of the City of Lake Elsinore (City). The approximately 13.21-acre project site is currently vacant and undeveloped. The project site is bounded by commercial retail uses to the northeast, Riverside Drive and an RV Park to the southeast, Lakeside High School to the southwest, and vacant land and single-family homes to the northwest. The project local study area is shown in Figure 1.

### ***Sensitive Receptors in Project Vicinity***

The nearest offsite sensitive receptors to the project site consist of the structures at Lakeside High School as near as 150 feet southwest of the project site, RV campsites as near as 230 feet southeast of the project site, and single-family homes as near as 350 feet northwest of the project site.

### ***1.3 Proposed Project Description***

The proposed project would consist of the development of 152 residential apartment units that would range from one to three bedrooms and would include a public common area that contains a clubhouse and pool. The proposed project would provide 152 covered and 197 uncovered parking spaces for a total of 349 parking spaces. The proposed site plan is shown in Figure 2.

### ***1.4 Standard Air Quality and GHG Regulatory Conditions***

The proposed project will be required to comply with the following regulatory conditions from the SCAQMD and State of California (State).

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## **South Coast Air Quality Management District Rules**

The following lists the SCAQMD rules that are applicable to all residential projects in the South Coast Air Basin (Air Basin).

### Rule 402 - Nuisance

Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which causes 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. Compliance with Rule 402 will reduce local air quality and odor impacts to nearby sensitive receptors.

### Rule 403- Fugitive Dust

Rule 403 governs emissions of fugitive dust during construction activities and requires that no person shall cause or allow the emissions of fugitive dust such that dust remains visible in the atmosphere beyond the property line or the dust emission exceeds 20 percent opacity, if the dust is from the operation of a motorized vehicle. Compliance with this rule is achieved through application of standard Best Available Control Measures, which include but are not limited to the measures below. Compliance with these rules would reduce local air quality impacts to nearby sensitive receptors.

- Utilize either a pad of washed gravel 50 feet long, 100 feet of paved surface, a wheel shaker, or a wheel washing device to remove material from vehicle tires and undercarriages before leaving project site.
- Do not allow any track out of material to extend more than 25 feet onto a public roadway and remove all track out at the end of each workday.
- Water all exposed areas on active sites at least three times per day and pre-water all areas prior to clearing and soil moving activities.
- Apply nontoxic chemical stabilizers according to manufacturer specifications to all construction areas that will remain inactive for 10 days or longer.
- Pre-water all material to be exported prior to loading, and either cover all loads or maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114.
- Replant all disturbed area as soon as practical.
- Suspend all grading activities when wind speeds (including wind gusts) exceed 25 miles per hour.
- Restrict traffic speeds on all unpaved roads to 15 miles per hour or less.

### Rule 1113 – Architectural Coatings

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

### Rule 1143 – Paint Thinners

Rule 1143 governs the sale, use, and manufacturing of paint thinners and multi-purpose solvents that are used in thinning of coating materials, cleaning of coating application equipment, and other solvent



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cleaning operations. This rule regulates the VOC content of solvents used during construction. Solvents used during construction and operation of the proposed project must comply with SCAQMD Rule 1143.

#### Rule 1186 – Street Sweeper Requirements

Rule 1186 governs PM10 emissions from paved and unpaved roads in the Air Basin. This rule requires that when there is visible roadway accumulation of material on paved public roads that the contractor shall begin removal of the material within 72 hours of any notification of the accumulation. A visible roadway accumulation is defined as materials covering a contiguous area in excess of 200 square feet.

#### **State of California Rules**

The following lists the State of California rules that are applicable to all residential projects in the State.

#### CARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the California Air Resources Board (CARB) adopted a regulation to reduce diesel particulate matter (DPM) and NOx emissions from in-use 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. Performance requirements of the rule are based on a fleet's average NOx 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 requirement 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). Currently, no commercial operation in California may add any equipment to their fleet that has a Tier 0 engine and medium and large fleets are restricted from adding Tier 1 engines. By January 1, 2016 small fleet will also be restricted from adding Tier 1 engines to their fleets and by January 1, 2018 medium and large fleets will be restricted from adding Tier 2 engines to their fleets. It should be noted that commercial fleets may continue to use their existing Tier 0 and 1 equipment, if they can demonstrate that the average emissions from their entire fleet emissions meet the NOx emissions targets.

#### CARB Resolution 08-43 for On-Road Diesel Truck Fleets

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. By January 1, 2014, 50 percent of a truck fleet is required to have installed Best Available Control Technology (BACT) for NOx emissions and 100 percent of a truck fleet installed BACT for PM10 emissions. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California. All on-road diesel trucks utilized during construction of the proposed project will be required to comply with Resolution 08-43.

#### California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) 2013 Building Standards that became effective on July 1, 2014 now require all hot water pipes to be insulated, the use of higher performance windows, installation of whole house fans, increased wall insulation, mandatory duct sealing, and require all roofs to be solar-ready to facilitate

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future solar systems, as well as several other energy efficiency requirements that are summarized at: ([http://www.energy.ca.gov/releases/2014\\_releases/2014-07-01\\_new\\_title24\\_standards\\_nr.html](http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html)).

With regard to air quality, Title 24 Building Standards Section 150 (m) require that mechanical ventilation systems are provided in all new residential construction. The systems are required to filter all recirculated air and all outdoor air supplied to the system. The filtration media used in the system shall have a designated efficiency equal to or greater than Minimum Efficiency Reporting Value (MERV) of MERV 6 or greater or a particle size efficiency rating equal to or greater than 50 percent in the 3.0 to 10 µm (PM10) range.

#### California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) requires that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for residential buildings include a 20 percent reduction of potable water use within buildings through use of low-flow fixtures, a 50 percent construction waste diversion from landfills, use of building finish materials and carpets that emit low levels of volatile organic compounds, and bathroom ventilation fans are required to be Energy Star compliant and controlled by a humidity sensor switch.

### ***1.5 Summary of Analysis Results***

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines air quality and GHG emissions checklist questions.

#### **Conflict with or obstruct implementation of the applicable air quality plan?**

Less than significant impact.

#### **Violate any air quality standard or contribute substantially to an existing or projected air quality violation?**

Less than significant impact.

#### **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard?**

Less than significant impact.

#### **Expose sensitive receptors to substantial pollutant concentrations?**

Less than significant impact.

#### **Create objectionable odors affecting a substantial number of people?**

Less than significant impact.

#### **Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?**

Less than significant impact.

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**Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?**

Less than significant impact.

***1.6 Project Design Features Incorporated into the Proposed Project***

This analysis was based on implementation of the following project design features that are either already depicted on the proposed project site plan and architectural plans or are required from State Regulations.

**Project Design Feature 1**

The project applicant shall implement Measure T-1.2 from the Climate Action Plan, which requires the installation of sidewalks along all new streets as well as internal sidewalks to connect to neighborhood activity centers, major destinations, and transit facilities.

**Project Design Feature 2**

The project applicant shall prepare a landscape plan that meets the requirements of Measure E-1.1 from the Climate Action Plan, which requires that all new developments plant a minimum one 15 gallon nondeciduous umbrella form tree per 30 linear feet of boundary length.

***1.7 Mitigation Measures Required for the Proposed Project***

This analysis found that implementation of the State and SCAQMD air quality and GHG emissions reductions regulations plus Project Design Features 1 and 2 were adequate to limit criteria pollutants, toxic air contaminants, odors, and GHG emissions from the proposed project to less than significant levels. No mitigation measures are required for the proposed project with respect to air quality and GHG emissions.





SOURCE: Google Earth.

**KEYNOTES:**

- 1 - GAS METER
- 2 - A/C UNIT
- 3 - ELECTRIC ROOM
- 4 - FIRE RISER ROOM

EXISTING RETAIL PARCEL  
(NOT A PART)

PROPOSED STREET

VACANT RESIDENTIAL  
PARCEL (NOT A PART)

RIVERSIDE DRIVE  
ST. HIGHWAY 74

EXISTING LAKESIDE HIGH  
SCHOOL (NOT A PART)

SITE PLAN  
1" = 30'-0"



SOURCE: Deigle Architecture & Planning.

**VISTA ENVIRONMENTAL**

Figure 2  
Proposed Site Plan



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## 2.0 POLLUTANTS

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

### ***2.1 Criteria Pollutants***

The criteria pollutants consist of: ozone, nitrogen oxides, carbon monoxide, sulfur oxides, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants “criteria” air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

#### **Nitrogen Oxides**

Nitrogen Oxides (NO<sub>x</sub>) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NO<sub>x</sub> are colorless and odorless, concentrations of nitrogen dioxide (NO<sub>2</sub>) can often be seen as a reddish-brown layer over many urban areas. NO<sub>x</sub> form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NO<sub>x</sub> are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NO<sub>x</sub> reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO<sub>2</sub>, which cause respiratory problems. NO<sub>x</sub> and the pollutants formed from NO<sub>x</sub> can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NO<sub>x</sub> is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

#### **Ozone**

Ozone is not usually emitted directly into the air but in the vicinity of ground-level is created by a chemical reaction between NO<sub>x</sub> and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NO<sub>x</sub> and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NO<sub>x</sub> and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NO<sub>x</sub> and VOC emissions.

#### **Carbon Monoxide**

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes approximately 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath

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a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

### **Sulfur Oxides**

Sulfur Oxide (SOx) gases are formed when fuel containing sulfur, such as coal and oil is burned, as well as from the refining of gasoline. SOx dissolves easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

### **Lead**

Lead is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

### **Particulate Matter**

Particle matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. PM is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

## ***2.2 Other Pollutants of Concern***

### **Toxic Air Contaminants**

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least 40 different toxic air contaminants. The most important of these TACs, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and

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acetaldehyde. Public exposure to TACs can result from emissions from normal operations as well as from accidental releases. Health effects of TACs include cancer, birth defects, neurological damage, and death.

TACs are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of TACs with varying degrees of toxicity. Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to *The California Almanac of Emissions and Air Quality 2013 Edition*, the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). DPM is a subset of PM<sub>2.5</sub> because the size of diesel particles are typically 2.5 microns and smaller. The identification of DPM as a TAC in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in DPM by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of DPM as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to DPM is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

## **Asbestos**

Asbestos is listed as a TAC by CARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform 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. The nearest likely locations of naturally occurring asbestos, as identified in the *General Location Guide for Ultramafic Rocks in California*, prepared by the California Division of Mines and Geology, is located in Santa Barbara County. The nearest historic asbestos mine to the project site, as identified in the *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California*, prepared by U.S. Geological Survey, is located at Asbestos Mountain, which is approximately 52 miles east of the project site in the San Jacinto Mountains. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

## **2.3 Greenhouse Gases**

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHGs), play a critical role in the Earth's radiation amount by trapping infrared radiation from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), ozone (O<sub>3</sub>), water vapor, nitrous oxide (N<sub>2</sub>O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to



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human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO<sub>2</sub> and N<sub>2</sub>O are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO<sub>2</sub>, where CO<sub>2</sub> is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

### **Water Vapor**

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop." The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

### **Carbon Dioxide**

The natural production and absorption of CO<sub>2</sub> is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s, each of these activities has increased in scale and distribution. CO<sub>2</sub> was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20<sup>th</sup> century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius or 3.6 degrees Fahrenheit.

### **Methane**

CH<sub>4</sub> is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO<sub>2</sub>. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO<sub>2</sub>, N<sub>2</sub>O, and Chlorofluorocarbons (CFCs)). CH<sub>4</sub> has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

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## Nitrous Oxide

Concentrations of N<sub>2</sub>O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N<sub>2</sub>O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. N<sub>2</sub>O is also commonly used as an aerosol spray propellant (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and race cars).

## Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C<sub>2</sub>H<sub>6</sub>) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. They were used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

## Hydrofluorocarbons

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF<sub>3</sub>), HFC-134a (CF<sub>3</sub>CH<sub>2</sub>F), and HFC-152a (CH<sub>3</sub>CHF<sub>2</sub>). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

## Perfluorocarbons

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF<sub>4</sub>) and hexafluoroethane (C<sub>2</sub>F<sub>6</sub>). Concentrations of CF<sub>4</sub> in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

## Sulfur Hexafluoride

Sulfur Hexafluoride (SF<sub>6</sub>) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF<sub>6</sub> has the highest global warming potential of any gas evaluated; 23,900 times that of CO<sub>2</sub>. Concentrations in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

## Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the

incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

## 2.4 Global Warming Potential

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO<sub>2</sub>. The GHGs listed by the IPCC and the CEQA Guidelines are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. To simplify reporting and analysis, GHGs are commonly defined in terms of their GWP. The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO<sub>2</sub>e. The GWP of CO<sub>2</sub> is by definition, 1. The GWP values used in this analysis are based on the IPCC Second Assessment Report (SAR) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, and are detailed in Table A. The SAR GWPs are used in CARB's California inventory and AB32 Scoping Plan estimates.

**Table A – Global Warming Potentials, Atmospheric Lifetimes and Abundances of GHGs**

Gas	Atmospheric Lifetime (years) <sup>1</sup>	Global Warming Potential (100 Year Horizon) <sup>2</sup>	Atmospheric Abundance
Carbon Dioxide (CO <sub>2</sub> )	50-200	1	379 ppm
Methane (CH <sub>4</sub> )	9-15	21	1,774 ppb
Nitrous Oxide (N <sub>2</sub> O)	120	310	319 ppb
HFC-23	264	11,700	18 ppt
HFC-134a	14.6	1,300	35 ppt
HFC-152a	1.5	140	3.9 ppt
PFC: Tetrafluoromethane (CF <sub>4</sub> )	50,000	6,500	74 ppt
PFC: Hexafluoroethane (C <sub>2</sub> F <sub>6</sub> )	10,000	9,200	2.9 ppt
Sulfur Hexafluoride (SF <sub>6</sub> )	3,200	23,900	5.6 ppt

Notes:

<sup>1</sup> Defined as the half-life of the gas.

<sup>2</sup> Compared to the same quantity of CO<sub>2</sub> emissions.

Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion

Source: IPCC, 2007.

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## 3.0 AIR QUALITY MANAGEMENT

### 3.1 Regulatory Setting

The air quality at the project site is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

#### International

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by five percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries, but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012 and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

#### Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. NAAQS pollutants were identified using medical evidence and are shown below in Table C.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The SIP must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP.

On December 14, 2012, the EPA revised the primary annual PM<sub>2.5</sub> NAAQS from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup> and retained the 24 hour PM<sub>2.5</sub> standard at 35 µg/m<sup>3</sup> in order to provide increased protection for children, older adults, persons with pre-existing heart and lung disease and other at risk populations.

**Table B – State and Federal Criteria Pollutant Standards**

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O <sub>3</sub> )	0.09 ppm / 1-hour 0.07 ppm / 8-hour	0.075 ppm, / 8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) 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; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm / 1-hour 9.0 ppm / 8-hour	35.0 ppm / 1-hour 9.0 ppm / 8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO <sub>2</sub> )	0.18 ppm / 1-hour 0.030 ppm / annual	100 ppb / 1-hour 0.053 ppm / annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO <sub>2</sub> )	0.25 ppm / 1-hour 0.04 ppm / 24-hour	75 ppb / 1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM <sub>10</sub> )	50 µg/m <sup>3</sup> / 24-hour 20 µg/m <sup>3</sup> / annual	150 µg/m <sup>3</sup> / 24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; and (c) Increased risk of premature death from heart or lung diseases in elderly.
Fine Suspended Particulate Matter (PM <sub>2.5</sub> )	12 µg/m <sup>3</sup> / annual	35 µg/m <sup>3</sup> / 24-hour 12 µg/m <sup>3</sup> / annual	
Sulfates	25 µg/m <sup>3</sup> / 24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c ) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage.
Lead	1.5 µg/m <sup>3</sup> / 30-day	0.15 µg/m <sup>3</sup> / 3-month rolling	(a) Learning disabilities; and (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Source: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.

As indicated below in Table C, the Air Basin has been designated by EPA for the national standards as a non-attainment area for ozone (O<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>) and partial non-attainment for

lead. Currently, the Air Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), and respirable particulate matter (PM<sub>10</sub>).

**Table C – South Coast Air Basin Attainment Status**

Pollutant	Averaging Time	National Standards Attainment Date <sup>1</sup>	California Standards <sup>2</sup>
1979	1-Hour	Nonattainment (Extreme)	Nonattainment
1-Hour Ozone (O <sub>3</sub> ) <sup>3</sup>	(0.12 ppm)	11/15/2010 (not attained)	
1997	8-Hour	Nonattainment (Extreme)	
8-Hour Ozone (O <sub>3</sub> ) <sup>4</sup>	(0.08 ppm)	6/15/2024	
2008	8-Hour	Nonattainment (Extreme)	Attainment
8-Hour Ozone (O <sub>3</sub> )	(0.075 ppm)	12/31/2032	
Carbon Monoxide (CO)	1-Hour (35 ppm)	Attainment (Maintenance)	Attainment
	8-Hour (9 ppm)	6/11/2007 (attained)	
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>5</sup>	1-Hour	Unclassifiable/Attainment	Attainment
	(100 ppb)	Attained	
	Annual	Attainment (Maintenance)	
	(0.053 ppm)	9/22/1998	
Sulfur Dioxide (SO <sub>2</sub> ) <sup>6</sup>	1-Hour (75 ppb)	Designation Pending /Pending	Attainment
	24-Hour (0.14 ppm)	Unclassifiable/Attainment	
	Annual (0.03 ppm)	3/19/1979 (attained)	
PM <sub>10</sub>	24-Hour	Attainment (Maintenance)	Nonattainment
	(150 µg/m <sup>3</sup> )	July 26, 2013	
PM <sub>2.5</sub>	24-Hour	Nonattainment	Nonattainment
	(35 µg/m <sup>3</sup> )	12/14/2014	
	Annual	Nonattainment	
	(12.0 µg/m <sup>3</sup> )	4/5/2015	
Lead (Pb)	3-Months Rolling	Nonattainment (Partial) <sup>7</sup>	Nonattainment
	(0.15 µg/m <sup>3</sup> )	12/31/2015	

<sup>1</sup> Obtained from Draft 2012 AQMP, SCAQMD, 2012. A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

<sup>2</sup> Obtained from <http://www.arb.ca.gov/design/adm/adm.htm>.

<sup>3</sup> 1-hour O<sub>3</sub> standard (0.12 ppm) was revoked, effective June 15, 2005; however, the Air Basin has not attained this standard based on 2008-2010 data has some continuing obligations under the former standard.

<sup>4</sup> 1997 8-hour O<sub>3</sub> standard (0.08 ppm) was reduced (0.075 ppm), effective May 27, 2008; the 1997 O<sub>3</sub> standard and most related implementation rules remain in place until the 1997 standard is revoked by U.S. EPA.

<sup>5</sup> New NO<sub>2</sub> 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual NO<sub>2</sub> standard retained.

<sup>6</sup> The 1971 annual and 24-hour SO<sub>2</sub> standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO<sub>2</sub> 1-hour standard. Area designations are expected in 2012, with Basin designated Unclassifiable/Attainment

<sup>7</sup> Partial Nonattainment designation – Los Angeles County portion of Air Basin only.

In 2011, the Air Basin exceeded federal standards for either ozone or PM<sub>2.5</sub> at one or more locations on a total of 124 days, based on the current federal standards for 8-hour ozone and 24-hour PM<sub>2.5</sub>. Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Air Basin still exceed the NAAQS for ozone more frequently than any other stations in the U.S. In 2011, three of the top five stations that exceeded the 8-hour ozone NAAQS were located in the Air Basin (Central San Bernardino Mountains, East San Bernardino Valley, and Metropolitan Riverside County).

PM<sub>2.5</sub> in the Air Basin has improved significantly in recent years, with 2010 and 2011 being the cleanest years on record. In 2011, only one station in the Air Basin (Metropolitan Riverside County at Mira Loma) exceeded the annual PM<sub>2.5</sub> NAAQS and the 98<sup>th</sup> percentile form of the 24-hour PM<sub>2.5</sub> NAAQS,



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as well as the 3-year design values for these standards. Basin-wide, the federal PM<sub>2.5</sub> 24-hour standard level was exceeded in 2011 on 17 sampling days.

The Air Basin is currently in attainment for the federal standards for SO<sub>2</sub>, CO, and NO<sub>2</sub>. While the concentration level of the new 1-hour NO<sub>2</sub> federal standard (100 ppb) was exceeded in the Air Basin at two stations (Central Los Angeles and Long Beach) on the same day in 2011, the NAAQS NO<sub>2</sub> design value has not been exceeded. Therefore, the Basin remains in attainment of the NO<sub>2</sub> NAAQS.

The EPA designated the Los Angeles County portion of the Air Basin as nonattainment for the recently revised (2008) federal lead standard (0.15 µg/m<sup>3</sup>, rolling 3-month average), due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard in the 2007-2009 period of data used. For the most recent 2009-2011 data period, only one of these stations (Vernon) still exceeded the lead standard. The *2012 Lead State Implementation Plan Los Angeles County*, prepared by SCAQMD and adopted on May 4, 2012, provides measures to meet attainment of lead by December 31, 2015.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO<sub>2</sub> and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

The EPA has recently proposed several standards to reduce GHG emissions from power plants and other stationary sources. On September 13, 2013 the EPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO<sub>2</sub> per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO<sub>2</sub> per MWh for large natural gas-fired combustion units. These new standards make it impossible to construct new coal powered plants based on current available technology.

### **State – California Air Resources Board**

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control

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measures, provides oversight of local programs, and prepares the SIP. The CAAQS for criteria pollutants are shown above in Table B. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g. hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The Air Basin has been designated by the CARB as a non-attainment area for ozone, NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and lead. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, SO<sub>2</sub>, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

CARB is also responsible for regulations pertaining to Toxic Air Contaminants (TACs). The Air Toxics “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release in California. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

CARB also proposed interim statewide CEQA thresholds for GHG emissions and released *Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*, on October 24, 2008. The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

#### Executive Order B-30-15

The California Governor issued Executive Order B-30-15 on April 29, 2015 that aims to reduce California’s GHG emissions 40 percent below 1990 levels by 2030. This executive order aligns California’s GHG reduction targets with those of other international governments, such as the European Union that set the same target for 2030 in October, 2014. This target will make it possible to reach the ultimate goal of reducing GHG emissions 80 percent under 1990 levels by 2050 that is based on scientifically established levels needed in the U.S.A to limit global warming below 2 degrees Celsius – the warming threshold at which scientists say there will likely be major climate disruptions such as super droughts and rising sea levels.

#### Executive Order B-29-15

The California Governor issued Executive Order B-29-15 on April 1, 2015 and directed the Department of Water Resources to update the State’s Model Water Efficient Landscape Ordinance to require more efficient irrigation systems, promote greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles.



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### Assembly Bill 1493

California Assembly Bill 1493 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the “Pavley I” regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. These regulation will reduce GHG emissions by 30 percent from 2002 levels by 2016. The second set of regulations “Pavley II” is currently in development and will be phased in between model years 2017 through 2025 and will reduce emissions by 45 percent by the year 2020. The Pavley II standards are being developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the “LEV III” (third stage of the Low Emission Vehicle standards) into a single regulatory framework.

In 2005, the CARB submitted a “waiver” request to the EPA in order to implement the GHG standards and in March of 2008, the U.S. EPA denied the request. However, in June 2009, the decision was reversed and the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles. In September 2009, the Pavley I regulations were adopted by CARB.

### Executive Order S-3-05

The California Governor issued Executive Order S 3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels;
- 2020: Reduce greenhouse gas emissions to 1990 levels;
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

### Assembly Bill 32

In 2006, the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and utilize best management practices that are technologically feasible and cost effective.

On December 6, 2007 CARB released the calculated Year 1990 GHG emissions of 427 million metric tons of CO<sub>2</sub>e (MMTCO<sub>2</sub>e). The 2020 target of 427 MMTCO<sub>2</sub>e requires the reduction of 169 MMTCO<sub>2</sub>e, or approximately 30 percent from the State’s projected 2020 business as usual emissions of 596 MMTCO<sub>2</sub>e and the reduction of 42 MMTCO<sub>2</sub>e, or almost 10 percent from the 2002-2004 average GHG emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO<sub>2</sub> in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also

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approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources, all of which became enforceable on or before January 1, 2010.

On December 11, 2008 the CARB Board approved a Scoping Plan, with final adoption May 11, 2009 that proposed a variety of measures including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, a market-based cap-and-trade system, and a fee regulation to fund the program. In current pending litigation, *Association of Irrigated Residents v. California Air Resources Board*, a California State trial court found that the analysis of the alternatives identified in the AB 32 Scoping Plan Functional Equivalent Document was not sufficient for informed decision-making and public review under CEQA. In response, CARB appealed the decision. In addition, CARB prepared the *Supplement to the AB 32 Scoping Plan Functional Equivalent Document*, June 13, 2011. On August 24, 2011 CARB recertified the complete AB 32 Scoping Plan Functional Equivalent Environmental Document revised by the Final Supplement. In December, 2011 the Final Supplement was accepted as sufficient to fulfill the trial court's order.

#### Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September 2006. SB 1368 requires that the California Public Utilities Commission (CPUC) establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007 and for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by CPUC and California Energy Commission (CEC).

#### Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet annually beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

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### Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the State CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation."
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

### Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

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### Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

### Senate Bills 939 and 1374

Senate Bill 939 (SB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

### Executive Order B-29-15

Executive Order B-29-15 was issued on April 1, 2015 and directed the Department of Water Resources to update the State's Model Water Efficient Landscape Ordinance to require more efficient irrigation systems, promote greywater usage and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip and a flat surface is required to enter and exit vehicles.

### California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24) were first established 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 efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. On May 31, 2012 the Energy Commission adopted the proposed 2013 Building Standards that became effective on July 1, 2014. The 2013 Building Standards are anticipated to reduce energy use in residential buildings by 25 percent over the 2008 Standards and now require all hot water pipes to be insulated, the use of higher performance windows, installation of whole house fans, increased wall insulation, mandatory duct sealing, as well as requiring all roofs to be solar-ready to facilitate future solar systems ([http://www.energy.ca.gov/releases/2014\\_releases/2014-07-01\\_new\\_title24\\_standards\\_nr.html](http://www.energy.ca.gov/releases/2014_releases/2014-07-01_new_title24_standards_nr.html)).

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### California Code of Regulations (CCR) Title 24, Part 11

CCR Title 24, Part 11: *California Green Building Standards* (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current version is the 2013 California Green Building Standards Code (CalGreen), which became effective on January 1, 2014 and replaced the 2010 CalGreen. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for residential uses include a 20 percent reduction of potable water use within buildings through the use of low-flow faucets, outdoor water use is reduced through the use of smart irrigation system controllers, a 50 percent construction waste diversion from landfills, and use of building finish materials that emit low levels of volatile organic compounds.

### **Regional**

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

### South Coast Air Quality Management District

SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs. The *Final 2012 Air Quality Management Plan* (2012 AQMP) was adopted by the SCAQMD Board on December 7, 2012 and was adopted by CARB via Resolution 13-3 on January 25, 2013. The 2012 AQMP was prepared in order to meet the federal Clean Air Act requirement that all 24-hour PM<sub>2.5</sub> non-attainment areas prepare a SIP, that were required to be submitted to the U.S. EPA by December 14, 2012 and demonstrate attainment with the 24-hour PM<sub>2.5</sub> standard by 2014. The 2012 AQMP demonstrates attainment of the federal 24-hour PM<sub>2.5</sub> standard by 2014 in the Basin through adoption of all feasible measures, and therefore, no extension of the attainment date is needed.

The 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These “black box” emissions reductions represent 65 percent of the remaining NO<sub>x</sub> emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NO<sub>x</sub> control measures have been provided in this AQMP even though the primary purpose of this AQMP is to show compliance with 24-hour PM<sub>2.5</sub> emissions standards.

The 2012 AQMP is designed to satisfy the California Clean Air Act’s (CCAA) emission reductions of 5 percent per year or adoption of all feasible measures requirements and fulfill the EPA’s requirement to update transportation conformity emissions budgets based on the latest approved motor vehicle emissions model and planning assumptions. The 2012 AQMP updates and revises the previous 2007 AQMP. The 2012 AQMP was prepared to comply with the Federal and State CCAA and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet Federal and State ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2012 AQMP for the Basin is to set forth a comprehensive program that will lead this area into compliance with all federal and state air-quality planning requirements.



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The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the need to engage in interagency coordinated planning of mobile sources to meet all of the federal criteria pollutant standards. Compared with the 2007 AQMP, the 2012 AQMP utilizes revised emissions inventory projections that use 2008 as the base year. On-road emissions are calculated using CARB EMFAC2011 emission factors and the transportation activity data provided by SCAG from their 2012 Regional Transportation Plan (2012 RTP). Off-road emissions were updated using CARB's 2011 In-Use Off-Road Fleet Inventory Model. Since the 2007 AQMP was finalized new area source categories such as LPG transmission losses, storage tank and pipeline cleaning and degassing, and architectural colorants, were created and included in the emissions inventories. Composting waste was revised and now includes the emissions from green waste composting covered under SCAQMD Rule 1133.3. The 2012 AQMP also includes analysis of several additional sources of GHG emissions such as landfills and could also assist in reaching the GHG target goals in the AB32 Scoping Plan.

The control measures in the 2012 AQMP consist of three components: 1) Basin-wide and episodic short-term PM<sub>2.5</sub> measures; 2) Section 182(e)(5) implementation measures; and 3) Transportation control measures. Many of the control measures are not based on command and control regulations, but instead focus on incentives, outreach, and education to bring about emissions reductions through voluntary participation and behavioral changes. More broadly, a transition to zero- and near-zero emission technologies is necessary to meet 2023 and 2032 air quality standards and 2050 climate goals. Many of the same technologies will address both air quality and climate needs.

Although SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Basin. Instead, this is controlled through local jurisdictions in accordance to the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the *CEQA Air Quality Handbook* (SCAQMD CEQA Handbook), prepared by SCAQMD, 1993, with the most current updates found at <http://www.aqmd.gov/ceqa/hdbk.html>, was developed in accordance with the projections and programs detailed in the AQMPs. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. The SCAQMD intends that by providing this guidance, the air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the Basin, and adverse impacts will be minimized.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

#### *SCAQMD Working Group*

Since neither CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that either provides a quantitative annual thresholds of 3,500 MTCO<sub>2</sub>e for residential uses, 1,400 MTCO<sub>2</sub>e for commercial uses, and 3,000 MTCO<sub>2</sub>e for mixed uses. An alternative annual threshold of 3,000 MTCO<sub>2</sub>e for all land use types is also proposed.

#### *Rules 2700 and 2701*

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On December 5, 2008, the SCAQMD adopted Rules 2700 and 2701, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII - Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

#### *Rule 2702*

The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.

#### *Rule 3002*

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO<sub>2</sub>e are required to apply for a Title V permit. A Title V permit is for facilities that are considered major sources of emissions.

#### Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the RTP/SCS and *Regional Transportation Improvement Plan* (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The RTP/SCS, RTIP, and AQMP are based on projections originating within the City and County General Plans.

#### **Local – City of Lake Elsinore**

Local jurisdictions, such as the City of Lake Elsinore, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2007 AQMP and 2012 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the City assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will

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meet federal and state standards. Instead, the City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The City of Lake Elsinore General Plan contains the following air quality-related goals and policies that are applicable to the proposed project:

**Goal 2            Work with regional and state governments to develop effective mitigation measures to improve air quality.**

**Policy 2.1        Support the SCAQMD in its development of improved ambient air quality monitoring capabilities and establishment of standards, thresholds, and rules to address, and where necessary mitigate, the air quality impacts of new development.**

The City of Lake Elsinore has also adopted a Climate Action Plan that has adopted a GHG emissions reduction target based on a community-wide emissions reduction to 6.6 MTCO<sub>2</sub>e per service population per year by 2020. This is a 22.3 percent reduction from the 2008 rate of 8.5 MTCO<sub>2</sub>e per service population. The City of Lake Elsinore Climate Action Plan contains the following GHG-related measures that are applicable to the proposed project:

**Strategy T-1    Increase bicycle, pedestrian, and public transit travel**

**Measure T-1.1 Safe Routes to School.** Continue to pursue and utilize grant funding when needed to construct safe pedestrian and bicycle routes within a two mile radius of schools where applicable.

**Measure T-1.2 Pedestrian Infrastructure.** Through the development review process, require the installation of sidewalks along new and reconstructed streets. Also require new subdivisions and large developments to provide sidewalks or paths to internally link all uses where applicable and provide connections to neighborhood activity centers, major destinations, and transit facilities contiguous with the project site; implement through conditions of approval.

**Measure T-1.4 Bicycle Infrastructure.** Through the development review process, require new development, as applicable, to implement and connect to the network of Class I, II and III bikeways, trails and safety features identified in the General Plan, Bike Lane Master Plan, Trails Master Plan and Western Riverside County Non-Motorized Transportation plan; implement through conditions of approval. The City will also continue to pursue and utilize funding when needed to implement portions of these plans.

**Strategy T-3    Increase in efficiency of land use patterns**

**Measure T-3.1 Mixed-Use, High Density, Infill and Transit Oriented Development.** As part of the General Plan Update process, revise the Land Use Map and Municipal Code to allow for and/or increase the amount of mixed use, high density, infill and transit oriented development. Mixed-use projects should be targeted in the Historic and Ballpark Districts, as well as other areas where services are within walking distance. High density projects should be located in urbanized areas adjacent to services and transportation. Update the Municipal Code for consistency between zoning regulations and General Plan land use designations.



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## **Strategy E-1 Reduce energy demand of new construction**

**Measure E-1.1 Tree Planting Requirements.** Through the development review process, require new development to plant at minimum one 15-gallon nondeciduous, umbrella-form tree per 30 linear feet of boundary length near buildings, per the Municipal Code. Trees shall be planted in strategic locations around buildings or to shade pavement in parking lots and streets.

**Measure E-1.3 Energy Efficient Building Standards.** Adopt an ordinance requiring that all new construction exceed the California Energy Code requirements, based on the 2008 Energy Efficiency Standards by 15% (consistent with CalGreen Tier 1), through either the performance based or prescriptive approach described in the California Green Building Code; implement through conditions of approval. Alternately, a solar photovoltaic system and/or solar water heating may be used to assist in meeting all or a portion of the 15% requirement.

## **Strategy E-4 Decrease water consumption**

**Measure E-4.1 Landscaping Ordinance.** Through the development review process, enforce the City's Assembly Bill 1881 Landscaping Ordinance; implement through conditions of approval.

**Measure E-4.2 Indoor Water Conservation Requirements.** Amend the City's Uniform Building Code to require development projects to reduce indoor water consumption by 30% (consistent with CalGreen Tier 1, Section A5.303.2.3.1), and implement through conditions of approval.

## **Strategy S-1 Increase solid waste diversion**

**Measure S-1.4 Construction and Demolition Waste Diversion.** Amend the Municipal Code to require development projects to divert, recycle or salvage at least 65% of nonhazardous construction and demolition debris generated at the site by 2020 (consistent with CalGreen Tier 1, Section A 5.408.3.1). Require all construction and demolition projects to be accompanied by a waste management plan for the project and a copy of the completed waste management report shall be provided upon completion.

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## 4.0 ATMOSPHERIC SETTING

### ***4.1 Regional – Western Riverside County***

The project site is located within the western portion of Riverside County, which is part of the South Coast Air Basin (Air Basin) that includes the non-desert portions of Riverside, San Bernardino, and Los Angeles Counties and all of all of Orange County. Temperature inversions are the prime factor in the accumulation of contaminants in the Air Basin. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The topography and climate of Southern California combine to create an area of high air pollution potential in the Air Basin. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cup over the cool marine layer, which prevents pollution from dispersing upward. This inversion allows pollutants to accumulate within the lower layer. Light winds during the summer further limit ventilation from occurring.

Due to the low average wind speeds in the summer and a persistent daytime temperature inversion, emissions of hydrocarbons and oxides of nitrogen have an opportunity to combine with sunlight in a complex series of reactions. These reactions produce a photochemical oxidant commonly known as smog. Since the Air Basin experiences more days of sunlight than any other major urban area in the United States, except Phoenix, the smog potential in the region is higher than in most other areas of the nation.

### ***4.2 Local – Lake Elsinore***

The major factors affecting local air pollution conditions in the Lake Elsinore planning area are the extent and types of both region-wide and local emissions, climate, and meteorology. The general climate of Lake Elsinore is characterized by sparse winter rainfall and hot summers tempered by cool ocean breezes. The climate in and around Lake Elsinore, as well as most of Southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. This high-pressure cell produces a typical Mediterranean climate with warm summers, mild winters, and moderate rainfall. This pattern is infrequently interrupted by periods of extremely hot weather brought in by Santa Ana winds. Most of the area's precipitation occurs intermittently between November and April; the area is still dominated by sunny or partly sunny conditions during these months. Cyclic land and sea breezes are the primary factors affecting the region's mild climate. The daytime winds are normally sea breezes, predominantly from the west, that flow at relatively low velocities.

Just south of Lake Elsinore, the Lake Elsinore Convergence Zone acts as an invisible boundary that obstructs much of the inland basin air pollutants from continuing south beyond the Lake Elsinore area. Coastal winds within the Lake Elsinore Convergence Zone are a primary factor for the obstruction. They allow air pollutants to be dispersed just south of the convergence zone and accumulate within the Lake Elsinore area, including surrounding communities to the north and east.

The temperature and precipitation levels for Lake Elsinore is shown below in Table D and is based on the average of data from March 10, 1897 to January 20, 2015. Table D shows that August is typically the warmest month and January is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

**Table D – Monthly Climate Data**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Average Max. Temperature</b>	65.4	67.5	71.0	76.3	81.8	90.5	98.1	98.1	93.5	83.7	74.1	66.9
<b>Average Min. Temperature</b>	36.4	38.7	41.2	44.7	49.8	54.1	59.4	59.8	55.8	48.8	41.1	36.5
<b>Average Total Precipitation (in.)</b>	2.47	2.54	2.03	0.75	0.23	0.02	0.08	0.12	0.26	0.51	0.99	2.01

Source: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2805>

### ***4.3 Monitored Local Air Quality***

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the Air Basin. Estimates of the existing emissions in the Air Basin provided in the 2012 AQMP, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NO<sub>x</sub> emissions and 40 percent of directly emitted PM<sub>2.5</sub>, with another 10 percent of PM<sub>2.5</sub> from road dust.

SCAQMD has divided the Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the Lake Elsinore Air Monitoring Area (Area 25), which is located in the southwest corner of Riverside County and covers from the Orange and San Diego County Lines to Canyon Lake. The nearest air monitoring station to the project site is the Lake Elsinore West Flint Street Air Monitoring Station (Lake Elsinore Station). The Lake Elsinore Station is located approximately 2.8 miles east of the project site at 506 W Flint Street, Lake Elsinore. However, it should be noted that due to the air monitoring station's distance from the project site, recorded air pollution levels at the Lake Elsinore Station reflect with varying degrees of accuracy, local air quality conditions at the project site. The monitoring data presented in Table E shows that ozone and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) are the air pollutants of primary concern in the project area, which are detailed below:

#### **Ozone**

During the last three years, the State 1-hour concentration standard for ozone has been exceeded between 4 and 10 days each year over the past three years at the Lake Elsinore Station. The State 8-hour ozone standard has been exceeded between 13 and 32 days each year over the past three years at the Lake Elsinore Station. The Federal 8-hour ozone standard has been exceeded between 6 and 17 days each year over the past three years at the Lake Elsinore Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO<sub>2</sub>, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of Southern California contribute to the ozone levels experienced at this monitoring station, with the more significant areas being those directly upwind.

#### **Nitrogen Dioxide**

The Lake Elsinore Station did not record an exceedance of the Federal 1-hour NO<sub>2</sub> standard for the last three years.

**Table E – Local Area Air Quality Monitoring Summary**

Pollutant (Standard)	Year <sup>1</sup>		
	2012	2013	2014
<b>Ozone:</b>			
Maximum 1-Hour Concentration (ppm)	0.111	0.102	0.104
Days > CAAQS (0.09 ppm)	<b>10</b>	<b>6</b>	<b>4</b>
Maximum 8-Hour Concentration (ppm)	0.089	0.089	0.086
Days > NAAQS (0.075 ppm)	<b>17</b>	<b>12</b>	<b>6</b>
Days > CAAQs (0.070 ppm)	<b>32</b>	<b>25</b>	<b>13</b>
<b>Carbon Monoxide:</b>			
Maximum 1-Hour Concentration (ppm)	2.6	0.6	--*
Days > NAAQS and CAAQS (20 ppm)	0	0	--*
Maximum 8-Hour Concentration (ppm)	0.52	--*	--*
Days > NAAQS and CAAQS (9 ppm)	0	--*	--*
<b>Nitrogen Dioxide:</b>			
Maximum 1-Hour Concentration (ppb)	48.3	46.5	45.3
Days > NAAQS (100 ppb)	0	0	0
<b>Inhalable Particulates (PM10):</b>			
Maximum 24-Hour California Measurement (ug/m <sup>3</sup> )	65.5	112.3	86.8
Days > NAAQS (150 ug/m <sup>3</sup> )	0	0	0
Days > CAAQS (50 ug/m <sup>3</sup> )	--*	--*	--*
Annual Arithmetic Mean (AAM) (ug/m <sup>3</sup> )	21.9	25.0	26.0
Annual > NAAQS (50 ug/m <sup>3</sup> )	No	No	No
Annual > CAAQS (20 ug/m <sup>3</sup> )	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Ultra-Fine Particulates (PM2.5):</b>			
Maximum 24-Hour National Measurement (ug/m <sup>3</sup> )	24.9	37.4	33.7
Days > NAAQS (35 ug/m <sup>3</sup> )	--*	--*	--*
Annual Arithmetic Mean (AAM) (ug/m <sup>3</sup> )	10.5	--*	11.8
Annual > NAAQS and CAAQS (12 ug/m <sup>3</sup> )	No	--*	No

Notes: Exceedances are listed in **bold**. CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb = parts per billion.

<sup>1</sup> Data obtained from Lake Elsinore Station.

\* Insufficient or no data.

Source: <http://www.arb.ca.gov/adam/>

## Particulate Matter

The State 24-hour concentration standard for PM10 was not available over the past three years at the Lake Elsinore Station. Over the past three years the Federal 24-hour standard for PM10 has not been exceeded at the Lake Elsinore Station. The annual PM10 concentration at the Lake Elsinore Station has exceeded the State standard for the past three years and has not exceeded the Federal standard for the past three years.

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Over the past three years the 24-hour concentration standard for PM<sub>2.5</sub> was not available over the past three years at the Lake Elsinore Station. The annual PM<sub>2.5</sub> concentration at the Lake Elsinore Station did not exceed either the State or Federal standard for years 2012 and 2014 and the data was not available for year 2013. There does not appear to be a noticeable trend for PM<sub>10</sub> or PM<sub>2.5</sub> in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM<sub>10</sub> and PM<sub>2.5</sub>). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM<sub>10</sub> and PM<sub>2.5</sub>. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

#### ***4.4 Toxic Air Contaminant Levels in the Air Basin***

In order to determine the Air Basin-wide risks associated with major airborne carcinogens, the SCAQMD conducted the Multiple Air Toxics Exposure Study (MATES) studies. According to the SCAQMD's MATES-IV study, the project site has an estimated cancer risk of 122 per million persons chance of cancer. In comparison, the average cancer risk for the Air Basin is 367 per million persons.

In order to provide a perspective of risk, it is often estimated that the incidence in cancer over a lifetime for the U.S. population ranges between 1 in 3 to 4 and 1 in 3, or a risk of about 300,000 per million persons. The MATES-III study referenced a Harvard Report on Cancer Prevention, which estimated that of cancers associated with known risk factors, about 30 percent were related to tobacco, about 30 percent were related to diet and obesity, and about 2 percent were associated with environmental pollution related exposures that includes hazardous air pollutants.

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## **5.0 MODELING PARAMETERS AND ASSUMPTIONS**

### ***5.1 Construction Emissions Modeling***

The construction-related criteria air pollution and GHG emissions impacts created by the proposed project have been analyzed through use of CalEEMod Version 2013.2.2. CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2011 computer program to calculate the emission rates specific for Riverside County for construction-related employee, vendor and haul truck vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy equipment operations. EMFAC2011 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour.

The proposed project was analyzed in the CalEEMod model based on of 152 low-rise apartment units on 6 acres and a 349 space parking lot on 2 acres for a total project area of 8 acres. Construction activities are anticipated to start around mid 2016 and take approximately 15 months to complete.

The construction-related GHG emissions were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The phases of construction activities that have been analyzed are detailed below and include: 1) site preparation, 2) grading, 3) building construction, 4) paving, and 5) application of architectural coatings.

#### **Site Preparation**

The site preparation phase would consist of removing any vegetation, tree stumps, and stones onsite prior to grading. The site preparation phase is anticipated to start around June 2016 and was modeled as occurring over two weeks. The site preparation activities would require up to 18 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the site preparation phase. The onsite equipment would consist of three rubber tired dozers and four of either a tractor, loader, or backhoe, which is based on the CalEEMod default equipment mix. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

#### **Grading**

The grading phase would occur after the completion of the site preparation phase and is anticipated to take approximately four weeks to complete. The proposed grading is balanced, which would result in no dirt being imported or exported from the project site. The grading activities would require up to 15 worker trips per day. In order to account for water truck emissions, six vendor truck emissions were added to the grading phase. The onsite equipment would consist of the simultaneous operation of one excavator, one grader, one rubber tired dozer, and three of either a tractor, loader or backhoe, which is based on the CalEEMod default equipment mix. The mitigation of water all exposed areas three times per day was chosen in order to account for the fugitive dust reduction that would occur through adhering to SCAQMD Rule 403, which requires that the Best Available Control Measures be utilized to reduce fugitive dust emissions.

#### **Building Construction**

The building construction would occur after the completion of the grading phase. The building construction phase was modeled based on occurring over 11 months. The building construction would require up to 112 worker trips and 17 vendor trips per day. The onsite equipment would consist of the



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simultaneous operation of one crane, three forklifts, one generator set, one welder, and three of either a tractor, loader, or backhoe, which is based on the CalEEMod default equipment mix.

### **Paving**

The paving would occur after the completion of the building construction phase. The paving phase was modeled based on the paving of the onsite roads and parking spaces that would require paving approximately two acres of the project site. The paving activities would occur over four weeks and would require up to 15 worker trips per day. The onsite equipment would consist of the simultaneous operation of two pavers, two paving equipment, and two rollers, which is based on the CalEEMod default equipment mix.

### **Architectural Coating**

The application of architectural coatings would occur after the completion of the paving phase. The architectural coating phase was modeled based on covering 307,800 square feet of residential interior area, 102,600 square feet of residential exterior area, and 325 square feet of non-residential area. The architectural coating phase would occur over two months and would require approximately 22 worker trips per day. The onsite equipment would consist of one air compressor, which is based on the CalEEMod default equipment mix.

## ***5.2 Operational Emissions Modeling***

The operations-related criteria air pollutant emissions and GHG emissions created by the proposed project have been analyzed through use of the CalEEMod model. The proposed project was analyzed in the CalEEMod model based on 152 low-rise apartment units on 6 acres and a 349 space parking lot on 2 acres. The operating emissions for the criteria pollutant analysis were based on a CalEEMod model run with an operational year of 2017, which is the anticipated opening year for the proposed project. Two CalEEMod model runs were utilized for the GHG emissions analysis, in order to determine consistency with the City's Climate Action Plan that requires a 22.3 percent reduction in GHG emissions between years 2008 and 2020, the CalEEMod model was run once with an operational year of 2010, which is the closest operational year available to 2008 and a second model run with an operational year of 2020. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

### **Mobile Sources**

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trip rates from the *Traffic Impact Analysis Lakeshore Pointe Lake Elsinore, California* (Traffic Impact Analysis), prepared by Infrastructure Group, Inc., October 22, 2015, into the CalEEMod Model. The Traffic Impact Analysis found that the proposed project would create 1,011 trips per day, which is based on each apartment generating 6.65 trips per weekday. The CalEEMod default vehicle trip lengths of 14.7 miles for home to work, 5.9 miles for home to shopping, and 8.7 miles for home to other locations were also used in the analysis.

In order to account for the project location that is adjacent to Lakeside High School and commercial uses, the project setting was set to Suburban Center for both year 2010 and year 2020 GHG analyses. The year 2020 GHG analysis included implementation of Measure T-1.2 from the Climate Action Plan, which requires the installation of sidewalks along all new streets as well as internal paths to link to neighborhood activity centers, major destinations and transit facilities. In order to ensure that the project applicant installs sidewalks along all new streets as well as internal paths to link to neighborhood activity centers and transit facilities, Project Design Feature 1 has been incorporated into this analysis.

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The year 2020 GHG analysis also accounted for implementation of Measure T-3.1 from the Climate Action Plan that encourages the development of high density residential developments adjacent to services and transit, since Riverside Transit Bus Route 8 has a bus stop that is located approximately 210 feet northeast of the project site, Mitigation of Increase Transit Accessibility with a Transit Station located within 0.1 mile of the project site was selected for the year 2020 GHG analyses in the CalEEMod model.

### **Area Sources**

Area sources include emissions from hearths, consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed 152 apartments in the CalEEMod model. The project applicant has stated that no fireplaces would be constructed in any home. Therefore, the CalEEMod model was modeled with no fireplaces. No other changes were made to the default area source parameters.

### **Energy Usage**

Energy usage includes emissions from natural gas used onsite. The energy usage was based on the on-going use of the proposed 152 apartments in the CalEEMod model. No changes were made to the default energy usage parameters.

The year 2020 GHG analysis included implementation of Measure E-1.3 from the Climate Action Plan, which requires that all new construction exceed the 2008 Energy Efficiency Standards (Title 24 Standards) by 15 percent. It should be noted that the Title 24, Part 6 2013 Building Energy Efficiency Standards that became effective on January 1, 2014, result in a 25 percent improvement to the prior 2008 Title 24 building standards. Therefore, no mitigation is required to meet the City's requirement of a 15 percent reduction over the 2008 Energy Efficiency Standards and a 25 percent reduction was applied to the year 2020 GHG analysis energy usage calculations in the CalEEMod model.

### **Solid Waste**

Waste includes the GHG emissions associated with the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. The analysis was based on the default CalEEMod waste generation rates of 70 tons of solid waste per year from the 152 apartment units. All emission factors were based on the default emission levels in the CalEEMod model.

The year 2020 GHG analysis included implementation of Strategy S-1 that requires an increase in solid waste diversion. Senate Bills 939 and 1374, require that a minimum of 50 percent of solid waste be diverted from landfills. In order to account for Senate Bills 939 and 1374, a 50 percent reduction in waste disposed was selected in the CalEEMod model.

### **Water and Wastewater**

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. The analysis was based on the default CalEEMod water usage rate of 9,903,412 gallons per year of indoor water usage and 6,243,455 gallons per year of outdoor water usage from the 152 apartment units. All other emission factors were based on the default emission levels in the CalEEMod model.

The year 2020 GHG analysis included implementation of Measures E-4.1 and E-4.2 from the Climate Action Plan. Measure E-4.1 requires implementation of the City's Assembly Bill 1881 Landscape Ordinance, which limits turf area to 25 percent of the irrigated area, 80 percent of the plants shall be either native plants or low-water using plants, and spray nozzles must be less than one inch per hour. Executive Order B-29-15 is a statewide regulation that requires all landscape plans to limit turf area to 25



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percent and utilize efficient irrigation systems. In order to account for Executive Order B-29-15, a 25 percent reduction in turf and use water-efficient irrigation systems were selected in the CalEEMod model.

The year 2020 GHG analysis also included implementation of Measure E-4.2, requires that new developments reduce indoor water consumption by 30 percent. Implementation of 2013 Title 24 Part 11 (CalGreen) standards, which are statewide regulations are anticipated to result in a 30 percent reduction in indoor water usage through requiring the use of low-flow faucets, showers, and toilets. In order to account for the CalGreen building standards, Install low-flow faucets, toilets, and showers were selected in the CalEEMod model.

### **Vegetation**

The year 2020 GHG analysis included implementation of Measure E-1.1 from the Climate Action Plan, which requires that all new developments plant a minimum one 15 gallon nondeciduous umbrella form tree per 30 linear feet of boundary length. The exact implementation of Measure E-1.1 will be determined in the Landscape Plan, however since the Landscape Plan has not yet been completed, this analysis estimated the number of trees based on the project site boundary, which is approximately 2,700 linear feet and would result in the planting of 90 trees. Since the CalEEMod model provides the total metric tons anticipated to be sequestered over the trees lifetime, the CalEEMod results have been amortized over 30 years in order to obtain the anticipated annual GHG emissions reductions. In order to ensure compliance with this measure, Project Design Feature 2 has been incorporated into this analysis.

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## 6.0 THRESHOLDS OF SIGNIFICANCE

### 6.1 Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the Air Basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table F.

**Table F – SCAQMD Regional Criteria Pollutant Emission Thresholds of Significance**

	Pollutant Emissions (pounds/day)						
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	Lead
<b>Construction</b>	75	100	550	150	150	55	3
<b>Operation</b>	55	55	550	150	150	55	3

Source: <http://www.aqmd.gov/ceqa/handbook/signthres.pdf>

### 6.2 Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. SCAQMD has also provided *Final Localized Significance Threshold Methodology* (LST Methodology), July 2008, which details the methodology to analyze local air emission impacts. The LST Methodology found that the primary emissions of concern are NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>.

The LST Methodology provides Look-Up Tables with different thresholds based on the location and size of the project site and distance to the nearest sensitive receptors. The project site is 5.5-acres however the project applicant has stated that no more than 5-acres would be disturbed in any day during construction activities associated with the proposed project and therefore, the 5-acre project site shown in the Look-Up Tables was utilized for this analysis.

As detailed above in Section 4.2, the project site is located in the Lake Elsinore Air Monitoring Area 25. The nearest sensitive receptors to the project site consist of the structures at Lakeside High School as near as 150 feet (46 meters) southwest of the project site, RV campsites as near as 230 feet (70 meters) southeast of the project site, and single-family homes as near as 350 feet (107 meters) northwest of the project site. Since the Look-Up Tables provide thresholds for 25, 50, 100 200, and 500 meters, the 25 and 50 meter thresholds were interpolated to find the thresholds for 46 meters. Table G below shows the LSTs for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> for both construction and operational activities.

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**Table G – SCAQMD Local Air Quality Thresholds of Significance**

Activity	Allowable Emissions (pounds/day) <sup>1</sup>			
	NOx	CO	PM10	PM2.5
Construction	408	2,586	35	10
Operation	408	2,586	9	3

Notes:

<sup>1</sup> The nearest sensitive receptor is Lakeside High School with structures as near as 150 feet (46 meters) from the project site.

Source: Calculated from SCAQMD's Mass Rate Look-up Tables for five acres in Lake Elsinore.

### **6.3 Toxic Air Contaminants**

According to the SCAQMD CEQA Handbook, any project that has the potential to expose the public to toxic air contaminants in excess of the following thresholds would be considered to have a significant air quality impact:

- If the Maximum Incremental Cancer Risk is 10 in one million or greater; or
- Toxic air contaminants from the proposed project would result in a Hazard Index increase of 1 or greater.

In order to determine if the proposed project may have a significant impact related to toxic air contaminants (TACs), the *Health Risk Assessment Guidance for analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*, (Diesel Analysis) prepared by SCAQMD, August 2003, recommends that if the proposed project is anticipated to create TACs through stationary sources or regular operations of diesel trucks on the project site, then the proximity of the nearest receptors to the source of the TAC and the toxicity of the HAP should be analyzed through a comprehensive facility-wide health risk assessment (HRA).

### **6.4 Odor Impacts**

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which 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 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.”

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

### **6.5 Greenhouse Gases**

The City of Lake Elsinore has adopted the *City of Lake Elsinore Climate Action Plan*, on December 13, 2011, that includes a GHG emissions reduction target based on a community-wide emissions reduction to 6.6 MTCO<sub>2</sub>e per service population per year by 2020. This is a 22.3 percent reduction from the 2008 rate of 8.5 MTCO<sub>2</sub>e per service population. These efficiency-based targets were derived by dividing the statewide AB 32 targeted emissions levels for 2020 and statewide Executive Order S-3-05 targeted emissions level for 2030 by the 2020 and 2030 statewide service population respectively. These targets

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represent the maximum quantity of emissions each resident and employee in the State of California could emit in 2020 and 2030 based on emissions levels necessary to achieve the statewide AB 32 and Executive Order S-3-05 GHG emissions reduction goals. Therefore, the proposed project would be considered to create a significant cumulative GHG emissions impact if the proposed project's GHG emissions are not 22.3 percent less than GHG emissions from business-as-usual conditions for a similar size project in year 2008.

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## 7.0 IMPACT ANALYSIS

### ***7.1 CEQA Thresholds of Significance***

Consistent with CEQA and the State CEQA Guidelines, a significant impact related to air quality and global climate change would occur if the proposed project is determined to result in:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

### ***7.2 Air Quality Compliance***

The proposed project would not conflict with or obstruct implementation of the SCAQMD Air Quality Management Plan (AQMP). The following section discusses the proposed project's consistency with the SCAQMD AQMP.

#### **SCAQMD Air Quality Management Plan**

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable GPs and regional plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD AQMP. Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

- (1) Whether the project will 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.

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- (2) Whether the project will exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, short-term regional construction air emissions would not result in significant impacts based on SCAQMD regional thresholds of significance discussed above in Section 6.1 or local thresholds of significance discussed above in Section 6.2. The long-term operation of the proposed project would not result in significant impacts based on SCAQMD regional thresholds of significance discussed in Section 6.1 and the analysis found that the operation of the proposed project would generate air pollutant emissions that are inconsequential on a regional basis. The analysis for long-term local air quality impacts showed that local pollutant concentrations would not be projected to exceed the local thresholds of significance discussed above in Section 6.2. Therefore, no long-term impact would occur and no mitigation would be required.

As such, based on the information provided above, the proposed project would be consistent with the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to insure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The *2012-2035 Regional Transportation/Sustainable Communities Strategy*, prepared by SCAG, consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Lake Elsinore Lake View District Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Residential Mixed Use in the General Plan and is zoned Residential/Mixed-Use (RMU). The proposed project would consist of the development of 152 apartment units on 8-acres, which would result in a density of 19 dwelling units per acre. The proposed project is not consistent with Municipal Code Section 17.86.040, that limits projects with only residential units in the RMU zone to a maximum density of 18 dwelling units per acre. However, Riverside Transit Bus Route 8 has a bus stop that is located approximately 210 feet northeast of the project site and Municipal Code Section 17.86.060(B)(7) allows projects that are located within 1,500 feet of the project site a density bonus up to 35 dwelling units per acre. As such, the proposed project would be within the allowable density that is allowed for RMU and would not result in an inconsistency with the current land use designation. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

**Level of Significance**

Less than significant impact.



### 7.3 Air Quality Standard Violation

The proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. The following section calculates the potential air emissions associated with the construction and operations of the proposed project and compares the emissions to the SCAQMD standards.

#### Construction Emissions

The proposed project would consist of construction of 152 residential apartment units and a public common area that contains a clubhouse and pool. The construction emissions have been analyzed for both regional and local air quality impacts as well as potential toxic air impacts.

#### Construction-Related Regional Impacts

The CalEEMod model has been utilized to calculate the construction-related regional emissions from the proposed project and the input parameters utilized in this analysis have been detailed in Section 5.1. The worst-case daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown below in Table H and the CalEEMod daily printouts are shown in Appendix A.

**Table H – Construction-Related Criteria Pollutant Emissions**

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Site Preparation<sup>1</sup></b>						
Onsite <sup>2</sup>	5.08	54.63	41.11	0.04	9.98	6.58
Offsite <sup>3</sup>	0.12	0.60	1.55	0.00	0.25	0.07
<b>Total</b>	<b>5.20</b>	<b>55.23</b>	<b>42.66</b>	<b>0.04</b>	<b>10.23</b>	<b>6.65</b>
<b>Grading<sup>1</sup></b>						
Onsite	3.67	38.45	26.08	0.03	4.75	3.34
Offsite	0.10	0.59	1.38	0.00	0.22	0.07
<b>Total</b>	<b>3.77</b>	<b>39.04</b>	<b>27.46</b>	<b>0.03</b>	<b>4.97</b>	<b>3.41</b>
<b>Building Construction</b>						
Onsite	3.41	28.51	18.51	0.03	1.97	1.85
Offsite	0.56	2.00	7.85	0.02	1.39	0.40
<b>Total</b>	<b>3.97</b>	<b>30.51</b>	<b>26.36</b>	<b>0.05</b>	<b>3.36</b>	<b>2.25</b>
<b>Paving</b>						
Onsite	2.17	20.30	14.73	0.02	1.14	1.05
Offsite	0.05	0.07	0.76	0.00	0.17	0.05
<b>Total</b>	<b>2.22</b>	<b>20.37</b>	<b>15.49</b>	<b>0.02</b>	<b>1.31</b>	<b>1.10</b>
<b>Architectural Coatings</b>						
Onsite	26.83	2.19	1.87	0.00	0.17	0.17
Offsite	0.08	0.10	1.12	0.00	0.25	0.07
<b>Total</b>	<b>26.91</b>	<b>2.29</b>	<b>2.99</b>	<b>0.00</b>	<b>0.42</b>	<b>0.24</b>
<b>SCQAMD Thresholds</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
Exceeds Threshold?	No	No	No	No	No	No

Notes:

<sup>1</sup> Site preparation and grading emissions based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.

<sup>2</sup> Onsite emissions from equipment not operated on public roads.

<sup>3</sup> Offsite emissions from vehicles operating on public roads.

Source: CalEEMod Version 2013.2.2.

Table H shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

### Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed project has been analyzed for the potential local criteria pollutant impacts created from construction-related fugitive dust and construction equipment and from toxic air contaminants created from diesel emissions.

#### *Local Criteria Pollutant Impacts from Construction*

The local air quality emissions from construction were analyzed through utilizing the methodology described in the LST Methodology. The LST Methodology found the primary criteria pollutant emissions of concern are NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>. In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily onsite emissions of CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from the proposed project could result in a significant impact to the local air quality. Table I shows the onsite emissions from the CalEEMod model for the different construction phases and the calculated emissions thresholds that have been detailed above in Section 6.2.

**Table I – Local Criteria Pollutant Construction Emissions at the Nearest Receptors**

Phase	Pollutant Emissions (pounds/day)			
	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
Site Preparation <sup>1</sup>	54.63	41.11	9.98	6.58
Grading <sup>1</sup>	38.45	26.08	4.75	3.34
Building Construction	28.51	18.51	1.97	1.85
Paving	20.30	14.73	1.14	1.05
Architectural Coatings	2.19	1.87	0.17	0.17
SCAQMD Thresholds for 150 feet (46 meters) <sup>2</sup>	<b>408</b>	<b>2,586</b>	<b>35</b>	<b>10</b>
Exceeds Threshold?	No	No	No	No

Notes:

<sup>1</sup> Site preparation and grading emissions based on adherence to fugitive dust suppression requirements from SCAQMD Rule 403.

<sup>2</sup> The nearest sensitive receptor is Lakeside High School with structures as near as 150 feet (46 meters) from the project site.

Source: Vista Environmental, calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for five acres in Lake Elsinore.

The data provided in Table I shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

#### *Construction-Related Toxic Air Contaminant Impacts*

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to SCAQMD's methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer

risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

## Operational Emissions

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project. The potential operations-related air emissions have been analyzed below for the regional and local criteria pollutant emissions and cumulative impacts.

### Operations-Related Regional Criteria Pollutant Analysis

The operations-related regional criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model and the input parameters utilized in this analysis have been detailed in Section 5.2. The worst-case summer or winter VOC, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> daily criteria pollutant emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table J and the CalEEMod daily emissions printouts are shown in Appendix A.

**Table J – Operational Regional Criteria Air Pollutant Emissions**

Activity	Pollutant Emissions (pounds/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area Sources <sup>1</sup>	3.83	0.15	12.70	0.00	0.07	0.07
Energy Usage <sup>2</sup>	0.06	0.53	0.22	0.00	0.04	0.04
Mobile Sources <sup>3</sup>	3.90	12.85	43.64	0.12	8.06	2.27
<b>Total Emissions</b>	<b>7.79</b>	<b>13.53</b>	<b>56.56</b>	<b>0.12</b>	<b>8.17</b>	<b>2.38</b>
<b>SCQAMD Operational Thresholds</b>	55	55	550	150	150	55
<b>Exceeds Threshold?</b>	No	No	No	No	No	No

Notes:

<sup>1</sup> Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

<sup>2</sup> Energy usage consist of emissions from natural gas usage.

<sup>3</sup> Mobile sources consist of emissions from vehicles and road dust.

Source: Vista Environmental, calculated from CalEEMod Version 2013.2.2.

The data provided in Table J above shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

### Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analysis analyzes the vehicular CO emissions, local impacts from onsite operations, and toxic air contaminant impacts from onsite diesel trucks.

#### *Local CO Hotspot Impacts from Project-Generated Vehicular Trips*

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards of 20 ppm over one hour or 9 ppm over eight hours.

At the time of the 1993 Handbook, the Air Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Air Basin and in the state have steadily declined. A detailed CO analysis was conducted in the *Federal Attainment Plan for Carbon Monoxide* (CO Plan) for SCAQMD's 2003 Air Quality Management Plan. The locations selected for microscaling modeling in the CO Plan were the busiest intersections in Los Angeles during the peak morning and afternoon periods and did not predict a violation of CO standards<sup>1</sup>. Since the nearby intersections to the proposed project are much smaller with less traffic than what was analyzed by the SCAQMD, no local CO Hotspot are anticipated to be created from the proposed project and no CO Hotspot modeling was performed. Therefore, a less than significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

#### *Local Criteria Pollutant Impacts from Onsite Operations*

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances may have the potential to create emissions areas that exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Air Basin.

The local air quality emissions from on-site operations were analyzed using the SCAQMD's Mass Rate LST Look-up Tables and the methodology described in LST Methodology. The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. Table K shows the onsite emissions from the CalEEMod model that includes area sources, energy usage, and vehicles operating on-site and the calculated emissions thresholds.

**Table K – Local Criteria Pollutant Operational Emissions at the Nearest Receptors**

On-Site Emission Source	Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Area Sources	0.07	6.40	0.03	0.03
Energy Usage	0.66	0.28	0.05	0.05
Onsite Vehicle Emissions <sup>1</sup>	1.13	4.11	0.72	0.20
<b>Total Emissions</b>	<b>1.86</b>	<b>10.79</b>	<b>0.80</b>	<b>0.28</b>
SCAQMD Thresholds for 150 feet (46 meters) <sup>2</sup>	270	1,746	4	2
Exceeds Threshold?	No	No	No	No

Notes:

<sup>1</sup> Onsite vehicle emissions based on 1/8 of the gross vehicular emissions, which is the estimated portion of vehicle emissions occurring within a quarter mile of the project site.

<sup>2</sup> The nearest sensitive receptors is Lakeside High School with structures as near as 150 feet (46 meters) from the project site.

Source: Calculated from CalEEMod2013 and SCAQMD's Mass Rate Look-up Tables for five acres in Lake Elsinore.

<sup>1</sup> The four intersections analyzed by the SCAQMD were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning and LOS F in the evening peak hour.

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The data provided in Table K shows that the on-going operations of the proposed project would not exceed the local NO<sub>x</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub> thresholds of significance discussed above in Section 6.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to onsite emissions and no mitigation would be required.

#### *Operations-Related Toxic Air Contaminant Impacts*

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips generated by the proposed residential project, a less than significant toxic air contaminant impact would occur during the on-going operations of the proposed project and no mitigation would be required.

#### **Level of Significance**

Less than significant impact.

### ***7.4 Cumulative Net Increase in Non-Attainment Pollution***

The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by nature. The project area is out of attainment with Federal and/or State standards for ozone and PM<sub>10</sub>, and PM<sub>2.5</sub>. In accordance with CEQA Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project specific thresholds for construction and operations;
- Project consistency with existing air quality plans; and
- Assessment of the cumulative health effects of the pollutants.

#### **Consistency with Project Specific Thresholds**

##### Construction-Related Impacts

The project site is located in the South Coast Air Basin, which is currently designated by the EPA as a non-attainment area for ozone and PM<sub>2.5</sub>. The regional ozone and PM<sub>2.5</sub> emissions associated with the proposed project have been calculated above in Section 7.3. The above analysis found that development of the proposed project would result in less than significant regional emissions of the precursors to ozone and PM<sub>2.5</sub> during construction of the proposed project. Therefore, a less than significant cumulative impact would occur from construction of the proposed project.

##### Operational-Related Impacts

The greatest cumulative operational impact on the air quality to the Air Basin will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria

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or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. The data provided in Section 7.3 above shows that for the on-going operations activities for the proposed project, the VOC, NOx, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions would not exceed the SCAQMD thresholds of significance discussed above in Section 5.0. With respect to long-term emissions, this project would create a less than significant cumulative impact.

### **Consistency with Air Quality Plans**

As detailed above in Section 7.2, the project site is currently designated as Residential Mixed Use in the General Plan and is zoned Residential/Mixed-Use (RMU). The proposed project would consist of the development of 152 apartment units on 8-acres, which would result in a density of 19 dwelling units per acre. The proposed project is not consistent with Municipal Code Section 17.86.040, that limits projects with only residential units in the RMU zone to a maximum density of 18 dwelling units per acre. However, Riverside Transit Bus Route 8 has a bus stop that is located approximately 210 feet northeast of the project site and Municipal Code Section 17.86.060(B)(7) allows projects that are located within 1,500 feet of the project site a density bonus up to 35 dwelling units per acre. As such, the proposed project would be within the allowable density that is allowed for RMU and would not result in an inconsistency with the current land use designation. As such, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMPs for the Air Basin.

### **Cumulative Health Impacts**

The Air Basin is designated as nonattainment for ozone, NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, 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 (elderly, children, and the sick). Therefore, when the concentrations of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects. The regional analysis detailed above in Section 6.3 found that the proposed project would not exceed the SCAQMD regional significance thresholds for VOC, NOx (ozone precursors), PM<sub>10</sub> and PM<sub>2.5</sub>. As such, the proposed project would result in a less than significant cumulative health impact.

### **Level of Significance**

Less than significant impact.

## ***7.5 Sensitive Receptors***

The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of emissions produced in the nearby vicinity of the proposed project, which may expose sensitive receptors to substantial concentrations have been calculated above in Section 7.3 for both construction and operations, which are discussed separately below.

### **Construction-Related Sensitive Receptor Impacts**

The nearest offsite sensitive receptors to the proposed project consist of the structures at Lakeside High School as near as 150 feet southwest of the project site, RV campsites as near as 230 feet southeast of the project site, and single-family homes as near as 350 feet northwest of the project site. The analysis in Section 7.3 above found that construction of the proposed project would not exceed the local NOx, CO, PM<sub>10</sub> and PM<sub>2.5</sub> thresholds of significance discussed above in Section 6.2. Therefore, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.



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## **Operations-Related Sensitive Receptor Impacts**

The on-going operations of the proposed project may expose sensitive receptors to substantial pollutant concentrations of local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from onsite operations. The following analyzes the vehicular CO emissions. Local criteria pollutant impacts from onsite operations, and toxic air contaminant impacts from onsite diesel trucks.

### Local CO Hotspot Impacts from Project-Generated Vehicle Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential impacts to sensitive receptors. The analysis provided above in Section 7.3 shows that no local CO Hotspots are anticipated to be created at any nearby intersections from the vehicle traffic generated by the proposed project. Therefore, operation of the proposed project would result in a less than significant exposure of offsite sensitive receptors to substantial pollutant concentrations.

### Local Criteria Pollutant Impacts from Onsite Operations

The local air quality impacts from the operation of the proposed project would occur from onsite sources such as architectural coatings, landscaping equipment, and onsite usage of natural gas appliances. The analysis provided above in Section 7.3 found that the operation of the proposed project would not exceed the local NO<sub>x</sub>, CO, PM<sub>10</sub> and PM<sub>2.5</sub> thresholds of significance discussed above in Section 6.2. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions and no mitigation would be required.

### Operations-Related Toxic Air Contaminant Impacts

Particulate matter (PM) from diesel exhaust is the predominant TAC in most areas and according to *The California Almanac of Emissions and Air Quality 2013 Edition*, prepared by CARB, about 80 percent of the outdoor TAC cancer risk is from diesel exhaust. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to the nominal number of diesel truck trips generated by the proposed residential project, a less than significant TAC impact would occur during the on-going operations of the proposed project and no mitigation would be required.

## **Level of Significance**

Less than significant impact.

## **7.6 Objectionable Odors**

The proposed project would not create objectionable odors affecting a substantial number of people. Potential odor impacts have been analyzed separately for construction and operations below.

Individual responses to odors are highly variable and can result in a variety of effects. Generally, the impact of an odor results from a variety of factors such as frequency, duration, offensiveness, location, and sensory perception. The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The intensity refers to an individual's or group's perception of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity in which he or she is engaged; and the sensitivity of the impacted receptor.

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Sensory perception has four major components: detectability, intensity, character, and hedonic tone. The detection (or threshold) of an odor is based on a panel of responses to the odor. There are two types of thresholds: the odor detection threshold and the recognition threshold. The detection threshold is the lowest concentration of an odor that will elicit a response in a percentage of the people that live and work in the immediate vicinity of the project site and is typically presented as the mean (or 50 percent of the population). The recognition threshold is the minimum concentration that is recognized as having a characteristic odor quality, this is typically represented by recognition by 50 percent of the population. The intensity refers to the perceived strength of the odor. The odor character is what the substance smells like. The hedonic tone is a judgment of the pleasantness or unpleasantness of the odor. The hedonic tone varies in subjective experience, frequency, odor character, odor intensity, and duration.

### **Construction-Related Odor Impacts**

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement, paints and solvents and from emissions from diesel equipment. The objectionable odors that may be produced during the construction process would be temporary and would not likely be noticeable for extended periods of time beyond the project site's boundaries. Due to the transitory nature of construction odors, a less than significant odor impact would occur and no mitigation would be required.

### **Potential Operations-Related Odor Impacts**

Potential sources that may emit odors during the on-going operations of the proposed project would primarily occur from odor emissions from the trash storage areas. Pursuant to City regulations, permanent trash enclosures that protect trash bins from rain as well as limit air circulation would be required for the trash storage areas. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402, no significant impact related to odors would occur during the on-going operations of the proposed project. Therefore, a less than significant odor impact would occur and no mitigation would be required.

### **Level of Significance**

Less than significant impact.

## ***7.7 Generation of Greenhouse Gas Emissions***

The proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The proposed project would result in the development of 152 residential apartment units. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment.

The City of Lake Elsinore adopted the *City of Lake Elsinore Climate Action Plan*, on December 13, 2011 that requires a 22.3 percent reduction in GHG emissions between years 2007 and 2020. In order to determine if the proposed project would comply with the Climate Action Plan's Standards, the GHG emissions from the proposed project were analyzed for both year 2010, (nearest year available in CalEEMod to 2007) and year 2020. Using year 2010 versus 2007 provides a worst-case analysis, since the State has enacted several laws that took effect between 2007 and 2010 that reduce GHG emissions and using the latter date means that less GHG reductions can be accounted for from the State measures. A summary of the results is shown below in **Error! Reference source not found.** and the CalEEMod model run for the year 2010 is provided in Appendix B and the year 2020 is provided in Appendix C.

**Table L – Project Related Greenhouse Gas Annual Emissions**

Category	Greenhouse Gas Emissions (Metric Tons per Year)					
	Bio-CO <sub>2</sub>	NonBio-CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2010 Emissions</b>						
Area Sources <sup>1</sup>	0.00	2.57	2.57	0.00	0.00	2.64
Energy Usage <sup>2</sup>	0.00	289.94	289.94	0.01	0.00	291.31
Mobile Sources <sup>3</sup>	0.00	1,634.27	1,634.27	0.09	0.00	1,636.14
Solid Waste <sup>4</sup>	14.19	0.00	14.19	0.84	0.00	31.81
Water and Wastewater <sup>5</sup>	3.14	56.75	59.89	0.33	0.01	69.25
Construction <sup>6</sup>	0.00	17.13	17.13	0.00	0.00	17.20
<b>Total 2010 Emissions</b>	<b>17.33</b>	<b>2,000.66</b>	<b>2,017.99</b>	<b>1.27</b>	<b>0.01</b>	<b>2,048.35</b>
<b>Year 2020 Emissions</b>						
Area Sources	0.00	2.57	2.57	0.00	0.00	2.62
Energy Usage	0.00	260.26	260.26	0.01	0.00	261.47
Mobile Sources	0.00	1,148.04	1,148.04	0.03	0.00	1,148.76
Solid Waste	7.10	0.00	7.10	0.42	0.00	15.90
Water and Wastewater	2.51	48.16	50.67	0.26	0.01	58.17
Construction	0.00	17.13	17.13	0.00	0.00	17.20
Vegetation <sup>7</sup>						-2.12
<b>Total 2020 Emissions</b>	<b>9.61</b>	<b>1,476.16</b>	<b>1,485.77</b>	<b>0.72</b>	<b>0.01</b>	<b>1,501.99</b>
<b>Percent Reduction between 2010 and 2020</b>						<b>26.7%</b>
<b>City of Lake Elsinore Reduction Threshold</b>						<b>22.3%</b>
<b>SCAQMD Draft Threshold of Significance for Residential Uses</b>						<b>3,500</b>

Notes:

<sup>1</sup> Area sources consist of GHG emissions from hearths, consumer products, architectural coatings, and landscaping equipment.

<sup>2</sup> Energy usage consist of GHG emissions from electricity and natural gas usage (not including hearths).

<sup>3</sup> Mobile sources consist of GHG emissions from vehicles.

<sup>4</sup> Waste includes the CO<sub>2</sub> and CH<sub>4</sub> emissions created from the solid waste placed in landfills.

<sup>5</sup> Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

<sup>6</sup> Construction emissions amortized over 30 years.

<sup>7</sup> Vegetation sequestration amortized over 30 years.

Source: CalEEMod Version 2013.2.2.

The data provided in Table L above shows that the proposed project would create 2,048.35 MTCO<sub>2</sub>e per year based on the default year 2010 GHG emissions rates and in year 2020 would produce 1,501.99 MTCO<sub>2</sub>e per year that is based on approved Statewide GHG reduction regulations that would be fully implemented by year 2020 as well as from GHG emission reduction design features that have been incorporated into the proposed site plan. Table L shows that through implementation of EO S-1-07, that establishes performance standards for the carbon intensity of transportation fuels, AB 149, which limits GHG emissions from new vehicles sold in California, implementation of the CCR Title 24, Part 6 2013 Building Energy Efficiency Standards and CCR Title 24 Part 11 2013 CalGreen Standards that improves the energy efficiency of the proposed project, and project design features such as providing sidewalks, locating the project site near a transit station, and meeting the Climate Action Plan's minimum tree planting requirements, the proposed project's GHG emissions would be reduced by 26.7 percent and would meet the City of Lake Elsinore's minimum 22.3 percent GHG reduction standard. In addition, the proposed project would be below the SCAQMD draft residential significance threshold of 3,500 MTCO<sub>2</sub>e per year for both the year 2010 and year 2020 GHG emissions. Therefore, a less than significant generation of GHG emissions would occur from development and operation of the proposed project.

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## **Level of Significance**

Less than significant impact.

### ***7.8 Greenhouse Gas Plan Consistency***

The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. The applicable plan for the proposed project is the *City of Lake Elsinore Climate Action Plan*, adopted December 13, 2011. The Climate Action Plan provides specific measures to be implemented in new developments to reduce GHG emissions as well as a GHG emissions reduction target based on a community-wide emissions reduction to 6.6 MTCO<sub>2</sub>e per service population per year by 2020. This is a 22.3 percent reduction from the 2008 rate of 8.5 MTCO<sub>2</sub>e per service population. These efficiency-based targets were derived by dividing the statewide AB 32 targeted emissions levels for 2020 and statewide Executive Order S-3-05 targeted emissions level for 2030 by the 2020 and 2030 statewide service population respectively. These targets represent the maximum quantity of emissions each resident and employee in the State of California could emit in 2020 and 2030 based on emissions levels necessary to achieve the statewide AB 32 and Executive Order S-3-05 GHG emissions reduction goals. Therefore, the proposed project would be considered to be inconsistent with the Climate Action Plan if the proposed project did not implement all applicable measures identified in the Climate Action Plan and if the proposed project's GHG emissions are not 22.3 percent less than GHG emissions from business-as-usual conditions for a similar size project in year 2008.

The Climate Action Plan's applicable measures to the proposed project have been detailed above in Section 3.1 and the method of adherence to each measure has been detailed above in Section 5.2. Section 5.2 found that through implementation of required statewide regulations and implementation of Project Design Features 1 and 2 that are detailed above in Section 1.6, that the proposed project would conform to the applicable measures in the Climate Action Plan. In addition, Section 7.7 above found through implementation of the statewide regulations and Project Design Features 1 and 2 that the proposed project's GHG emissions would be reduced by 26.7 percent and would exceed the 22.3 percent reduction in GHG emissions required by the Climate Action Plan. Finally, the GHG emissions calculations provided above in Section 7.7 also shows that both the year 2010 business-as-usual GHG emissions and the year 2020 GHG emissions would be below the SCAQMD draft residential significance threshold of 3,500 MTCO<sub>2</sub>e per year. Therefore, the proposed 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.

## **Level of Significance**

Less than significant impact.

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## **APPENDIX A**

### CalEEMod Model Daily Printouts

## Lakepointe Apartments

### Riverside-South Coast County, Summer

#### 1.0 Project Characteristics

##### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	349.00	Space	2.00	5,000.00	0
Apartments Low Rise	152.00	Dwelling Unit	6.00	152,000.00	435

##### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2017

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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##### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 152 units Apartment Low Rise on 6 acres and 349 space Parking Lot on 2 acres and 5,000 sq ft of parking lot paint.

Construction Phase - Project schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for water truck emissions

Vehicle Trips - Weekday Trip Rate set to 6.65 daily trips per TIA.

Woodstoves - No fireplaces would be installed in the apartments

Construction Off-road Equipment Mitigation - Mitigation of Water Exposed Area 3x per day was selected to account for SCAQMD Rule 403 minimum requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	45.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	139,600.00	5,000.00
tblLandUse	LotAcreage	3.14	2.00
tblLandUse	LotAcreage	9.50	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

## 2.0 Emissions Summary



## 2.2 Overall Operational

### Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
Energy	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Mobile	3.9008	12.3256	43.6446	0.1162	7.8805	0.1820	8.0626	2.1031	0.1675	2.2707						9,863.9656
<b>Total</b>	<b>7.7956</b>	<b>13.0002</b>	<b>56.5715</b>	<b>0.1202</b>	<b>7.8805</b>	<b>0.2935</b>	<b>8.1741</b>	<b>2.1031</b>	<b>0.2790</b>	<b>2.3822</b>						<b>10,563.4820</b>

### Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
Energy	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Mobile	3.9008	12.3256	43.6446	0.1162	7.8805	0.1820	8.0626	2.1031	0.1675	2.2707						9,863.9656
<b>Total</b>	<b>7.7956</b>	<b>13.0002</b>	<b>56.5715</b>	<b>0.1202</b>	<b>7.8805</b>	<b>0.2935</b>	<b>8.1741</b>	<b>2.1031</b>	<b>0.2790</b>	<b>2.3822</b>						<b>10,563.4820</b>

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

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/29/2016	7/12/2016	5	10	
2	Grading	Grading	7/13/2016	8/9/2016	5	20	
3	Building Construction	Building Construction	8/10/2016	6/27/2017	5	230	
4	Paving	Paving	6/28/2017	7/25/2017	5	20	
5	Architectural Coating	Architectural Coating	7/26/2017	9/26/2017	5	45	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 0**

**Residential Indoor: 307,800; Residential Outdoor: 102,600; Non-Residential Indoor: 225; Non-Residential Outdoor: 75 (Architectural Coating – sqft)**

**OffRoad Equipment**



Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
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
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area  
Clean Paved Roads

### 3.2 Site Preparation - 2016

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036						4,090.754 <sub>4</sub>
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>18.0663</b>	<b>2.9387</b>	<b>21.0049</b>	<b>9.9307</b>	<b>2.7036</b>	<b>12.6343</b>						<b>4,090.754<sub>4</sub></b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.0467	0.5035	0.5272	1.2600e-003	0.0378	9.7700e-003	0.0475	0.0108	8.9900e-003	0.0198						126.7854
Worker	0.0690	0.0814	1.0208	2.4100e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545						199.9056
<b>Total</b>	<b>0.1156</b>	<b>0.5849</b>	<b>1.5480</b>	<b>3.6700e-003</b>	<b>0.2390</b>	<b>0.0110</b>	<b>0.2500</b>	<b>0.0641</b>	<b>0.0102</b>	<b>0.0743</b>						<b>326.6910</b>

**3.2 Site Preparation - 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	..	..	..	..	7.0458	0.0000	7.0458	3.8730	0.0000	3.8730						0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036						4,090.754 4
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>7.0458</b>	<b>2.9387</b>	<b>9.9845</b>	<b>3.8730</b>	<b>2.7036</b>	<b>6.5766</b>						<b>4,090.754 4</b>

**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
Vendor	0.0467	0.5035	0.5272	1.2600e-003	0.0378	9.7700e-003	0.0475	0.0108	8.9900e-003	0.0198						126.7854
Worker	0.0690	0.0814	1.0208	2.4100e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545						199.9056
<b>Total</b>	<b>0.1156</b>	<b>0.5849</b>	<b>1.5480</b>	<b>3.6700e-003</b>	<b>0.2390</b>	<b>0.0110</b>	<b>0.2500</b>	<b>0.0641</b>	<b>0.0102</b>	<b>0.0743</b>						<b>326.6910</b>

### 3.3 Grading - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Fugitive Dust	..	..	..	..	6.5523	0.0000	6.5523	3.3675	0.0000	3.3675						0.0000
Off-Road	..	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225						3,113.3860
<b>Total</b>	<b>3.6669</b>	<b>38.4466</b>	<b>26.0787</b>	<b>0.0298</b>	<b>6.5523</b>	<b>2.1984</b>	<b>8.7507</b>	<b>3.3675</b>	<b>2.0225</b>	<b>5.3900</b>						<b>3,113.3860</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	..	0.0467	0.5035	1.2600e-003	0.0378	9.7700e-003	0.0475	0.0108	8.9900e-003	0.0198						126.7854
Worker	..	0.0575	0.0679	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454						166.5880
<b>Total</b>	<b>0.1041</b>	<b>0.5714</b>	<b>1.3779</b>	<b>3.2700e-003</b>	<b>0.2054</b>	<b>0.0108</b>	<b>0.2162</b>	<b>0.0553</b>	<b>9.9500e-003</b>	<b>0.0652</b>						<b>293.3734</b>

### 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															
Fugitive Dust	..	..	..	..	2.5554	0.0000	2.5554	1.3133	0.0000	1.3133						0.0000
Off-Road	..	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225						3,113.3860
<b>Total</b>	<b>3.6669</b>	<b>38.4466</b>	<b>26.0787</b>	<b>0.0298</b>	<b>2.5554</b>	<b>2.1984</b>	<b>4.7538</b>	<b>1.3133</b>	<b>2.0225</b>	<b>3.3359</b>						<b>3,113.3860</b>

#### 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															
Hauling	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	..	0.0467	0.5035	1.2600e-003	0.0378	9.7700e-003	0.0475	0.0108	8.9900e-003	0.0198						126.7854
Worker	..	0.0575	0.0679	2.0100e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454						166.5880
<b>Total</b>	<b>0.1041</b>	<b>0.5714</b>	<b>1.3779</b>	<b>3.2700e-003</b>	<b>0.2054</b>	<b>0.0108</b>	<b>0.2162</b>	<b>0.0553</b>	<b>9.9500e-003</b>	<b>0.0652</b>						<b>293.3734</b>

**3.4 Building Construction - 2016****Unmitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>						<b>2,683.1890</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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
Vendor	0.1322	1.4266	1.4938	3.5800e-003	0.1070	0.0277	0.1347	0.0306	0.0255	0.0560						359.2254
Worker	0.4292	0.5067	6.3516	0.0150	1.2519	7.8300e-003	1.2597	0.3320	7.1900e-003	0.3392						1,243.8570
<b>Total</b>	<b>0.5614</b>	<b>1.9333</b>	<b>7.8454</b>	<b>0.0186</b>	<b>1.3589</b>	<b>0.0355</b>	<b>1.3944</b>	<b>0.3626</b>	<b>0.0327</b>	<b>0.3952</b>						<b>1,603.0824</b>



### 3.4 Building Construction - 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															
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>						<b>2,683.1890</b>

#### 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															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1322	1.4266	1.4938	3.5800e-003	0.1070	0.0277	0.1347	0.0306	0.0255	0.0560						359.2254
Worker	0.4292	0.5067	6.3516	0.0150	1.2519	7.8300e-003	1.2597	0.3320	7.1900e-003	0.3392						1,243.8570
<b>Total</b>	<b>0.5614</b>	<b>1.9333</b>	<b>7.8454</b>	<b>0.0186</b>	<b>1.3589</b>	<b>0.0355</b>	<b>1.3944</b>	<b>0.3626</b>	<b>0.0327</b>	<b>0.3952</b>						<b>1,603.0824</b>

### 3.4 Building Construction - 2017

#### Unmitigated Construction On-Site

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

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1193	1.2939	1.3943	3.5700e-003	0.1070	0.0248	0.1318	0.0306	0.0228	0.0534						353.1588
Worker	0.3844	0.4547	5.7042	0.0150	1.2519	7.6100e-003	1.2595	0.3320	7.0200e-003	0.3390						1,194.5675
<b>Total</b>	<b>0.5037</b>	<b>1.7486</b>	<b>7.0985</b>	<b>0.0186</b>	<b>1.3589</b>	<b>0.0324</b>	<b>1.3913</b>	<b>0.3626</b>	<b>0.0298</b>	<b>0.3924</b>						<b>1,547.7263</b>

### 3.4 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															
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						2,653.4490
<b>Total</b>	<b>3.1024</b>	<b>26.4057</b>	<b>18.1291</b>	<b>0.0268</b>		<b>1.7812</b>	<b>1.7812</b>		<b>1.6730</b>	<b>1.6730</b>						<b>2,653.4490</b>

#### 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															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1193	1.2939	1.3943	3.5700e-003	0.1070	0.0248	0.1318	0.0306	0.0228	0.0534						353.1588
Worker	0.3844	0.4547	5.7042	0.0150	1.2519	7.6100e-003	1.2595	0.3320	7.0200e-003	0.3390						1,194.5675
<b>Total</b>	<b>0.5037</b>	<b>1.7486</b>	<b>7.0985</b>	<b>0.0186</b>	<b>1.3589</b>	<b>0.0324</b>	<b>1.3913</b>	<b>0.3626</b>	<b>0.0298</b>	<b>0.3924</b>						<b>1,547.7263</b>

**3.5 Paving - 2017****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						2,295.7360
Paving	0.2620					0.0000	0.0000		0.0000	0.0000						0.0000
<b>Total</b>	<b>2.1694</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>						<b>2,295.7360</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	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
Worker	0.0515	0.0609	0.7640	2.0100e-003	0.1677	1.0200e-003	0.1687	0.0445	9.4000e-004	0.0454						159.9867
<b>Total</b>	<b>0.0515</b>	<b>0.0609</b>	<b>0.7640</b>	<b>2.0100e-003</b>	<b>0.1677</b>	<b>1.0200e-003</b>	<b>0.1687</b>	<b>0.0445</b>	<b>9.4000e-004</b>	<b>0.0454</b>						<b>159.9867</b>

**3.5 Paving - 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															
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						2,295.7360
Paving	0.2620					0.0000	0.0000		0.0000	0.0000						0.0000
<b>Total</b>	<b>2.1694</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>						<b>2,295.7360</b>

**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															
Hauling	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
Worker	0.0515	0.0609	0.7640	2.0100e-003	0.1677	1.0200e-003	0.1687	0.0445	9.4000e-004	0.0454						159.9867
<b>Total</b>	<b>0.0515</b>	<b>0.0609</b>	<b>0.7640</b>	<b>2.0100e-003</b>	<b>0.1677</b>	<b>1.0200e-003</b>	<b>0.1687</b>	<b>0.0445</b>	<b>9.4000e-004</b>	<b>0.0454</b>						<b>159.9867</b>

### 3.6 Architectural Coating - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Archit. Coating	26.4968					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						282.0721
<b>Total</b>	<b>26.8291</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>						<b>282.0721</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	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
Worker	0.0755	0.0893	1.1205	2.9500e-003	0.2459	1.4900e-003	0.2474	0.0652	1.3800e-003	0.0666						234.6472
<b>Total</b>	<b>0.0755</b>	<b>0.0893</b>	<b>1.1205</b>	<b>2.9500e-003</b>	<b>0.2459</b>	<b>1.4900e-003</b>	<b>0.2474</b>	<b>0.0652</b>	<b>1.3800e-003</b>	<b>0.0666</b>						<b>234.6472</b>



### 3.6 Architectural Coating - 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															
Archit. Coating	26.4968					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						282.0721
<b>Total</b>	<b>26.8291</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>						<b>282.0721</b>

#### 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															
Hauling	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
Worker	0.0755	0.0893	1.1205	2.9500e-003	0.2459	1.4900e-003	0.2474	0.0652	1.3800e-003	0.0666						234.6472
<b>Total</b>	<b>0.0755</b>	<b>0.0893</b>	<b>1.1205</b>	<b>2.9500e-003</b>	<b>0.2459</b>	<b>1.4900e-003</b>	<b>0.2474</b>	<b>0.0652</b>	<b>1.3800e-003</b>	<b>0.0666</b>						<b>234.6472</b>

#### 4.0 Operational Detail - Mobile

#### 4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	3.9008	12.3256	43.6446	0.1162	7.8805	0.1820	8.0626	2.1031	0.1675	2.2707						9,863,965 6
Unmitigated	3.9008	12.3256	43.6446	0.1162	7.8805	0.1820	8.0626	2.1031	0.1675	2.2707						9,863,965 6

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate				Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday			
Apartment Low Rise	1,010.80	1,088.32	922.64		3,448,863	3,448,863
Parking Lot	0.00	0.00	0.00			
Total	1,010.80	1,088.32	922.64		3,448,863	3,448,863

#### 4.3 Trip Type Information

Land Use	Miles					Trip %					Trip Purpose %				
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by		Primary	Diverted	Pass-by		
Apartment Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3						
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0						

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.460962	0.069557	0.176974	0.170659	0.045477	0.007383	0.012841	0.043558	0.000954	0.001056	0.006454	0.000884	0.003242

**5.0 Emissions Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
NaturalGas Unmitigated	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	5714.45	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797

## 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															
Apartment Low Rise	5.71445	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
<b>Total</b>		<b>0.0616</b>	<b>0.5266</b>	<b>0.2241</b>	<b>3.3600e-003</b>		<b>0.0426</b>	<b>0.0426</b>		<b>0.0426</b>	<b>0.0426</b>						<b>676.3797</b>

## 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															
Mitigated	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
Unmitigated	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367

## 6.2 Area by SubCategory

### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3267					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	3.1086					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	0.3979	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
<b>Total</b>	<b>3.8332</b>	<b>0.1480</b>	<b>12.7028</b>	<b>6.6000e-004</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0689</b>	<b>0.0689</b>						<b>23.1367</b>

## 6.2 Area by SubCategory

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3267					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	3.1086					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	0.3979	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
<b>Total</b>	<b>3.8332</b>	<b>0.1480</b>	<b>12.7028</b>	<b>6.6000e-004</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0689</b>	<b>0.0689</b>						<b>23.1367</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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



## Lakepointe Apartments

### Riverside-South Coast County, Winter

#### 1.0 Project Characteristics

##### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	349.00	Space	2.00	5,000.00	0
Apartments Low Rise	152.00	Dwelling Unit	6.00	152,000.00	435

##### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2017

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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##### 1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 152 units Apartment Low Rise on 6 acres and 349 space Parking Lot on 2 acres and 5,000 sq ft of parking lot paint.

Construction Phase - Project schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for water truck emissions

Vehicle Trips - Weekday Trip Rate set to 6.65 daily trips per TIA.

Woodstoves - No fireplaces would be installed in the apartments

Construction Off-road Equipment Mitigation - Mitigation of Water Exposed Area 3x per day was selected to account for SCAQMD Rule 403 minimum requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	45.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	139,600.00	5,000.00
tblLandUse	LotAcreage	3.14	2.00
tblLandUse	LotAcreage	9.50	6.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

## 2.0 Emissions Summary



## 2.2 Overall Operational

### Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
Energy	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Mobile	3.8043	12.8469	40.7121	0.1084	7.8805	0.1827	8.0632	2.1031	0.1682	2.2713						9,235.0310
<b>Total</b>	<b>7.6991</b>	<b>13.5215</b>	<b>53.6390</b>	<b>0.1124</b>	<b>7.8805</b>	<b>0.2942</b>	<b>8.1747</b>	<b>2.1031</b>	<b>0.2796</b>	<b>2.3828</b>						<b>9,934.5474</b>

### Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
lb/day																
Area	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
Energy	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Mobile	3.8043	12.8469	40.7121	0.1084	7.8805	0.1827	8.0632	2.1031	0.1682	2.2713						9,235.0310
<b>Total</b>	<b>7.6991</b>	<b>13.5215</b>	<b>53.6390</b>	<b>0.1124</b>	<b>7.8805</b>	<b>0.2942</b>	<b>8.1747</b>	<b>2.1031</b>	<b>0.2796</b>	<b>2.3828</b>						<b>9,934.5474</b>

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

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/29/2016	7/12/2016	5	10	
2	Grading	Grading	7/13/2016	8/9/2016	5	20	
3	Building Construction	Building Construction	8/10/2016	6/27/2017	5	230	
4	Paving	Paving	6/28/2017	7/25/2017	5	20	
5	Architectural Coating	Architectural Coating	7/26/2017	9/26/2017	5	45	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 0**

**Residential Indoor: 307,800; Residential Outdoor: 102,600; Non-Residential Indoor: 225; Non-Residential Outdoor: 75 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
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
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction



Water Exposed Area  
Clean Paved Roads

### 3.2 Site Preparation - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307						0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036						4,090.754 <sub>4</sub>
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>18.0663</b>	<b>2.9387</b>	<b>21.0049</b>	<b>9.9307</b>	<b>2.7036</b>	<b>12.6343</b>						<b>4,090.754<sub>4</sub></b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0497	0.5161	0.5995	1.2500e-003	0.0378	9.8600e-003	0.0476	0.0108	9.0700e-003	0.0199						125.6889
Worker	0.0658	0.0868	0.8796	2.2000e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545						182.6986
<b>Total</b>	<b>0.1155</b>	<b>0.6029</b>	<b>1.4790</b>	<b>3.4500e-003</b>	<b>0.2390</b>	<b>0.0111</b>	<b>0.2501</b>	<b>0.0641</b>	<b>0.0102</b>	<b>0.0744</b>						<b>308.3875</b>

### 3.2 Site Preparation - 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															
Fugitive Dust	..	..	..	..	7.0458	0.0000	7.0458	3.8730	0.0000	3.8730						0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036						4,090.754 4
<b>Total</b>	<b>5.0771</b>	<b>54.6323</b>	<b>41.1053</b>	<b>0.0391</b>	<b>7.0458</b>	<b>2.9387</b>	<b>9.9845</b>	<b>3.8730</b>	<b>2.7036</b>	<b>6.5766</b>						<b>4,090.754 4</b>

#### 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															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.0497	0.5161	0.5995	1.2500e-003	0.0378	9.8600e-003	0.0476	0.0108	9.0700e-003	0.0199						125.6889
Worker	0.0658	0.0868	0.8796	2.2000e-003	0.2012	1.2600e-003	0.2025	0.0534	1.1600e-003	0.0545						182.6986
<b>Total</b>	<b>0.1155</b>	<b>0.6029</b>	<b>1.4790</b>	<b>3.4500e-003</b>	<b>0.2390</b>	<b>0.0111</b>	<b>0.2501</b>	<b>0.0641</b>	<b>0.0102</b>	<b>0.0744</b>						<b>308.3875</b>

### 3.3 Grading - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Fugitive Dust	..	..	..	..	6.5523	0.0000	6.5523	3.3675	0.0000	3.3675						0.0000
Off-Road	..	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225						3,113.3860
<b>Total</b>	<b>3.6669</b>	<b>38.4466</b>	<b>26.0787</b>	<b>0.0298</b>	<b>6.5523</b>	<b>2.1984</b>	<b>8.7507</b>	<b>3.3675</b>	<b>2.0225</b>	<b>5.3900</b>						<b>3,113.3860</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	..	0.0497	0.5161	1.2500e-003	0.0378	9.8600e-003	0.0476	0.0108	9.0700e-003	0.0199						125.6889
Worker	..	0.0548	0.0723	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454						152.2488
<b>Total</b>	<b>0.1046</b>	<b>0.5884</b>	<b>1.3324</b>	<b>3.0900e-003</b>	<b>0.2054</b>	<b>0.0109</b>	<b>0.2163</b>	<b>0.0553</b>	<b>0.0100</b>	<b>0.0653</b>						<b>277.9377</b>

### 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	..	..	..	..	2.5554	0.0000	2.5554	1.3133	0.0000	1.3133						0.0000
Off-Road	..	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225						3,113.3860
<b>Total</b>	<b>3.6669</b>	<b>38.4466</b>	<b>26.0787</b>	<b>0.0298</b>	<b>2.5554</b>	<b>2.1984</b>	<b>4.7538</b>	<b>1.3133</b>	<b>2.0225</b>	<b>3.3359</b>						<b>3,113.3860</b>

#### 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
Vendor	..	0.0497	0.5161	1.2500e-003	0.0378	9.8600e-003	0.0476	0.0108	9.0700e-003	0.0199						125.6889
Worker	..	0.0548	0.0723	1.8400e-003	0.1677	1.0500e-003	0.1687	0.0445	9.6000e-004	0.0454						152.2488
<b>Total</b>	<b>0.1046</b>	<b>0.5884</b>	<b>1.3324</b>	<b>3.0900e-003</b>	<b>0.2054</b>	<b>0.0109</b>	<b>0.2163</b>	<b>0.0553</b>	<b>0.0100</b>	<b>0.0653</b>						<b>277.9377</b>

### 3.4 Building Construction - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>						<b>2,683.1890</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1409	1.4624	1.6985	3.5500e-003	0.1070	0.0279	0.1349	0.0306	0.0257	0.0562						356.1186
Worker	0.4094	0.5398	5.4729	0.0137	1.2519	7.8300e-003	1.2597	0.3320	7.1900e-003	0.3392						1,136.7910
<b>Total</b>	<b>0.5503</b>	<b>2.0022</b>	<b>7.1713</b>	<b>0.0173</b>	<b>1.3589</b>	<b>0.0358</b>	<b>1.3946</b>	<b>0.3626</b>	<b>0.0329</b>	<b>0.3954</b>						<b>1,492.9095</b>

### 3.4 Building Construction - 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															
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485						2,683.1890
<b>Total</b>	<b>3.4062</b>	<b>28.5063</b>	<b>18.5066</b>	<b>0.0268</b>		<b>1.9674</b>	<b>1.9674</b>		<b>1.8485</b>	<b>1.8485</b>						<b>2,683.1890</b>

#### 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															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1409	1.4624	1.6985	3.5500e-003	0.1070	0.0279	0.1349	0.0306	0.0257	0.0562						356.1186
Worker	0.4094	0.5398	5.4729	0.0137	1.2519	7.8300e-003	1.2597	0.3320	7.1900e-003	0.3392						1,136.7910
<b>Total</b>	<b>0.5503</b>	<b>2.0022</b>	<b>7.1713</b>	<b>0.0173</b>	<b>1.3589</b>	<b>0.0358</b>	<b>1.3946</b>	<b>0.3626</b>	<b>0.0329</b>	<b>0.3954</b>						<b>1,492.9095</b>

**3.4 Building Construction - 2017****Unmitigated Construction On-Site**

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

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1270	1.3255	1.6043	3.5400e-003	0.1070	0.0250	0.1320	0.0306	0.0230	0.0536						350.0949
Worker	0.3657	0.4839	4.9007	0.0137	1.2519	7.6100e-003	1.2595	0.3320	7.0200e-003	0.3390						1,091.6113
<b>Total</b>	<b>0.4927</b>	<b>1.8094</b>	<b>6.5050</b>	<b>0.0173</b>	<b>1.3589</b>	<b>0.0326</b>	<b>1.3915</b>	<b>0.3626</b>	<b>0.0300</b>	<b>0.3926</b>						<b>1,441.7062</b>

### 3.4 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															
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730						2,653.4490
<b>Total</b>	<b>3.1024</b>	<b>26.4057</b>	<b>18.1291</b>	<b>0.0268</b>		<b>1.7812</b>	<b>1.7812</b>		<b>1.6730</b>	<b>1.6730</b>						<b>2,653.4490</b>

#### 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															
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						0.0000
Vendor	0.1270	1.3255	1.6043	3.5400e-003	0.1070	0.0250	0.1320	0.0306	0.0230	0.0536						350.0949
Worker	0.3657	0.4839	4.9007	0.0137	1.2519	7.6100e-003	1.2595	0.3320	7.0200e-003	0.3390						1,091.6113
<b>Total</b>	<b>0.4927</b>	<b>1.8094</b>	<b>6.5050</b>	<b>0.0173</b>	<b>1.3589</b>	<b>0.0326</b>	<b>1.3915</b>	<b>0.3626</b>	<b>0.0300</b>	<b>0.3926</b>						<b>1,441.7062</b>



**3.5 Paving - 2017****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						2,295.7360
Paving	0.2620					0.0000	0.0000		0.0000	0.0000						0.0000
<b>Total</b>	<b>2.1694</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>						<b>2,295.7360</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	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
Worker	0.0490	0.0648	0.6563	1.8400e-003	0.1677	1.0200e-003	0.1687	0.0445	9.4000e-004	0.0454						146.1979
<b>Total</b>	<b>0.0490</b>	<b>0.0648</b>	<b>0.6563</b>	<b>1.8400e-003</b>	<b>0.1677</b>	<b>1.0200e-003</b>	<b>0.1687</b>	<b>0.0445</b>	<b>9.4000e-004</b>	<b>0.0454</b>						<b>146.1979</b>

**3.5 Paving - 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															
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473						2,295.7360
Paving	0.2620					0.0000	0.0000		0.0000	0.0000						0.0000
<b>Total</b>	<b>2.1694</b>	<b>20.2964</b>	<b>14.7270</b>	<b>0.0223</b>		<b>1.1384</b>	<b>1.1384</b>		<b>1.0473</b>	<b>1.0473</b>						<b>2,295.7360</b>

**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															
Hauling	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
Worker	0.0490	0.0648	0.6563	1.8400e-003	0.1677	1.0200e-003	0.1687	0.0445	9.4000e-004	0.0454						146.1979
<b>Total</b>	<b>0.0490</b>	<b>0.0648</b>	<b>0.6563</b>	<b>1.8400e-003</b>	<b>0.1677</b>	<b>1.0200e-003</b>	<b>0.1687</b>	<b>0.0445</b>	<b>9.4000e-004</b>	<b>0.0454</b>						<b>146.1979</b>

### 3.6 Architectural Coating - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Archit. Coating	26.4968					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						282.0721
<b>Total</b>	<b>26.8291</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>						<b>282.0721</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day															
Hauling	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
Worker	0.0718	0.0951	0.9626	2.6900e-003	0.2459	1.4900e-003	0.2474	0.0652	1.3800e-003	0.0666						214.4236
<b>Total</b>	<b>0.0718</b>	<b>0.0951</b>	<b>0.9626</b>	<b>2.6900e-003</b>	<b>0.2459</b>	<b>1.4900e-003</b>	<b>0.2474</b>	<b>0.0652</b>	<b>1.3800e-003</b>	<b>0.0666</b>						<b>214.4236</b>

### 3.6 Architectural Coating - 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															
Archit. Coating	26.4968					0.0000	0.0000		0.0000	0.0000						0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733						282.0721
<b>Total</b>	<b>26.8291</b>	<b>2.1850</b>	<b>1.8681</b>	<b>2.9700e-003</b>		<b>0.1733</b>	<b>0.1733</b>		<b>0.1733</b>	<b>0.1733</b>						<b>282.0721</b>

#### 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															
Hauling	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
Worker	0.0718	0.0951	0.9626	2.6900e-003	0.2459	1.4900e-003	0.2474	0.0652	1.3800e-003	0.0666						214.4236
<b>Total</b>	<b>0.0718</b>	<b>0.0951</b>	<b>0.9626</b>	<b>2.6900e-003</b>	<b>0.2459</b>	<b>1.4900e-003</b>	<b>0.2474</b>	<b>0.0652</b>	<b>1.3800e-003</b>	<b>0.0666</b>						<b>214.4236</b>

#### 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	3.8043	12.8469	40.7121	0.1084	7.8805	0.1827	8.0632	2.1031	0.1682	2.2713						9,235,031 0
Unmitigated	3.8043	12.8469	40.7121	0.1084	7.8805	0.1827	8.0632	2.1031	0.1682	2.2713						9,235,031 0

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate				Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday			
Apartment Low Rise	1,010.80	1,088.32	922.64		3,448,863	3,448,863
Parking Lot	0.00	0.00	0.00			
Total	1,010.80	1,088.32	922.64		3,448,863	3,448,863

#### 4.3 Trip Type Information

Land Use	Miles						Trip %				Trip Purpose %			
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	H-S or C-C	H-W or C-W	H-O or C-NW	Primary	Diverted	Pass-by		
Apartment Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	0	0	11	3			
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0	0	0			

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.460962	0.069557	0.176974	0.170659	0.045477	0.007383	0.012841	0.043558	0.000954	0.001056	0.006454	0.000884	0.003242

**5.0 Emissions Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	ROG	NOx	CO	SO <sub>2</sub>	Fugitive PM <sub>10</sub>	Exhaust PM <sub>10</sub>	PM <sub>10</sub> Total	Fugitive PM <sub>2.5</sub>	Exhaust PM <sub>2.5</sub>	PM <sub>2.5</sub> Total	Bio- CO <sub>2</sub>	NBio- CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
	lb/day										lb/day					
NaturalGas Mitigated	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
NaturalGas Unmitigated	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO <sub>2</sub>	Fugitive PM <sub>10</sub>	Exhaust PM <sub>10</sub>	PM <sub>10</sub> Total	Fugitive PM <sub>2.5</sub>	Exhaust PM <sub>2.5</sub>	PM <sub>2.5</sub> Total	Bio- CO <sub>2</sub>	NBio- CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	5714.45	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Total		0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797

## 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															
Apartment Low Rise	5.71445	0.0616	0.5266	0.2241	3.3600e-003		0.0426	0.0426		0.0426	0.0426						676.3797
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
<b>Total</b>		<b>0.0616</b>	<b>0.5266</b>	<b>0.2241</b>	<b>3.3600e-003</b>		<b>0.0426</b>	<b>0.0426</b>		<b>0.0426</b>	<b>0.0426</b>						<b>676.3797</b>

## 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															
Mitigated	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
Unmitigated	3.8332	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367

## 6.2 Area by SubCategory

### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3267					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	3.1086					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	0.3979	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
<b>Total</b>	<b>3.8332</b>	<b>0.1480</b>	<b>12.7028</b>	<b>6.6000e-004</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0689</b>	<b>0.0689</b>						<b>23.1367</b>



## 6.2 Area by SubCategory

### Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3267					0.0000	0.0000		0.0000	0.0000						0.0000
Consumer Products	3.1086					0.0000	0.0000		0.0000	0.0000						0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						0.0000
Landscaping	0.3979	0.1480	12.7028	6.6000e-004		0.0689	0.0689		0.0689	0.0689						23.1367
<b>Total</b>	<b>3.8332</b>	<b>0.1480</b>	<b>12.7028</b>	<b>6.6000e-004</b>		<b>0.0689</b>	<b>0.0689</b>		<b>0.0689</b>	<b>0.0689</b>						<b>23.1367</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

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

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## **APPENDIX B**

CalEEMod Model Year 2010 Annual Printouts

Lakepointe Apartments Year 2010 GHG Emissions  
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	349.00	Space	2.00	5,000.00	0
Apartments Low Rise	152.00	Dwelling Unit	6.00	152,000.00	435

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2010

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data

## Project Characteristics -

Land Use - 152 units Apartment Low Rise on 6 acres and 349 space Parking Lot on 2 acres and 5,000 sq ft of parking lot paint.

Construction Phase - Project schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for water truck emissions

Vehicle Trips - Weekday Trip Rate set to 6.65 daily trips per TIA.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No fireplaces would be installed in the apartments

Construction Off-road Equipment Mitigation - Mitigation of Water Exposed Area 3x per day was selected to account for SCAQMD Rule 403 minimum requirements

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	45.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	139,600.00	5,000.00
tblLandUse	LotAcreage	3.14	2.00
tblLandUse	LotAcreage	9.50	6.00
tblProjectCharacteristics	OperationalYear	2014	2010
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr											MT/yr				
2016	..	..	..	..	..	..	..	..	..	..	0.0000	245.6721	245.6721	0.0477	0.0000	246.6735
2017	..	..	..	..	..	..	..	..	..	..	0.0000	268.2321	268.2321	0.0476	0.0000	269.2316
<b>Total</b>											<b>0.0000</b>	<b>513.9041</b>	<b>513.9041</b>	<b>0.0953</b>	<b>0.0000</b>	<b>515.9051</b>

## 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				
2016	..	..	..	..	..	..	..	..	..	..	0.0000	245.6719	245.6719	0.0477	0.0000	246.6733
2017	..	..	..	..	..	..	..	..	..	..	0.0000	268.2319	268.2319	0.0476	0.0000	269.2313
<b>Total</b>											<b>0.0000</b>	<b>513.9037</b>	<b>513.9037</b>	<b>0.0953</b>	<b>0.0000</b>	<b>515.9046</b>

[illegible]

## 2.2 Overall Operational

### Unmitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area											0.0000	2.5692	2.5692	3.1500e-003	0.0000	2.6353
Energy											0.0000	289.9384	289.9384	0.0103	3.7400e-003	291.3149
Mobile											0.0000	1,634.2724	1,634.2724	0.0889	0.0000	1,636.1390
Waste											14.1931	0.0000	14.1931	0.8388	0.0000	31.8077
Water											3.1419	56.7518	59.8937	0.3253	8.1600e-003	69.2547
<b>Total</b>											<b>17.3350</b>	<b>1,983.5318</b>	<b>2,000.8669</b>	<b>1.2665</b>	<b>0.0119</b>	<b>2,031.1516</b>

## 2.2 Overall Operational

### Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area											0.0000	2.5692	2.5692	3.1500e-003	0.0000	2.6353
Energy											0.0000	289.9384	289.9384	0.0103	3.7400e-003	291.3149
Mobile											0.0000	1,634.2724	1,634.2724	0.0889	0.0000	1,636.1390
Waste											14.1931	0.0000	14.1931	0.8388	0.0000	31.8077
Water											3.1419	56.7518	59.8937	0.3253	8.1500e-003	69.2496
<b>Total</b>											<b>17.3350</b>	<b>1,983.5318</b>	<b>2,000.8669</b>	<b>1.2664</b>	<b>0.0119</b>	<b>2,031.1466</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00

## 3.0 Construction Detail

### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/29/2016	7/12/2016	5	10	
2	Grading	Grading	7/13/2016	8/9/2016	5	20	
3	Building Construction	Building Construction	8/10/2016	6/27/2017	5	230	
4	Paving	Paving	6/28/2017	7/25/2017	5	20	
5	Architectural Coating	Architectural Coating	7/26/2017	9/26/2017	5	45	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 0**

**Residential Indoor: 307,800; Residential Outdoor: 102,600; Non-Residential Indoor: 225; Non-Residential Outdoor: 75 (Architectural Coating – sqft)**

**OffRoad Equipment**



Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
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
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Water Exposed Area

### 3.2 Site Preparation - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	18.4386	18.4386	5.5600e-003	0.0000	18.5554
<b>Total</b>											<b>0.0000</b>	<b>18.4386</b>	<b>18.4386</b>	<b>5.5600e-003</b>	<b>0.0000</b>	<b>18.5554</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.5729	0.5729	0.0000	0.0000	0.5730
Worker											0.0000	0.8392	0.8392	4.0000e-005	0.0000	0.8400
<b>Total</b>											<b>0.0000</b>	<b>1.4121</b>	<b>1.4121</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4130</b>

### 3.2 Site Preparation - 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					
Fugitive Dust	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	18.4385	18.4385	5.5600e-003	0.0000	18.5553
<b>Total</b>											<b>0.0000</b>	<b>18.4385</b>	<b>18.4385</b>	<b>5.5600e-003</b>	<b>0.0000</b>	<b>18.5553</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	0.5729	0.5729	0.0000	0.0000	0.5730
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	0.8392	0.8392	4.0000e-005	0.0000	0.8400
<b>Total</b>											<b>0.0000</b>	<b>1.4121</b>	<b>1.4121</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4130</b>

### 3.3 Grading - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	28.0664	28.0664	8.4700e-003	0.0000	28.2442
<b>Total</b>											<b>0.0000</b>	<b>28.0664</b>	<b>28.0664</b>	<b>8.4700e-003</b>	<b>0.0000</b>	<b>28.2442</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	1.1458	1.1458	1.0000e-005	0.0000	1.1460
Worker											0.0000	1.3986	1.3986	7.0000e-005	0.0000	1.4000
<b>Total</b>											<b>0.0000</b>	<b>2.5445</b>	<b>2.5445</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.5460</b>

### 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	tons/yr										MT/yr					
Fugitive Dust	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	28.0664	28.0664	8.4700e-003	0.0000	28.2441
<b>Total</b>											<b>0.0000</b>	<b>28.0664</b>	<b>28.0664</b>	<b>8.4700e-003</b>	<b>0.0000</b>	<b>28.2441</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	1.1458	1.1458	1.0000e-005	0.0000	1.1460
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	1.3986	1.3986	7.0000e-005	0.0000	1.4000
<b>Total</b>											<b>0.0000</b>	<b>2.5445</b>	<b>2.5445</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.5460</b>

### 3.4 Building Construction - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	124.7091	124.7091	0.0309	0.0000	125.3586
<b>Total</b>											<b>0.0000</b>	<b>124.7091</b>	<b>124.7091</b>	<b>0.0309</b>	<b>0.0000</b>	<b>125.3586</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	16.7197	16.7197	1.1000e-004	0.0000	16.7221
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	53.7818	53.7818	2.5000e-003	0.0000	53.8343
<b>Total</b>											<b>0.0000</b>	<b>70.5015</b>	<b>70.5015</b>	<b>2.6100e-003</b>	<b>0.0000</b>	<b>70.5564</b>

### 3.4 Building Construction - 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	..	..	..	..	..	..	..	..	..	..	0.0000	124.7090	124.7090	0.0309	0.0000	125.3585
<b>Total</b>											<b>0.0000</b>	<b>124.7090</b>	<b>124.7090</b>	<b>0.0309</b>	<b>0.0000</b>	<b>125.3585</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	16.7197	16.7197	1.1000e-004	0.0000	16.7221
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	53.7818	53.7818	2.5000e-003	0.0000	53.8343
<b>Total</b>											<b>0.0000</b>	<b>70.5015</b>	<b>70.5015</b>	<b>2.6100e-003</b>	<b>0.0000</b>	<b>70.5564</b>

### 3.4 Building Construction - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	152.0692	152.0692	0.0374	0.0000	152.8552
<b>Total</b>											<b>0.0000</b>	<b>152.0692</b>	<b>152.0692</b>	<b>0.0374</b>	<b>0.0000</b>	<b>152.8552</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	20.2673	20.2673	1.3000e-004	0.0000	20.2700
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	63.6819	63.6819	2.8300e-003	0.0000	63.7414
<b>Total</b>											<b>0.0000</b>	<b>83.9492</b>	<b>83.9492</b>	<b>2.9600e-003</b>	<b>0.0000</b>	<b>84.0114</b>



### 3.4 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	..	..	..	..	..	..	..	..	..	..	0.0000	152.0691	152.0691	0.0374	0.0000	152.8550
<b>Total</b>											<b>0.0000</b>	<b>152.0691</b>	<b>152.0691</b>	<b>0.0374</b>	<b>0.0000</b>	<b>152.8550</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	20.2673	20.2673	1.3000e-004	0.0000	20.2700
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	63.6819	63.6819	2.8300e-003	0.0000	63.7414
<b>Total</b>											<b>0.0000</b>	<b>83.9492</b>	<b>83.9492</b>	<b>2.9600e-003</b>	<b>0.0000</b>	<b>84.0114</b>

**3.5 Paving - 2017****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8266
Paving	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>											<b>0.0000</b>	<b>20.6934</b>	<b>20.6934</b>	<b>6.3400e-003</b>	<b>0.0000</b>	<b>20.8266</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	1.3431	1.3431	6.0000e-005	0.0000	1.3444
<b>Total</b>											<b>0.0000</b>	<b>1.3431</b>	<b>1.3431</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.3444</b>

**3.5 Paving - 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											0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8265
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>											<b>0.0000</b>	<b>20.6934</b>	<b>20.6934</b>	<b>6.3400e-003</b>	<b>0.0000</b>	<b>20.8265</b>

**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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.3431	1.3431	6.0000e-005	0.0000	1.3444
<b>Total</b>											<b>0.0000</b>	<b>1.3431</b>	<b>1.3431</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.3444</b>

### 3.6 Architectural Coating - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.7448	5.7448	6.1000e-004	0.0000	5.7576
<b>Total</b>											<b>0.0000</b>	<b>5.7448</b>	<b>5.7448</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>5.7576</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.4323	4.4323	2.0000e-004	0.0000	4.4364
<b>Total</b>											<b>0.0000</b>	<b>4.4323</b>	<b>4.4323</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>4.4364</b>

### 3.6 Architectural Coating - 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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.7448	5.7448	6.1000e-004	0.0000	5.7576
<b>Total</b>											<b>0.0000</b>	<b>5.7448</b>	<b>5.7448</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>5.7576</b>

#### 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.4323	4.4323	2.0000e-004	0.0000	4.4364
<b>Total</b>											<b>0.0000</b>	<b>4.4323</b>	<b>4.4323</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>4.4364</b>

#### 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	1,634.2724	1,634.2724	0.0889	0.0000	1,636.1390
Unmitigated											0.0000	1,634.2724	1,634.2724	0.0889	0.0000	1,636.1390

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Apartment Low Rise	1,010.80	1,088.32	922.64	3,448,863	3,448,863
Parking Lot	0.00	0.00	0.00		
Total	1,010.80	1,088.32	922.64	3,448,863	3,448,863

#### 4.3 Trip Type Information

Land Use	Miles				Trip %				Trip Purpose %			
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by			
Apartment Low Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3			
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0			

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.474432	0.069206	0.171278	0.172385	0.046184	0.007940	0.011579	0.034388	0.001128	0.001133	0.006100	0.000973	0.003274

## 5.0 Electricity Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated	..	..	..	..	..	..	..	..	..	..	0.0000	178.6336	178.6336	8.2100e-003	1.7000e-003	179.3327
Electricity Unmitigated	..	..	..	..	..	..	..	..	..	..	0.0000	178.6336	178.6336	8.2100e-003	1.7000e-003	179.3327
Natural Gas Mitigated	..	..	..	..	..	..	..	..	..	..	0.0000	111.3049	111.3049	2.1300e-003	2.0400e-003	111.9823
Natural Gas Unmitigated	..	..	..	..	..	..	..	..	..	..	0.0000	111.3049	111.3049	2.1300e-003	2.0400e-003	111.9823

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr											MT/yr				
Apartments Low Rise	2.08577e +006											0.0000	111.3049	111.3049	2.1300e- 003	2.0400e- 003	111.9823
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>												<b>0.0000</b>	<b>111.3049</b>	<b>111.3049</b>	<b>2.1300e- 003</b>	<b>2.0400e- 003</b>	<b>111.9823</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr											MT/yr				
Apartments Low Rise	2.08577e +006											0.0000	111.3049	111.3049	2.1300e- 003	2.0400e- 003	111.9823
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>												<b>0.0000</b>	<b>111.3049</b>	<b>111.3049</b>	<b>2.1300e- 003</b>	<b>2.0400e- 003</b>	<b>111.9823</b>



5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	619829	177.3744	8.1500e-003	1.6900e-003	178.0686
Parking Lot	4400	1.2591	6.0000e-005	1.0000e-005	1.2641
Total		178.6336	8.2100e-003	1.7000e-003	179.3327

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	619829	177.3744	8.1500e-003	1.6900e-003	178.0686
Parking Lot	4400	1.2591	6.0000e-005	1.0000e-005	1.2641
Total		178.6336	8.2100e-003	1.7000e-003	179.3327

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	2.5692	2.5692	3.1500e-003	0.0000	2.6353
Unmitigated											0.0000	2.5692	2.5692	3.1500e-003	0.0000	2.6353

## 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	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	2.5692	2.5692	3.1500e-003	0.0000	2.6353
<b>Total</b>											<b>0.0000</b>	<b>2.5692</b>	<b>2.5692</b>	<b>3.1500e-003</b>	<b>0.0000</b>	<b>2.6353</b>

## 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											0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	2.5692	2.5692	3.1500e-003	0.0000	2.6353
<b>Total</b>											<b>0.0000</b>	<b>2.5692</b>	<b>2.5692</b>	<b>3.1500e-003</b>	<b>0.0000</b>	<b>2.6353</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	59.8937	0.3253	8.1500e-003	69.2496
Unmitigated	59.8937	0.3253	8.1600e-003	69.2547

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	9.90341 / 6.24346	59.8937	0.3253	8.1600e-003	69.2547
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>59.8937</b>	<b>0.3253</b>	<b>8.1600e-003</b>	<b>69.2547</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	9.90341 / 6.24346	59.8937	0.3253	8.1500e-003	69.2496
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>59.8937</b>	<b>0.3253</b>	<b>8.1500e-003</b>	<b>69.2496</b>

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	14.1931	0.8388	0.0000	31.8077
Unmitigated	14.1931	0.8388	0.0000	31.8077

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	69.92	14.1931	0.8388	0.0000	31.8077
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		14.1931	0.8388	0.0000	31.8077

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	69.92	14.1931	0.8388	0.0000	31.8077
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		14.1931	0.8388	0.0000	31.8077

9.0 Operational Offroad

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

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## **APPENDIX C**

CalEEMod Model Year 2020 Annual Printouts

Lakepointe Apartments Year 2020 GHG Emissions  
Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	349.00	Space	2.00	5,000.00	0
Apartments Low Rise	152.00	Dwelling Unit	6.00	152,000.00	435

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2020

Utility Company      Southern California Edison

CO2 Intensity (lb/MW/hr)	630.89	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006
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1.3 User Entered Comments & Non-Default Data



Project Characteristics -

Land Use - 152 units Apartment Low Rise on 6 acres and 349 space Parking Lot on 2 acres and 5,000 sq ft of parking lot paint.

Construction Phase - Project schedule provided by applicant

Trips and VMT - 6 vendor trips per day added to Site Preparation and Grading phases to account for water truck emissions

Vehicle Trips - Weekday Trip Rate set to 6.65 daily trips per TIA.

Woodstoves - No fireplaces would be installed in the apartments

Construction Off-road Equipment Mitigation - Mitigation of Water Exposed Area 3x per day was selected to account for SCAQMD Rule 403 minimum requirements

Mobile Land Use Mitigation - Riverside Transit Bus Route 8 located approximately 210 feet northeast of project site

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Energy Mitigation - Exceed Title 24 by 25% selected to account for Title 24 Part 6 2013 Energy Efficiency Standards

Water Mitigation - 25% Reduction in turf and use water-efficient irrigation were selected to account for EO B-29-15 and Install Low-flow was selected to account for CalGreen

Waste Mitigation - A 50% reduction in waste disposed was selected to account for SB 939 and 1374.

Sequestration - Minimum 90 Trees planted on Project Site per Measure E-1.1

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	45.00
tblFireplaces	NumberGas	129.20	0.00
tblFireplaces	NumberNoFireplace	15.20	152.00
tblFireplaces	NumberWood	7.60	0.00
tblLandUse	LandUseSquareFeet	139,600.00	5,000.00
tblLandUse	LotAcreage	3.14	2.00
tblLandUse	LotAcreage	9.50	6.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblSequestration	NumberOfNewTrees	0.00	90.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblVehicleTrips	WD_TR	6.59	6.65
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr											MT/yr				
2016											0.0000	245.6721	245.6721	0.0477	0.0000	246.6735
2017											0.0000	268.2321	268.2321	0.0476	0.0000	269.2316
<b>Total</b>											<b>0.0000</b>	<b>513.9041</b>	<b>513.9041</b>	<b>0.0953</b>	<b>0.0000</b>	<b>515.9051</b>

## 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					
2016											0.0000	245.6719	245.6719	0.0477	0.0000	246.6733
2017											0.0000	268.2319	268.2319	0.0476	0.0000	269.2313
Total											0.0000	513.9037	513.9037	0.0953	0.0000	515.9046

[illegible]

**2.2 Overall Operational****Unmitigated Operational**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area											0.0000	2.5692	2.5692	2.5200e-003	0.0000	2.6221
Energy											0.0000	289.9384	289.9384	0.0103	3.7400e-003	291.3149
Mobile											0.0000	1,296.9173	1,296.9173	0.0384	0.0000	1,297.7227
Waste											14.1931	0.0000	14.1931	0.8388	0.0000	31.8077
Water											3.1419	56.7518	59.8937	0.3253	8.1600e-003	69.2547
<b>Total</b>											<b>17.3350</b>	<b>1,646.1768</b>	<b>1,663.5118</b>	<b>1.2153</b>	<b>0.0119</b>	<b>1,692.7221</b>

## 2.2 Overall Operational

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	2.5692	2.5692	2.5200e-003	0.0000	2.6221
Energy											0.0000	260.2553	260.2553	9.5900e-003	3.2600e-003	261.4662
Mobile											0.0000	1,148.0412	1,148.0412	0.0342	0.0000	1,148.7597
Waste											7.0966	0.0000	7.0966	0.4194	0.0000	15.9039
Water											2.5135	48.1606	50.6741	0.2603	6.5400e-003	58.1697
<b>Total</b>											<b>9.6101</b>	<b>1,459.0263</b>	<b>1,468.6364</b>	<b>0.7260</b>	<b>9.8000e-003</b>	<b>1,486.9215</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>44.56</b>	<b>11.37</b>	<b>11.71</b>	<b>40.26</b>	<b>17.65</b>	<b>12.16</b>

## 2.3 Vegetation

### Vegetation

	CO2e
Category	MT
New Trees	63.7200
Total	63.7200

## 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	6/29/2016	7/12/2016	5	10	
2	Grading	Grading	7/13/2016	8/9/2016	5	20	
3	Building Construction	Building Construction	8/10/2016	6/27/2017	5	230	
4	Paving	Paving	6/28/2017	7/25/2017	5	20	
5	Architectural Coating	Architectural Coating	7/26/2017	9/26/2017	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 307,800; Residential Outdoor: 102,600; Non-Residential Indoor: 225; Non-Residential Outdoor: 75 (Architectural Coating – sqft)

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
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
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area  
Clean Paved Roads

### 3.2 Site Preparation - 2016

#### Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	18.4386	18.4386	5.5600e-003	0.0000	18.5554
<b>Total</b>											<b>0.0000</b>	<b>18.4386</b>	<b>18.4386</b>	<b>5.5600e-003</b>	<b>0.0000</b>	<b>18.5554</b>

#### Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.5729	0.5729	0.0000	0.0000	0.5730
Worker											0.0000	0.8392	0.8392	4.0000e-005	0.0000	0.8400
<b>Total</b>											<b>0.0000</b>	<b>1.4121</b>	<b>1.4121</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4130</b>



### 3.2 Site Preparation - 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					
Fugitive Dust	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	18.4385	18.4385	5.5600e-003	0.0000	18.5553
<b>Total</b>											<b>0.0000</b>	<b>18.4385</b>	<b>18.4385</b>	<b>5.5600e-003</b>	<b>0.0000</b>	<b>18.5553</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	0.5729	0.5729	0.0000	0.0000	0.5730
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	0.8392	0.8392	4.0000e-005	0.0000	0.8400
<b>Total</b>											<b>0.0000</b>	<b>1.4121</b>	<b>1.4121</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4130</b>

### 3.3 Grading - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	28.0664	28.0664	8.4700e-003	0.0000	28.2442
<b>Total</b>											<b>0.0000</b>	<b>28.0664</b>	<b>28.0664</b>	<b>8.4700e-003</b>	<b>0.0000</b>	<b>28.2442</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	1.1458	1.1458	1.0000e-005	0.0000	1.1460
Worker											0.0000	1.3986	1.3986	7.0000e-005	0.0000	1.4000
<b>Total</b>											<b>0.0000</b>	<b>2.5445</b>	<b>2.5445</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.5460</b>

### 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	tons/yr										MT/yr					
Fugitive Dust	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	28.0664	28.0664	8.4700e-003	0.0000	28.2441
<b>Total</b>											<b>0.0000</b>	<b>28.0664</b>	<b>28.0664</b>	<b>8.4700e-003</b>	<b>0.0000</b>	<b>28.2441</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	1.1458	1.1458	1.0000e-005	0.0000	1.1460
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	1.3986	1.3986	7.0000e-005	0.0000	1.4000
<b>Total</b>											<b>0.0000</b>	<b>2.5445</b>	<b>2.5445</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>2.5460</b>

### 3.4 Building Construction - 2016

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	124.7091	124.7091	0.0309	0.0000	125.3586
<b>Total</b>											<b>0.0000</b>	<b>124.7091</b>	<b>124.7091</b>	<b>0.0309</b>	<b>0.0000</b>	<b>125.3586</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	16.7197	16.7197	1.1000e-004	0.0000	16.7221
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	53.7818	53.7818	2.5000e-003	0.0000	53.8343
<b>Total</b>											<b>0.0000</b>	<b>70.5015</b>	<b>70.5015</b>	<b>2.6100e-003</b>	<b>0.0000</b>	<b>70.5564</b>

### 3.4 Building Construction - 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	..	..	..	..	..	..	..	..	..	..	0.0000	124.7090	124.7090	0.0309	0.0000	125.3585
<b>Total</b>											<b>0.0000</b>	<b>124.7090</b>	<b>124.7090</b>	<b>0.0309</b>	<b>0.0000</b>	<b>125.3585</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	16.7197	16.7197	1.1000e-004	0.0000	16.7221
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	53.7818	53.7818	2.5000e-003	0.0000	53.8343
<b>Total</b>											<b>0.0000</b>	<b>70.5015</b>	<b>70.5015</b>	<b>2.6100e-003</b>	<b>0.0000</b>	<b>70.5564</b>

**3.4 Building Construction - 2017****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	..	..	..	..	..	..	..	..	..	..	0.0000	152.0692	152.0692	0.0374	0.0000	152.8552
<b>Total</b>											<b>0.0000</b>	<b>152.0692</b>	<b>152.0692</b>	<b>0.0374</b>	<b>0.0000</b>	<b>152.8552</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	..	..	..	..	..	..	..	..	..	..	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	20.2673	20.2673	1.3000e-004	0.0000	20.2700
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	63.6819	63.6819	2.8300e-003	0.0000	63.7414
<b>Total</b>											<b>0.0000</b>	<b>83.9492</b>	<b>83.9492</b>	<b>2.9600e-003</b>	<b>0.0000</b>	<b>84.0114</b>

### 3.4 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	..	..	..	..	..	..	..	..	..	..	0.0000	152.0691	152.0691	0.0374	0.0000	152.8550
<b>Total</b>											<b>0.0000</b>	<b>152.0691</b>	<b>152.0691</b>	<b>0.0374</b>	<b>0.0000</b>	<b>152.8550</b>

#### 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
Vendor	..	..	..	..	..	..	..	..	..	..	0.0000	20.2673	20.2673	1.3000e-004	0.0000	20.2700
Worker	..	..	..	..	..	..	..	..	..	..	0.0000	63.6819	63.6819	2.8300e-003	0.0000	63.7414
<b>Total</b>											<b>0.0000</b>	<b>83.9492</b>	<b>83.9492</b>	<b>2.9600e-003</b>	<b>0.0000</b>	<b>84.0114</b>

**3.5 Paving - 2017****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8266
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>											<b>0.0000</b>	<b>20.6934</b>	<b>20.6934</b>	<b>6.3400e-003</b>	<b>0.0000</b>	<b>20.8266</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.3431	1.3431	6.0000e-005	0.0000	1.3444
<b>Total</b>											<b>0.0000</b>	<b>1.3431</b>	<b>1.3431</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.3444</b>



**3.5 Paving - 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											0.0000	20.6934	20.6934	6.3400e-003	0.0000	20.8265
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>											<b>0.0000</b>	<b>20.6934</b>	<b>20.6934</b>	<b>6.3400e-003</b>	<b>0.0000</b>	<b>20.8265</b>

**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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.3431	1.3431	6.0000e-005	0.0000	1.3444
<b>Total</b>											<b>0.0000</b>	<b>1.3431</b>	<b>1.3431</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.3444</b>

### 3.6 Architectural Coating - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.7448	5.7448	6.1000e-004	0.0000	5.7576
<b>Total</b>											<b>0.0000</b>	<b>5.7448</b>	<b>5.7448</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>5.7576</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.4323	4.4323	2.0000e-004	0.0000	4.4364
<b>Total</b>											<b>0.0000</b>	<b>4.4323</b>	<b>4.4323</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>4.4364</b>

### 3.6 Architectural Coating - 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					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	5.7448	5.7448	6.1000e-004	0.0000	5.7576
<b>Total</b>											<b>0.0000</b>	<b>5.7448</b>	<b>5.7448</b>	<b>6.1000e-004</b>	<b>0.0000</b>	<b>5.7576</b>

#### 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
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.4323	4.4323	2.0000e-004	0.0000	4.4364
<b>Total</b>											<b>0.0000</b>	<b>4.4323</b>	<b>4.4323</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>4.4364</b>

#### 4.0 Operational Detail - Mobile

#### 4.1 Mitigation Measures Mobile

Increase Transit Accessibility

Improve Pedestrian Network

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	..	..	..	..	..	..	..	..	..	..	0.0000	1,148.041 2	1,148.041 2	0.0342	0.0000	1,148.759 7
Unmitigated	..	..	..	..	..	..	..	..	..	..	0.0000	1,296.917 3	1,296.917 3	0.0384	0.0000	1,297.722 7

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated Annual VMT	Mitigated Annual VMT
	Weekday	Saturday	Sunday		
Apartment Low Rise Parking Lot	1,010.80 0.00	1,088.32 0.00	922.64 0.00	3,448,863	3,041,897
Total	1,010.80	1,088.32	922.64	3,448,863	3,041,897

#### 4.3 Trip Type Information

Land Use	Miles				Trip %				Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by		
Apartment Low Rise Parking Lot	14.70 16.60	5.90 8.40	8.70 6.90	40.20 0.00	19.20 0.00	40.60 0.00	86 0	11 0	3 0		

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457065	0.068684	0.178597	0.172280	0.046891	0.007460	0.012475	0.043976	0.000902	0.001056	0.006515	0.000828	0.003272

## 5.0 Energy Detail

### 5.0 Fleet Mix

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated	..	..	..	..	..	..	..	..	..	..	0.0000	171.7112	171.7112	7.8900e-003	1.6300e-003	172.3832
Electricity Unmitigated	..	..	..	..	..	..	..	..	..	..	0.0000	178.6336	178.6336	8.2100e-003	1.7000e-003	179.3327
Natural Gas Mitigated	..	..	..	..	..	..	..	..	..	..	0.0000	88.5442	88.5442	1.7000e-003	1.6200e-003	89.0830
Natural Gas Unmitigated	..	..	..	..	..	..	..	..	..	..	0.0000	111.3049	111.3049	2.1300e-003	2.0400e-003	111.9823

**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				
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartment Low Rise	2.08577e +006											0.0000	111.3049	111.3049	2.1300e- 003	2.0400e- 003	111.9823
<b>Total</b>												<b>0.0000</b>	<b>111.3049</b>	<b>111.3049</b>	<b>2.1300e- 003</b>	<b>2.0400e- 003</b>	<b>111.9823</b>

**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				
Apartment Low Rise	1.65925e +006											0.0000	88.5442	88.5442	1.7000e- 003	1.6200e- 003	89.0830
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>												<b>0.0000</b>	<b>88.5442</b>	<b>88.5442</b>	<b>1.7000e- 003</b>	<b>1.6200e- 003</b>	<b>89.0830</b>

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	619829	177.3744	8.1500e-003	1.6900e-003	178.0686
Parking Lot	4400	1.2591	6.0000e-005	1.0000e-005	1.2641
Total		178.6336	8.2100e-003	1.7000e-003	179.3327

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	595639	170.4521	7.8400e-003	1.6200e-003	171.1191
Parking Lot	4400	1.2591	6.0000e-005	1.0000e-005	1.2641
Total		171.7112	7.9000e-003	1.6300e-003	172.3832

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	2.5692	2.5692	2.5200e-003	0.0000	2.6221
Unmitigated											0.0000	2.5692	2.5692	2.5200e-003	0.0000	2.6221

## 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	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	2.5692	2.5692	2.5200e-003	0.0000	2.6221
<b>Total</b>											<b>0.0000</b>	<b>2.5692</b>	<b>2.5692</b>	<b>2.5200e-003</b>	<b>0.0000</b>	<b>2.6221</b>



## 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											0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	2.5692	2.5692	2.5200e-003	0.0000	2.6221
<b>Total</b>											<b>0.0000</b>	<b>2.5692</b>	<b>2.5692</b>	<b>2.5200e-003</b>	<b>0.0000</b>	<b>2.6221</b>

## 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  
 Turf Reduction  
 Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	50.6741	0.2603	6.5400e-003	58.1697
Unmitigated	59.8937	0.3253	8.1600e-003	69.2547

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	9.90341 / 6.24346	59.8937	0.3253	8.1600e-003	69.2547
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>59.8937</b>	<b>0.3253</b>	<b>8.1600e-003</b>	<b>69.2547</b>

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	7.92273 / 5.8626	50.6741	0.2603	6.5400e-003	58.1697
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		50.6741	0.2603	6.5400e-003	58.1697

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.0966	0.4194	0.0000	15.9039
Unmitigated	14.1931	0.8388	0.0000	31.8077

## 8.2 Waste by Land Use

### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	69.92	14.1931	0.8388	0.0000	31.8077
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>14.1931</b>	<b>0.8388</b>	<b>0.0000</b>	<b>31.8077</b>

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	34.96	7.0966	0.4194	0.0000	15.9039
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>7.0966</b>	<b>0.4194</b>	<b>0.0000</b>	<b>15.9039</b>

## 9.0 Operational Offroad

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

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	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	63.7200	0.0000	0.0000	63.7200

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	90	63.7200	0.0000	0.0000	63.7200
Total		63.7200	0.0000	0.0000	63.7200