APPENDIX A

Air Quality/Climate Change Technical Report

KUNZMAN ASSOCIATES, INC.

LIONS PARK

AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

January 31, 2017

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

LIONS PARK

AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

January 31, 2017

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I. INTRODUCTION AND SETTING

A. Purpose and Objectives

This study was performed to address the possibility of regional and local air quality impacts, global climate change impacts, and cancer risk from diesel air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality, greenhouse gases, and cancer risk thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the operations related cancer risk from diesel emissions
- recommendations for mitigation measures
- analysis of the conformity of the proposed project with the SCAQMD AQMP

The City of Costa Mesa is the lead agency responsible for preparation of this air quality analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

B. Project Location

The project site is located at 570 West 18th Street in Lions Park within the City of Costa Mesa. A vicinity map showing the project location is provided on Figure 1.

C. Project Description

The proposed project is made up of 3 separate tasks covering approximately 4.57 acres within Lions Park. Task 1 is the development of a new 22,860 square foot library. Task 2 is that of improvements to Lions Park which are to include street-front improvements for portions of Park Avenue (including the addition of 27 street parking spaces) and Anaheim Avenue and the construction of a new surface parking lot located in front of the Costa Mesa Historical Society and accessed by Anaheim Avenue. Task 3 is the renovation and expansion of the existing 8,740 gross square foot Donald Dungan Library building into a Neighborhood Community Center. The renovated building would total 9,281 square feet and would include a new catering kitchen, new exterior glazing and entrance doors, new mechanical equipment and electrical panels, new lighting, new audiovisual/information technology equipment and infrastructure, new walled loading/delivery area, new landscaping surrounding the building, and new slurry-coat finish and re-striping of the Park Avenue surface parking lot.

The new library building is to be LEED Gold certified and the new Neighborhood Community Center is to be LEED Silver certified.

Figure 2 illustrates the project site plan.

D. Phasing and Timing

The project will be constructed in 2 phases:

Phase 1 is that of Tasks 1 and 2, which includes construction of the new 22,860 square foot library, Lions Park improvements (off-site street improvements and new surface parking lot), and demolition of the existing Neighborhood Community Center and associated parking lot. The off-site street improvements for Park Avenue total approximately 580 linear feet of street frontage. Park Avenue's total improvement area is approximately 17,430 square feet. The improvements include new sidewalk, entrance driveway, curb and gutter, parkway landscaping, street trees and furnishings, and 27 new parking spaces. The off-site street improvements for Anaheim Avenue total approximately 145 linear feet of street frontage. Anaheim Avenue's total improvement area is approximately 2,350 square feet. The improvements include new sidewalk, entrance driveway, curb and gutter, and parkway landscaping and street trees. Phase 1 is expected to begin construction in July 2017 and be completed by December 2018. Phase 1 will be operational in 2019.

Phase 2 is that of Task 3, which includes the renovation and expansion of the existing 8,740 gross square foot Donald Dungan Library building into a 9,281 square foot Neighborhood Community Center. Phase 2 is expected to begin construction in February 2019 and be completed in February 2020. Phase 2 will be operational in 2020.

E. Sensitive Receptors in Project Vicinity

For the purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, or convalescent facility where it is possible that an individual could remain at the location for 24 hours. SCAQMD also considers land uses such as schools, child care centers, athletic facilities, and playgrounds to be sensitive receptors. Commercial and industrial facilities are not included in the definition of sensitive receptor because employees do not typically remain on-site for a full 24 hours, but are present for shorter periods of time, such as eight hours.

The nearest sensitive receptors to the project site are Lions Park and the surrounding single-family and multi-family residential dwelling units. Single-family detached residential dwelling units are located approximately 47 feet to the west (across Anaheim Avenue) and multi-family attached residential dwelling units are located approximately 52 feet to the west (across Anaheim Avenue), 67 feet to the east (across Park Avenue), and 120 feet north. Additional single-family detached residential dwelling units are located approximately 340 feet south of the proposed project.

F. Executive Summary of Findings

Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

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

Operational-Source Emissions

Project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality impact as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related traffic will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO “hotspots). Project operational-source emissions would therefore not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less-than significant.

Project-related GHG emissions are also considered to be less than significant and will not conflict with the goals of the CARB Scoping Plan.

Figure 1
Project Location Map

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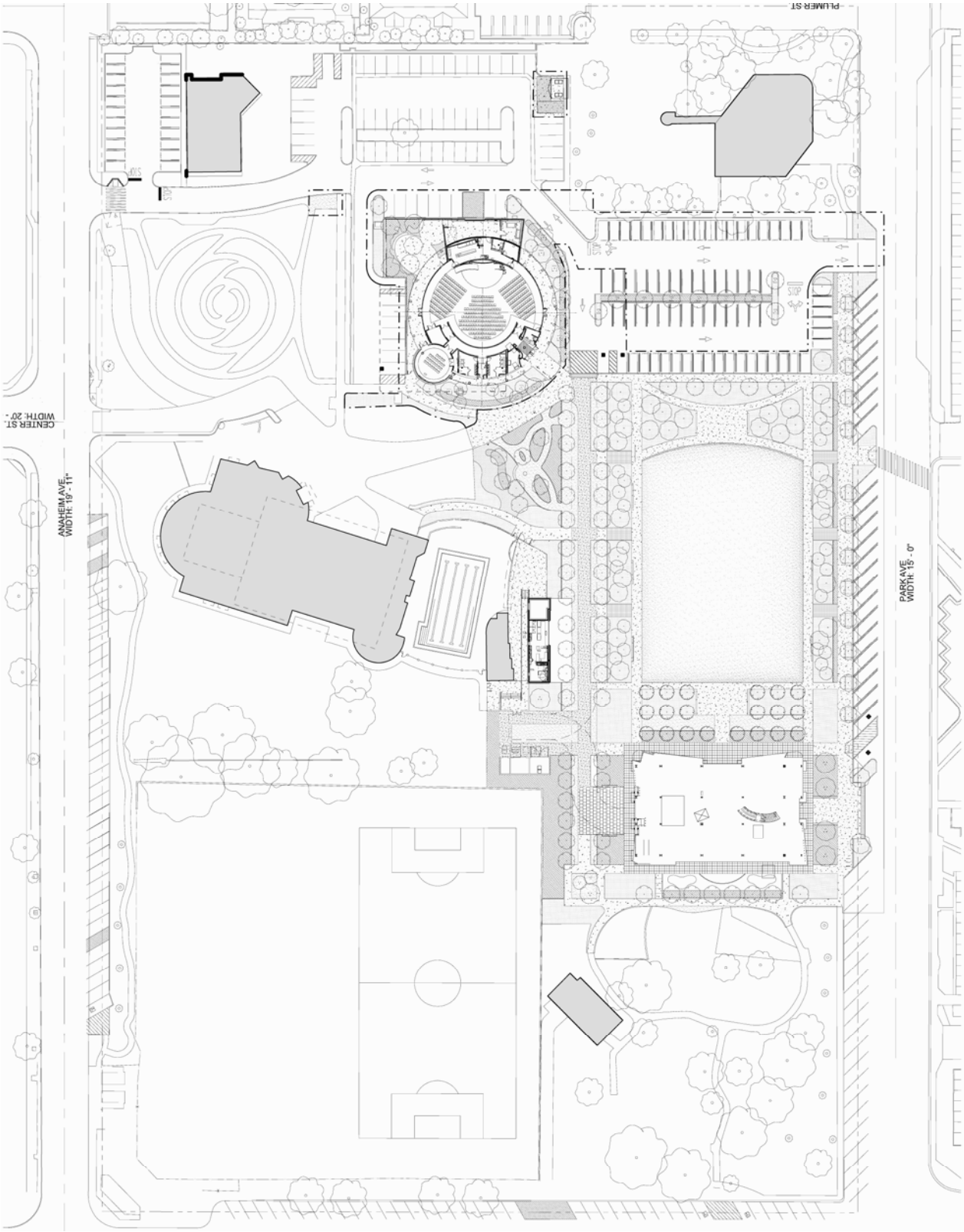
Figure 2
Site Plan



II. ATMOSPHERIC SETTING

The proposed project site is located in the southern portion of the City of Costa Mesa. The City of Costa Mesa is located in west Orange County and is bound by the City of Santa Ana to the north; the City of Irvine to the east; the City of Newport Beach to the east, south, and southwest; the City of Fountain Valley to the northwest; and the City of Huntington Beach to the west. The City of Costa Mesa is located within the South Coast Air Basin (Basin), which is surrounded by mountains trapping the air and its pollutants in the valleys or basins below. The Basin includes all of Orange County and the non-desert portions of Los Angeles, San Bernardino, and Riverside Counties. Bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east, the Basin is an area of high air pollution potential. The regional climate within the Basin is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. Air quality within the Basin is influenced by a wide range of emissions sources—such as dense population centers, heavy vehicular traffic, and industry. Climate change within the Basin is influenced by a wide range of emission sources, such as utility usage, heavy vehicular traffic, industry, and meteorology.

The annual average temperature varies throughout the Basin, ranging from the low to mid 60s to over 100 degrees during the summer, measured in Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The City of Costa Mesa is located in the western coastal portion of the Basin. The annual average temperature in the City ranges from 50 to 72°F, although temperatures can occasionally exceed 90°F and even 100°F.

The Basin experiences a persistent temperature inversion, which is characterized by increasing temperature with increasing altitude. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer.

Aside from a persistent temperature inversion, the vertical dispersion of air contaminants in the Basin is also affected by wind conditions. The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. Conversely, on days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas in the Basin are transported eastward, predominantly into Riverside and San Bernardino Counties. Santa Ana winds, which are strong and dry north or northeasterly winds that occur during the fall and winter months, disperse air contaminants differently through the Basin, generally resulting in worse air conditions in Costa Mesa. Santa Ana conditions tend to last for several days at a time.

Wind speeds in the City of Costa Mesa annual average about 9.58 miles per hour (mph) (USA.com 2014). The City and its surrounding area also typically experience a daytime onshore sea breeze. While nighttime land breezes can also occur, wind in the Costa Mesa area is almost exclusively from the west, with the exceptions of winter storms and the Santa Ana winds discussed above.

The majority of annual rainfall in the Basin occurs between December and March. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions. The annual average total of rainfall in the City is approximately 13.92 inches (USA.com 2014).

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the City of Costa Mesa are shown below in Table 1. Table 1 shows that August is typically the warmest month and December 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 1

Costa Mesa Monthly Climate Data[1]

Descriptor	Month of Year											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	64.1	63.6	63.8	65.3	66.7	68.5	71.5	72.9	72.6	71	65.7	64.4
Avg. Min. Temperature	49.5	50.6	52.3	54.6	58.1	61	64	64.8	63.4	59.6	52.1	49.5
Avg. Total Precipitation (in.)	2.05	2.49	1.68	0.72	0.19	0.07	0.03	0.04	0.15	0.37	0.98	1.75

[1] Source: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6175

Data taken from the Newport, CA Monitoring Station.

III. 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.

A. Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, 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.

1. Nitrogen Dioxide (NO_2)

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

2. Ozone (O_3)

Ozone is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx 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 NOx 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 NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

3. Carbon Monoxide (CO)

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 about 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 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.

4. Sulfur Dioxide (SO_2)

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO_2]) are formed when fuel containing sulfur, such as coal and oil is burned, and 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.

5. Lead (Pb)

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 lead 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.

6. Particulate Matter (PM)

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter 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.

7. Volatile Organic Compounds (VOCs)

Although not a criteria pollutant, reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

B. Other Pollutants of Concern

1. Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants 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 forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants 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

toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant 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 diesel particulate matter 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 diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter 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.

2. Asbestos

Asbestos is listed as a TAC by ARB 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 asbestoform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in Orange County. 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. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

C. Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), 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 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_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 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.

1. 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 in 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).

2. Carbon Dioxide

The natural production and absorption of CO_2 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_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important

drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

3. Methane

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 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.

4. Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 314 parts per billion (ppb). N_2O 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. It is 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 in race cars).

5. Chlorofluorocarbons

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) 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. It was 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. 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.

6. 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_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). 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 HFC-134a 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.

7. 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_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

8. Sulfur Hexafluoride

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. 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.

9. 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.

10. Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 2. As shown in Table 2, the global warming potential of GHGs ranges from 1 to 22,800.

Table 2

Global Warming Potentials and Atmospheric Lifetimes[1]

Gas	Atmospheric Lifetime	Global Warming Potential[2] (100 Year Horizon)
Carbon Dioxide (CO_2)	—[3]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (NO)	114	298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

[1] Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

[2] Compared to the same quantity of CO_2 emissions.

[3] Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

IV. AIR QUALITY MANAGEMENT

A. Regulatory Setting

The proposed project 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.

1. International

Montreal Protocol

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. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

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.

The Paris Agreement

The Paris Agreement entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause to undertake take ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable

countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

2. 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. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 3.

The EPA and the California Air Resource Board (CARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 4.

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 State Implementation Plan (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 State Implementation Plan (SIP).

As indicated below in Table 4, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3) and suspended particulates (PM10 and PM2.5). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

According to the AQMP, in 2011 the Basin exceeded federal standards for either ozone or PM2.5 at one or more locations on a total of 124 days, based on the current federal standards for 8-hour ozone and 24-hour PM2.5. Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the 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 Basin (Central San Bernardino Mountains, East San Bernardino Valley, and Metropolitan Riverside County).

PM2.5 in the Basin has improved significantly in recent years, with 2010 and 2011 being the cleanest years on record. In 2011, only one station in the Basin (Metropolitan Riverside County at Mira Loma) exceeded the annual PM2.5 NAAQS and the 98th percentile form of the 24-hour PM2.5 NAAQS, as well as the 3-year design values for these standards. Basin-wide, the federal PM2.5 24-hour standard level was exceeded in 2011 on 17 sampling days.

The Basin is currently in attainment for the federal standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2). While the concentration level of the new 1-hour NO_2 federal standard (100 ppb) was exceeded in the Basin at two stations (Central Los Angeles and Long Beach) on the same day in 2011, the NAAQS NO_2 design value has not been exceeded. Therefore, the Basin remains in attainment of the NO_2 NAAQS.

The EPA designated the Los Angeles County portion of the Basin as nonattainment for the recently revised (2008) federal lead standard (0.15 µg/m3, 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.

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_2 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.

On March 19, 2015, the Whitehouse announced that President Obama will issue an Executive Order that will cut the Federal Government's greenhouse gas (GHG) emissions 40 percent over the next decade from 2008 levels -- saving taxpayers up to $18 billion in avoided energy costs -- and increase the share of electricity the Federal Government consumes from renewable sources to 30 percent. Complementing this effort, several major Federal suppliers are announcing commitments to cut their own GHG emissions. The Administration hosted a roundtable that brought some of these large Federal suppliers together to discuss the benefits of their GHG reduction targets or to make their first-ever corporate commitments to disclose emissions and set new reduction goals.

Together, the combined results of the Federal Government actions and new supplier commitments will reduce GHG emissions by 26 million metric tons by 2025 from 2008 levels, the equivalent of taking nearly 5.5 million cars off the road for a year. And to encourage continued progress across the Federal supply chain, the Administration is releasing a new scorecard to publicly track self-reported emissions disclosure and progress for all major Federal suppliers, who together represent more than $187 billion in Federal spending and account for more than 40 percent of all Federal contract dollars.

Since the Federal Government is the single largest consumer of energy in the Nation, Federal emissions reductions and progress across the supply chain will have broad impacts. The new commitments announced today support the United States' international commitment to cut net GHG emissions 26-28 percent below 2005 levels by 2025, which President Obama first announced in November 2014 as part of an historic agreement with China. Additionally, the goals build on the strong progress made by Federal agencies during the first six years of the Administration under President Obama's 2009 Executive Order on Federal Leadership on Environmental, Energy and Economic Performance, including reducing Federal GHG emissions by 17 percent — which helped Federal agencies avoid $1.8 billion in cumulative energy costs — and increasing the share of renewable energy consumption to 9 percent.[1]

3. 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 measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 3. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray,

[1] Source: https://www.whitehouse.gov/the-press-office/2015/03/19/fact-sheet-reducing-greenhouse-gas-emissions-federal-government-and-acro.

aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the South Coast Air Basin is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, and sulfates and is unclassified for visibility reducing particles and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

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) 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.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (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 into the South Coast Air Basin. 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.

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.

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. This 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 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_2e ($MMTCO_2e$). The 2020 target of 427 $MMTCO_2e$ requires the reduction of 169 $MMTCO_2e$, or approximately 30 percent from the State's projected 2020 business as usual emissions of 596 $MMTCO_2e$ and the reduction of 42 $MMTCO_2e$, 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_2 in a calendar year to submit verification of GHG emissions by December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources that 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 Irritated 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 (FED) was not sufficient for informed decision-making and public review under CEQA. In response, CARB has 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 March order.

While local government operations were not accounted for in achieving the 2020 emissions reduction, local land use changes are estimated to result in a reduction of 5 metric tons of CO_2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of 2010 levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 metric tons of CO_2e (or approximately 1.2 percent of the GHG reduction target).

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

On January 20, 2017, CARB announced its release of a proposed plan to reduce greenhouse gas emissions by 40 percent below 1990 levels by 2030 – the most ambitious target in North America. The plan builds on the state's successful

efforts to reduce emissions and outlines the most effective ways to reach the 2030 goal, including continuing California's Cap-and-Trade Program. The Final 2017 Scoping Plan Update will be released in late March and be considered for approval by the Board in late April.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September, 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to 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 California Public Utilities Commission (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 each year 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 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.

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 Resource 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 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 incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance are provided and no specific mitigation measures are 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.

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.

The proposed project is located within the Southern California Association of Governments (SCAG), which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 13 percent below 2005 per capita GHG emissions levels by 2035. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements. The Housing Element Update is required by the State to be completed within 18 months after RTP/SCS adoption or by October 2013.

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 Bill X7-7
Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR)

to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 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.

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. 2013 Standards have been approved and became effective July 1, 2014.

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

All buildings for which an application for a building permit is submitted on or after January 1, 2014 must follow the 2013 standards. The 2013 commercial standards are estimated to be 30 percent more efficient than the 2008 standards; residential standards are 25 percent more efficient. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Green Building Standards

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require 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 commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

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

Executive Order B-30-15
Executive Order B-30-15, establishing a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030, was signed by Governor Brown in April 2015.

Executive Order B-29-15
Executive Order B-29-15, mandates a statewide 25% reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

Executive Order B-37-16
Executive Order B-29-15, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25% percent reduction called for in EO B-29-15.

4. Regional

South Coast Air Quality Management District
The 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. The 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. On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly

approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines.

A revised draft of the 2012 AQMP was released on September, 2012, and was adopted by the SCAQMD Board on December 7, 2012. The 2012 AQMP is now awaiting approval from CARB and the U.S. EPA. The 2012 AQMP is being prepared in order to meet the federal Clean Air Act requirement that all 24-hour PM2.5 non-attainment areas prepare a SIP, which was required to be submitted to the U.S. EPA by December 14, 2012 and demonstrate attainment with the 24-hour PM2.5 standard by 2014. The 2012 AQMP demonstrates attainment of the federal 24-hour PM2.5 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 NOx 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 NOx control measures have been provided in this AQMP even though the primary purpose of this AQMP is to show compliance with 24-hour PM2.5 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 com24pliance with all federal and state air-quality planning requirements.

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. 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 PM2.5 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.

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

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

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

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

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).

- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)

- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.

- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.

- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.

- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.

- Replanting disturbed areas as soon as practical.

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

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

SCAQMD Rule 481 applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.

(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.

(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

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

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

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

SCAQMD Rule 1186 limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303 governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 1401, New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

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

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.

Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. 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. 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_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Although the 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 South Coast Air 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 the 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 of the AQMP. 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 the 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 South Coast Air Basin, and adverse impacts will be minimized.

SCAQMD Stakeholder 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 provides a quantitative annual thresholds of 10,000 MTCO2e for industrial uses.

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 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 Regional Transportation Plan 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 Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

5. <u>Local – City of Costa Mesa</u>

Local jurisdictions, such as the City of Costa Mesa, 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 and 2012 AQMPs. 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 meet federal and state standards. Instead, the County 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 Conservation Element of the City of Costa Mesa 2015-2035 General Plan summarizes air quality issues in the Basin, air quality-related plans and programs administered by federal, state, and special purpose agencies, and establishes goals and policies to improve air quality. These goals and policies in the Conservation Element include:

GOAL CON-1 It is the goal of the City of Costa Mesa to provide its citizens with a high quality environment through the conservation of resources, including land, water, wildlife, and vegetation; the protection of areas of unique natural beauty; the integration of natural features into the man-made environment.

GOAL CON-2 Reduce the City's carbon footprints and manage resources wisely to meet the needs of a growing population and economy. Base community planning decisions on sustainable practices that reduce environmental pollutants, conserve resources, and minimize waste. Encourage the design of energy-efficient buildings, use renewable energy, and promote alternative methods of transportation.

Objective CON-2.A Work towards the conservation of energy resources in both existing and new buildings, utilities and infrastructure.

CON-2.A.1 Promote efficient use of energy and conservation of available resources in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.

CON-2.A.6 Encourage construction and building development practices that reduce resource expenditures throughout the lifecycle of a structure.

CON-2.A.7 Continue to require all City facilities and services to incorporate energy and resource conservation standards and practices and require that new municipal facilities be built within the LEED Gold standards or equivalent.

CON-2.A.9 Encourage waste management programs that promote waste reduction and recycling to minimize materials sent to landfills. Maintain robust programs encourage residents and businesses to reduce, reuse, recycle, and compost.

CON-2.A.10 Continue construction and demolition programs that require recycling and minimize waste in haul trips.

GOAL CON-4 Take steps to improve and maintain air quality for the benefit of the health and vitality of residents and the local economy. In alignment with State emissions reduction goals and in cooperation with the South Coast Air Quality Management District, pursue regional collaboration to reduce emissions from all sources.

Objective CON-4.A Pursue the prevention of the significant deterioration of local and regional air quality.

CON-4.A.1 Support regional policies and efforts that improve air quality to protect human and environmental health, and minimize disproportionate impacts on sensitive population groups.

CON-4.A.2 Encourage businesses, industries and residents to reduce the impact of direct, indirect, and cumulative impacts of stationary and non-stationary pollution sources.

CON-4.A.3 Require that sensitive uses such as schools, childcare centers, parks and playgrounds, housing, and community gathering places are protected from adverse impacts of emissions.

CON-4.A.4 Continue to participate in regional planning efforts with the Southern California Association of Governments, nearby jurisdictions, and the South Coast Air Quality Management District to meet or exceed air quality standards.

CON-4.A.5 Encourage compact development, infill development, and a mix of uses that are in proximity to transit, pedestrian, and bicycling infrastructures.

CON-4.A.6 Enhance bicycling and walking infrastructure, and support public bus service, pursuant to the Circulation Element's goals, objectives, and policies.

CON-4.A.7 Encourage installation of renewable energy devices for businesses and facilities and strive to reduce communitywide energy consumption.

CON-4.A.8 Develop long-term, community-wide strategies and programs that work at the local level to reduce greenhouse gases and Costa Mesa's "carbon footprint".

B. Monitored 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 Basin provided in the Revised Draft 2012 Air Quality Management Plan, prepared by SCAQMD, September 2012, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in North Coastal Orange County Air Monitoring Area (Source Receptor Area 18), which is located in Los Angeles and Orange Counties and covers the area south of the 101 freeway running along the coast to just north of Laguna Niguel. The nearest air monitoring station to the project site is the Costa Mesa - Mesa Verde Drive Monitoring Station (Costa Mesa Station). The Costa Mesa Station is located approximately 2.2 miles north of the project site at 2850 Mesa Verde Dr East, Costa Mesa. In order to get all necessary data, a second air monitoring station, Anaheim- Pampas Lane Monitoring Station (Anaheim Station), was used. The Anaheim Station is located approximately 13.02 miles north of the project site at 1630 W Pampas Lane, Anaheim. Table 5 presents the monitored pollutant levels from the Costa Mesa Station. However, it should be noted that due to the air monitoring station distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

The monitoring data presented in Table 5 shows that ozone and particulate matter (PM10 and PM2.5) are the air pollutants of primary concern in the project area, which are detailed below. Where state and federal emissions are exceeded, the values have been bolded.

Ozone

During the 2013 to 2015 monitoring period, the State 1-hour concentration standard for ozone has been exceeded one day each year at the Costa Mesa Station. The Federal 8-hour ozone standard was exceeded between two and six days each year over the past three years at the Costa Mesa 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_2, 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 the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Costa Mesa Station did not record an exceedance of the state or federal 1-hour or 8-hour CO standards for the last three years.

Nitrogen Dioxide
The Anaheim Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter
During the 2013 to 2015 monitoring period, the State 24-hour concentration standards for PM10 have been exceeded between one and two days each year at the Anaheim Station. Over the past three years the Federal 24-hour standard for PM10 has not been exceeded at the Costa Mesa Station.

The Federal 24 hour standard for PM2.5 was exceeded between one and four days each year at the Anaheim Station. There does not appear to be a noticeable trend for PM10 or PM2.5 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 (PM10 and PM2.5). 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 PM10 and PM2.5. 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.

Table 3

State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 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; (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; (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 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; (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/24-hour	(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_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 12 µg/m^3/annual	
Sulfates	25 µg/m^3/24-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; (f) property damage.
Lead	1.5 µg/m^3/30-day	1.5 µg/m^3/3- month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

[1] Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

Table 4

South Coast Air Basin Attainment Status

Pollutant	State Status[1]	National Status[2]
Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide	Attainment	Attainment/Unclassified
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM10	Nonattainment	Attainment (Maintenance)
PM2.5	Nonattainment	Nonattainment (Moderate)

[1] Source of State status: California Air Resources Board 2015.

[2] Source of National status: http://www3.epa.gov/airquality/greenbk/index.html and CARB 2015.

Table 5

Local Area Air Quality Levels from the Costa Mesa Air Monitoring Station[1]

Pollutant (Standard)[2]	Year		
	2013	2014	2015
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.095	0.096	0.099
Days > CAAQS (0.09 ppm)	**1**	**1**	**1**
Maximum 8-Hour Concentration (ppm)	0.083	0.079	0.079
Days > NAAQS (0.070 ppm)	**2**	**6**	**2**
Carbon Monoxide:			
Maximum 8-Hour Concentration (ppm)[4]	2	1.9	2.2
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[3]			
Maximum 1-Hour Concentration (ppb)	75.7	60.6	52.4
Days > NAAQS (0.25 ppm)	0	0	0
Inhalable Particulates (PM10):[3]			
Maximum 24-Hour Concentration (ug/m^3)	77.0	85.0	59.0
Days > NAAQS (150 ug/m^3)	0	0	0
Days > CAAQS (50 ug/m^3)	**1**	**2**	**2**
Annual Average (ug/m^3)	25.4	26.8	25.5
Ultra-Fine Particulates (PM2.5):[3]			
Maximum 24-Hour Concentration (ug/m^3)	47.7	46.5	53.8
Days > NAAQS (35 ug/m^3)	**1**	**4**	**3**
Annual Average (ug/m^3)	10.1	16.1	14.8
Annual > NAAQS (15 ug/m^3)	no	yes	yes
Annual > CAAQS (12 ug/m^3)	no	yes	yes

[1] Source: http://www.arb.ca.gov/adam/

Unless otherwise noted, data taken from the Costa Mesa - Mesa Verde Drive Monitoring Station

[2] CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

[3] Data taken from the Anaheim - Pampas Lane Monitoring Station

[4] Source: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year for SRA 18

* Insufficient data available to determine value.

V. AIR QUALITY STANDARDS

A. Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the 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, the 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 South Coast 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 6.

B. 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 South Coast 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. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant Threshold Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 5 above, from the most restrictive ambient air quality standards for these pollutants outlined in the Localized Significant Thresholds. Table 6 shows the Localized Significant Thresholds for NO_2, CO, and PM10 and PM2.5.

C. Toxic Air Contaminants

Construction

The construction equipment would emit DPM, which is a carcinogen. However, the DPM emissions are short-term in nature. Determination of risk from DPM is considered over a 30-year exposure period because carcinogenic risk is directly related to sustain exposure. In contrast, construction activities would be limited to a period of approximately 2 years. Thus, duration of construction activities would represent a fraction of the 30-year exposure period used as the basis for assessing the significance of carcinogenic risk exposure and, therefore, would not represent a source of sustained DPM emissions. Therefore, considering the short time frame, exposure to DPM is anticipated to be less than significant.

Operation

The project proposes a 22,860 square foot library, improvements to an existing park, and the renovation and expansion of an existing library into a 9,281 square foot Neighborhood Community Center. The project will not be a source of toxic air contaminants and sensitive receptors would not be exposed to toxic sources of air pollution.

D. 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.

E. Greenhouse Gases

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[2].

1. Regional - South Coast Air Quality Management District

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

[2] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

SCAQMD Regulation XXVII, Climate Change. SCAQMD Regulation XXVII currently includes three rules:

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

SCAQMD Threshold Development. On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

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

emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:

- All land use types: 3,000 MTCO2e per year
- Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e per year.
- Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 MTCO2e per year.

- Tier 4 has the following options:
  - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
  - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
  - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/SP/year for plans.
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/yr). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

Therefore, the SCAQMD's GHG emission thresholds are applicable to the proposed project.

2. Local - City of Costa Mesa

The City of Costa Mesa does not currently have a Climate Action Plan.

Thresholds of Significance for this Project. The project's emissions have been compared to the SCAQMD draft screening threshold of 3,000 MTCO2e per year and the goals of the CARB Scoping Plan.

Table 6

SCAQMD Air Quality Significance Thresholds[1]

Mass Daily Thresholds		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3

Toxic Air Contaminants, Odor and GHG Thresholds	
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
GHG	10,000 MT/yr CO2e for industrial facilities

Ambient Air Quality Standards for Criteria Pollutants	
Pollutant	Significance Threshold
NO2 -1-hour average	0.18 ppm (338 µg/m^3)
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3

[1] Source: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2

VI. SHORT-TERM CONSTRUCTION-RELATED AIR QUALITY IMPACTS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. The proposed project is expected to occur in two phases. The construction activities for Phase 1 of the proposed project are anticipated to include: demolition of an approximately 22,750 square foot building; grading of approximately 3.84 acres; construction of a 22,860 square foot (11,584 square foot building footprint) library; paving of a 14,307 square foot parking lot; approximately 79,137 square feet of walkways and plazas and 61,950 square feet of landscaping and open space; and application of architectural coatings. The construction activities for Phase 2 of the proposed project are anticipated to include: grading of approximately 0.86 acres; construction of an approximately 541 square foot expansion of the existing 8,740 square foot library (expansion and renovations to repurpose the library into a 9,281 square foot Neighborhood Community Center); approximately 28,553 square feet of walkways and plazas and 7,599 square feet of landscaping and open space; paving and application of architectural coatings. Phase 1 is estimated to begin July 2017 and be completed by December 2018 and Phase 2 would begin February 2019 and be completed by February 2020.

Off-site improvements would occur within Phase 1 and include paving of approximately 18,415 square feet and landscaping of approximately 1,365 square feet. Improvements include approximately 580 linear feet along Park Avenue (including the addition of 27 parking spaces) and 145 linear feet along Anaheim Avenue.

A. Construction-Related Regional Impacts

The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

1. Construction-Related Criteria Pollutants Analysis

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants.

Methodology

Typical emission rates from construction activities were obtained from CalEEMod Version 2016.3.1 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the western portion of San Bernardino County for construction-related employee vehicle trips and the OFFROAD2014 computer program to calculate emission rates for heavy truck operations. EMFAC2014 and OFFROAD2014 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. Using CalEEMod, the peak daily air pollutant emissions were calculated and presented below. These emissions represent the highest level of emissions for each

of the construction phases in terms of air pollutant emissions. The construction emissions printouts from CalEEMod are provided in Appendix B.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent, stabilizing ground cover on finished sites. In addition, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. Based on the size of the Project area (approximately 4.57 acres) a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rule 403 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 is required.

The phases of the construction activities which have been analyzed below for Phase 1 and Phase 2 are: 1) demolition (for phase 1 only), 2) grading, 3) building construction, 4) paving, and 5) application of architectural coatings. Appendix B includes details on construction modeling.

The application of architectural coatings would occur after the completion of the construction phase. Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings applied after January 1, 2014 will be limited to an average of 50 grams per liter or less.

Project Impacts

The construction-related criteria pollutant emissions for each construction phase for Phases 1 and 2 are shown below in Tables 7 and 8, respectively. Tables 7 and 8 show that none of the analyzed criteria pollutants would exceed the regional emissions thresholds during construction of either Phase 1 or Phase 2. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

B. <u>Construction-Related Local Impacts</u>

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 South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from:

construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

1. Local Air Quality Impacts from Construction

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

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

The CalEEMod output sheets included in Appendix B show the equipment used for this analysis.

As shown in Table 9, the maximum number of acres disturbed in a day would be three (3) acres during grading of Phase 1.

The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology, prepared by SCAQMD, revised July 2008. 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. The emission thresholds were calculated based on the Coastal source receptor area (SRA 18) and a disturbance of three acres per day. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25 meter thresholds. The nearest sensitive receptors are the existing residential uses located approximately 47 feet from the western project boundary; therefore, the SCAQMD Look-up Tables for 25 meters was used. Table 10 shows the on-site emissions from the CalEEMod model for the different construction phases and the emissions thresholds.

The data provided in Table 10 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

2. 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 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 30-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., 30 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

3. Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are of short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

Table 7

Construction-Related Regional Pollutant Emissions for Phase 1[1]

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Demolition						
On-Site[2]	4.10	42.75	23.01	0.04	2.63	2.11
Off-Site[3]	0.14	1.84	1.05	0.01	0.27	0.08
Subtotal	**4.24**	**44.58**	**24.06**	**0.04**	**2.90**	**2.19**
Grading						
On-Site[2]	3.07	33.89	17.10	0.03	4.19	2.93
Off-Site[3]	0.09	0.25	0.70	0.00	0.18	0.05
Subtotal	**3.16**	**34.14**	**17.81**	**0.03**	**4.37**	**2.98**
Building Construction						
On-Site[2]	3.11	26.55	18.18	0.03	1.79	1.68
Off-Site[3]	0.56	3.99	4.33	0.02	1.06	0.31
Subtotal	**3.67**	**30.54**	**22.51**	**0.04**	**2.85**	**1.99**
Paving						
On-Site[2]	1.51	14.52	12.43	0.02	0.84	0.77
Off-Site[3]	0.10	0.07	0.79	0.00	0.23	0.06
Subtotal	**1.61**	**14.59**	**13.22**	**0.02**	**1.06**	**0.83**
Architectural Coating						
On-Site[2]	25.81	2.01	1.85	0.00	0.15	0.15
Off-Site[3]	0.08	0.05	0.59	0.00	0.17	0.05
Subtotal	**25.89**	**2.06**	**2.44**	**0.00**	**0.32**	**0.20**
Total of Overlapping Phases[4]	**31.17**	**47.18**	**38.17**	**0.07**	**4.23**	**3.02**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

Off-Site Improvements						
Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10*	PM2.5*
Site Preparation						
On-Site[2]	0.85	10.51	4.35	0.01	0.68	0.46
Off-Site[3]	0.03	0.02	0.22	0.00	0.06	0.02
Total	**4.90**	**51.82**	**40.19**	**0.04**	**9.95**	**6.45**
Paving						
On-Site[2]	1.27	9.98	7.34	0.01	0.61	0.56
Off-Site[3]	0.10	0.07	0.79	0.00	0.20	0.05
Total	**2.81**	**20.35**	**15.39**	**0.02**	**1.26**	**1.08**
Total of overlapping phases[5]	**33.98**	**67.54**	**53.56**	**0.09**	**5.50**	**4.10**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1. Phase 1

[2] On-site emissions from equipment operated on-site that is not operated on public roads.

[3] Off-site emissions from equipment operated on public roads.

[4] Construction, architectural coating, and paving phases may overlap.

[5] Construction of off-site improvements will occur after grading and may overlap with construction phases of the proposed project.

Table 8

Construction-Related Regional Pollutant Emissions for Phase 2[1]

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	0.95	8.60	7.69	0.01	0.92	0.68
Off-Site[3]	0.04	0.03	0.36	0.00	0.11	0.03
Subtotal	**0.99**	**8.63**	**8.05**	**0.01**	**1.03**	**0.71**
Building Construction						
On-Site[2]	0.96	9.82	7.54	0.01	0.61	0.56
Off-Site[3]	0.08	0.72	0.72	0.00	0.21	0.06
Subtotal	**1.04**	**10.54**	**8.26**	**0.01**	**0.82**	**0.62**
Paving						
On-Site[2]	0.77	7.23	7.11	0.01	0.40	0.37
Off-Site[3]	0.07	0.04	0.59	0.00	0.20	0.05
Subtotal	**0.84**	**7.27**	**7.70**	**0.01**	**0.60**	**0.42**
Architectural Coating						
On-Site[2]	3.26	1.68	1.83	0.00	0.11	0.11
Off-Site[3]	0.01	0.01	0.10	0.00	0.03	0.01
Subtotal	**3.27**	**1.69**	**1.93**	**0.00**	**0.14**	**0.12**
Total of Overlapping Phases[4]	**5.15**	**19.50**	**17.89**	**0.03**	**1.56**	**1.16**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1. Phase 2.

[2] On-site emissions from equipment operated on-site that is not operated on public roads.

[3] Off-site emissions from equipment operated on public roads.

[4] Construction, architectural coating, and paving phases may overlap.

Table 9

Maximum Number of Acres Disturbed Per Day for Phases 1 and 2

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Phase 1				
Demolition	Excavators	3	0.5	1.5
	Rubber Tired Dozers	2	0.5	1
Total Per Phase				**2.5**
Grading	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
	Excavators	1	0.5	0.5
	Tractors/Loaders/Backhoes	3	0.5	1.5
Total Per Phase		-	-	**3**
Phase 2				
Grading	Rubber Tired Dozers	1	0.5	0.5
	Tractors/Loaders/Backhoes	2	0.5	1
Total per phase		-	-	**1.5**

Table 10

Local Construction Emissions at the Nearest Receptor[1] for Phases 1 and 2

Phase 1	On-Site Pollutant Emissions (pounds/day)			
Activity	NOx	CO	PM10	PM2.5
Demolition	42.75	23.01	2.63	2.11
Grading	33.89	17.10	4.19	2.93
Building Construction	26.55	18.18	1.79	1.68
Paving	14.52	12.43	0.84	0.77
Architectural Coating	2.01	1.85	0.15	0.15
SCAQMD Threshold for 25 meters (82 feet)[2]	**131**	**962**	**7**	**5**
Exceeds Threshold?	No	No	No	No

Phase 2	On-Site Pollutant Emissions (pounds/day)			
Activity	NOx	CO	PM10	PM2.5
Grading	8.60	7.69	0.92	0.68
Building Construction	9.82	7.54	0.61	0.56
Paving	7.23	7.11	0.40	0.37
Architectural Coating	1.68	1.83	0.11	0.11
SCAQMD Threshold for 25 meters (82 feet)[2]	**92**	**647**	**4**	**3**
Exceeds Threshold?	No	No	No	No

[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres for Phase 1 and 1 acre for Phase 2 in SRA 18 North Coastal Orange County.

[2] The estimated distance from the proposed construction activities to the nearest sensitive receptor (residences to the west) of the project site is ~47 feet (~14 meters) .

VII. LONG-TERM OPERATIONAL AIR QUALITY IMPACTS

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.

A. Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

1. Operations-Related Criteria Pollutant Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model. The operating emissions were based on the year 2019 for Phase 1 and 2020 for Phase 2, which are the anticipated opening years for the proposed project. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobiles Sources
Mobile sources include emissions from the additional vehicle miles generated from the proposed project. As no traffic study was available, CalEEMod defaults for library and general office uses (closest representative use for a Neighborhood Community Center in CalEEMod) were used to estimate emissions from the vehicle trips associated with the proposed project (see Appendix B).

Area Sources
Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source parameters.

Energy Usage
Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Project Impacts
The highest emissions from either summer or winter criteria pollutant emissions created from the proposed project's long-term operations have been calculated for Phase 1 and Phase 2 and are summarized below in Table 11. Table 11 also includes the total emissions for Phases 1 and 2 combined. The results show that none of the phases individually or combined would exceed SCAQMD regional thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Furthermore, Table 12 shows that when maximum daily construction emissions (from the highest-emitting construction phases of Phase 2) are added to the unmitigated operational emissions of the completed Phase 1, the total emissions still meet SCAQMD thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

2. Cumulative Regional Air Quality Impacts

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 well out of 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 for both ozone and PM10 particulate matter. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. With respect to long-term emissions, this project would create a less than significant cumulative impact.

B. 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 South Coast 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 on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations, and odor impacts.

1. Local CO Emission 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 which were presented in above in Section V.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section V, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" typically occur at high traffic volume intersections with a Level of Service E or worse.

The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. The potential traffic generated by the project did not even meet the minimum threshold to require a traffic study and no traffic study was provided. Therefore, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

2. Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site 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 nearest sensitive receptors that may be impacted by the proposed project are the residential use directly adjacent to the west and east of the project site.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site; such as industrial warehouse/transfer facilities. The proposed project does not include such uses. During operation, on-site emissions would be negligible and would primarily consist of the intermittent on-site travel of motor vehicles. Therefore, due the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

3. Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from diesel truck emissions and 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.

Table 11

Regional Operational Pollutant Emissions for Phases 1 and 2[1]

Phase 1 Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	0.58	0.00	0.02	0.00	0.00	0.00
Energy Usage[3]	0.01	0.13	0.11	0.00	0.01	0.01
Mobile Sources[4]	1.08	4.24	12.89	0.04	3.53	0.98
Total Emissions	**1.67**	**4.37**	**13.02**	**0.04**	**3.54**	**0.99**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Phase 2 Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	0.03	0.00	0.00	0.00	0.00	0.00
Energy Usage[3]	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Sources[4]	0.01	0.04	0.13	0.00	0.04	0.01
Total Emissions	**0.04**	**0.04**	**0.14**	**0.00**	**0.04**	**0.01**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Total for Phase 1 and Phase 2	**1.71**	**4.41**	**13.15**	**0.04**	**3.59**	**1.00**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1. Phase 1, and Phase 2

[2] Area sources consist of emissions from consumer products, architectural coatings, and landscaping equipment.

[3] Energy usage consists of emissions from generation of electricity and on-site natural gas usage.

[4] Mobile sources consist of emissions from vehicles and road dust.

Table 12

Overlapping Regional Construction and Operational Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Total for Phase 1 plus construction Phase 2	6.82	23.88	30.91	0.07	5.10	2.15
SCAQMD Operational Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

[1] Overlapping emissions calculated from the highest emissions levels during construction and the active operational phase(s).

VIII. GLOBAL CLIMATE CHANGE ANALYSIS

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions, the project impacts and a consistency analysis of the proposed project with any applicable GHG reduction plans, policies or regulations.

A. Methodology

The CalEEMod Version 2016.3.1 was used to calculate the GHG emissions from the proposed project. As stated previously, the City of Costa Mesa does not currently have a Climate Action Plan; therefore, the project has been compared to the goals of the CARB Scoping Plan. Based on the CARB Scoping Plan, reducing GHG emissions to 1990 levels by 2020 means cutting approximately 30 percent from business-as-usual (BAU) emissions levels, or about 15 percent from year 2008 levels.

The project's year 2019 for Phase 1 and 2020 for Phase 2 (opening years) unmitigated emissions were calculated and compared to the SCAQMD tier 3 SCAQMD draft screening threshold of 3,000 metric tons CO2e per year for all land uses and the results for both Phase 1 and Phase 2 are shown in Table 13.

1. Area Sources

   Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source parameters.

2. Energy Usage

   Energy usage includes emissions from the generation of electricity and natural gas used on-site. The energy usage was based on the CalEEMod defaults. No changes were made to the default energy usage parameters.

3. Mobile Sources

   Mobile sources were analyzed in the manner described in Section VII above. CalEEMod defaults were used in the analysis.

4. Waste

   Waste includes the GHG emissions generated from 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 CalEEMod default values were used in the analysis.

5. Water

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 CalEEMod default values were used in the analysis.

6. Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30 year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod and detailed above in Section VI.

B. Project Greenhouse Gas Emissions

The GHG emissions have been calculated based on the parameters described above. A summary of the results are shown below in Table 13 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 13 shows that Phase 1 of the proposed project would generate unmitigated GHG emissions in the amount of 733.07 MTCO2e per year, while the unmitigated GHG emissions for Phase 2 would be 29.20 MTCO2e per year. Therefore, the project's total unmitigated GHG emissions for both Phase 1 and Phase 2 would be 762.28 MTCO2e per year.

According to the thresholds of significance established above in Section V above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations would exceed the tier 3 SCAQMD draft screening threshold of 3,000 metric tons CO2e per year for all land uses. As the project's GHG emissions meet the SCAQMD screening threshold, the impacts from GHGs are considered to be less than significant.

In addition, the proposed library building is to be LEED Gold certified and the new Neighborhood Community Center is to be LEED Silver certified, which will further reduce project-related greenhouse emissions. Appendix C includes further details regarding the proposed project's LEED certification.

C. Greenhouse Gas Plan Consistency

The proposed project would have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As stated previously, the City of Costa Mesa does not currently have a Climate Action Plan; therefore, the project and its GHG emissions have been compared to the goals of the CARB Scoping Plan.

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence

on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

Project consistency with applicable strategies in the Plan is assessed in Table 14. As shown in Table 14, the project is consistent with the applicable strategies. Furthermore, as the project's unmitigated emissions fall well below the tier 3 SCAQMD draft screening threshold of 3,000 metric tons CO2e per year for all land uses, the project will comply with applicable Green Building Standards and City of Costa Mesa's policies regarding sustainability (as dictated by the City's General Plan), and will achieve LEED certification, further analysis is not warranted.

Therefore, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Table 13

Project-Related Greenhouse Gas Emissions for Phases 1 and 2[1]

Phase 1 Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	0.00	0.00	0.00	0.00	0.00
Energy Usage[3]	0.00	92.38	92.38	0.00	0.00	92.77
Mobile Sources[4]	0.00	614.25	614.25	0.03	0.00	614.96
Waste[5]	2.16	0.00	2.16	0.13	0.00	5.36
Water[6]	0.12	3.51	3.62	0.01	0.00	4.02
Construction[7]	0.00	15.89	15.89	0.00	0.00	15.96
Total Emissions	2.28	726.03	728.31	0.17	0.00	**733.07**
SCAQMD Screening Threshold						**3,000**
Exceeds Threshold?						**No**

Phase 2 Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	0.00	0.00	0.00	0.00	0.00
Energy Usage[3]	0.00	6.82	6.82	0.00	0.00	6.85
Mobile Sources[4]	0.00	14.61	14.61	0.00	0.00	14.63
Waste[5]	0.26	0.00	0.26	0.02	0.00	0.63
Water[6]	0.08	1.52	1.59	0.01	0.00	1.85
Construction[7]	0.00	5.21	5.21	0.00	0.00	5.25
Total Emissions	0.33	28.16	28.49	0.03	0.00	**29.20**
SCAQMD Screening Threshold						**3,000**
Exceeds Threshold?						**No**

Total for Phase 1 and Phase 2	**762.28**
SCAQMD Screening Threshold	**3,000**
Exceeds Threshold?	**No**

[1] Source: CalEEMod Version 2016.3.1. Phase 1, and Phase 2

[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

[3] Energy usage consist of GHG emissions from electricity and natural gas usage.

[4] Mobile sources consist of GHG emissions from vehicles.

[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

[7] Construction GHG emissions based on a 30 year amortization rate. Phase 1 includes off-site improvements.

Table 14

CARB Scoping Plan Measure Comparison[1]

Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	Consistent. The proposed Library is to be LEED Gold certified and the proposed Neighborhood Community Center is to be LEED Silver certified. The project will be compliant with the current Title 24 standards.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	Consistent. These are CARB enforced standards; vehicles that access the project that are required to comply with the standards will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	Consistent. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that will become mandatory in the 2010 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The project will be subject to these mandatory standards. Further, The proposed Library is to be LEED Gold certified and the proposed Neighborhood Community Center is to be LEED Silver certified.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	Consistent. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the project that are required to comply with the measures will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	Consistent. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply, with the 50 percent reduction required in AB 939.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	Consistent. The project will comply with all applicable City ordinances.

[1] Source: CARB Scoping Plan (2008)

IX. AIR QUALITY COMPLIANCE

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (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 General Plan 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.

(2) Whether the project will exceed the assumptions in the AQMP in 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

A. Criterion 1 - Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

B. 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 ensure that the analyses conducted for the proposed project are based on the same

forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) 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 Redlands General Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Public/Institutional in the General Plan Land Use Element. The proposed project is consistent with the current land use designation and would not require a General Plan Amendment or zone change. Therefore, the proposed project 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.

X. MITIGATION MEASURES

A. Construction Measures

The project is required to comply with SCAQMD Rule 403 - Fugitive Dust.

No construction mitigation is required.

B. Operational Measures

No operational mitigation is required.

XI. REFERENCES

California Air Resources Board

2008 Resolution 08-43

2008 Airborne Toxic Control Measure for in-use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, Section 2477 of Division 3, Chapter 9, Title 13, California Code of Regulations

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality. Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2016 Historical Air Quality, Top 4 Summary

City of Costa Mesa

2016 2015-2035 General Plan. June.

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2009 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC).

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District

1993 CEQA Air Quality Handbook

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2012 Final 2012 Air Quality Management Plan

2016 Draft 2016 Air Quality Management Plan

2017 Historical Data by Year. 2013, 2014 and 2015 Air Quality Data Tables. Source: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year

Southern California Association of Governments

2012 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy

U.S. Environmental Protection Agency (EPA)

2017 Understanding Global Warming Potentials (Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

APPENDICES

Appendix A – Glossary of Terms

Appendix B – CalEEMod Model Daily Emissions Printouts

Appendix C – CalEEMod Model Annual Emissions Printouts and LEED Information

APPENDIX A

Glossary of Terms

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District

SF	Square Feet
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
T6	Heavy Duty Trucks from EMFAC 2007 classifications
T7	Heavy-Heavy Duty Trucks from EMFAC 2007 classifications
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CalEEMod Model Daily Emissions Printouts

6819 Lions Park - Phase 1

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	11.58	1000sqft	0.27	22,860.00	0
Other Non-Asphalt Surfaces	141.09	1000sqft	3.24	141,087.00	0
Parking Lot	14.31	1000sqft	0.33	14,307.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - .

Land Use - Phase 1- 22,860 sf library (11,584 sf building footprint), 79,137 sf of walkways & plazas, 61,950 sf of landscaping & open space, and a 14,307 sf parking lot.

Construction Phase - Construction to start July 2017 and end December 2018.

Demolition - Existing ~22,750 sf Neighborhood Community Center to be demolished.

Grading - Per developer, fill 3,997 cubic feet - cut 994 cubic feet = 3,033 cubic feet fill. 3,033 cubic feet = 111.2 cubic yards fill.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Lions Park is located in the downtown portion of the City of Costa Mesa. OCTA Route 43 stop Park-19th is across Park Avenue (~53 feet or ~0.01 miles from project site).

Water Mitigation - Per Green Building Standards.

Waste Mitigation - AB 939 requires each jurisdiction in California to divert at least 50 percent of its waste away from landfills.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	230.00	325.00
tblConstructionPhase	NumDays	8.00	25.00
tblConstructionPhase	NumDays	18.00	10.00
tblGrading	AcresOfGrading	12.50	4.00
tblGrading	MaterialImported	0.00	111.20
tblLandUse	BuildingSpaceSquareFeet	11,580.00	22,860.00
tblLandUse	BuildingSpaceSquareFeet	141,090.00	141,087.00
tblLandUse	BuildingSpaceSquareFeet	14,310.00	14,307.00
tblLandUse	LandUseSquareFeet	11,580.00	22,860.00
tblLandUse	LandUseSquareFeet	141,090.00	141,087.00
tblLandUse	LandUseSquareFeet	14,310.00	14,307.00
tblProjectCharacteristics	OperationalYear	2018	2019

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.2295	44.5535	24.0627	0.0447	6.3697	2.2045	8.1493	3.3758	2.0530	5.0131	0.0000	4,555.7081	4,555.7081	1.1257	0.0000	4,583.8500
2018	25.8787	27.0779	21.4547	0.0430	1.0236	1.5310	2.5546	0.2757	1.4395	1.7152	0.0000	4,283.9941	4,283.9941	0.7341	0.0000	4,302.3474
Maximum	**25.8787**	**44.5535**	**24.0627**	**0.0447**	**6.3697**	**2.2045**	**8.1493**	**3.3758**	**2.0530**	**5.0131**	**0.0000**	**4,555.7081**	**4,555.7081**	**1.1257**	**0.0000**	**4,583.8500**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.2295	44.5535	24.0627	0.0447	2.5924	2.2045	4.3720	1.3453	2.0530	2.9826	0.0000	4,555.7081	4,555.7081	1.1257	0.0000	4,583.8500
2018	25.8787	27.0779	21.4547	0.0430	1.0236	1.5310	2.5546	0.2757	1.4395	1.7152	0.0000	4,283.9941	4,283.9941	0.7341	0.0000	4,302.3474
Maximum	**25.8787**	**44.5535**	**24.0627**	**0.0447**	**2.5924**	**2.2045**	**4.3720**	**1.3453**	**2.0530**	**2.9826**	**0.0000**	**4,555.7081**	**4,555.7081**	**1.1257**	**0.0000**	**4,583.8500**

6819 Lions Park - Phase 1 - Orange County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.09**	**0.00**	**35.29**	**55.61**	**0.00**	**30.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Energy	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Mobile	1.0784	4.1244	12.8903	0.0423	3.4873	0.0471	3.5344	0.9325	0.0443	0.9768		4,288.3043	4,288.3043	0.1925		4,293.1172
Total	**1.6718**	**4.2533**	**13.0157**	**0.0431**	**3.4873**	**0.0569**	**3.5443**	**0.9325**	**0.0541**	**0.9867**		**4,442.8530**	**4,442.8530**	**0.1956**	**2.8300e-003**	**4,448.5866**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Energy	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Mobile	0.9252	3.1166	8.7365	0.0260	2.0710	0.0296	2.1005	0.5538	0.0278	0.5816		2,632.0320	2,632.0320	0.1285		2,635.2442
Total	**1.5185**	**3.2455**	**8.8618**	**0.0267**	**2.0710**	**0.0394**	**2.1104**	**0.5538**	**0.0377**	**0.5915**		**2,786.5807**	**2,786.5807**	**0.1316**	**2.8300e-003**	**2,790.7137**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**9.16**	**23.69**	**31.91**	**37.96**	**40.62**	**30.71**	**40.46**	**40.61**	**30.41**	**40.06**	**0.00**	**37.28**	**37.28**	**32.74**	**0.00**	**37.27**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2017	7/28/2017	5	20	
2	Grading	Grading	7/29/2017	9/1/2017	5	25	
3	Building Construction	Building Construction	9/2/2017	11/30/2018	5	325	
4	Paving	Paving	12/1/2018	12/14/2018	5	10	
5	Architectural Coating	Architectural Coating	12/15/2018	12/28/2018	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 3.57

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,290; Non-Residential Outdoor: 11,430; Striped Parking Area: 9,324 (Architectural Coating – sqft)

OffRoad Equipment

6819 Lions Park - Phase 1 - Orange County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	6	15.00	0.00	103.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	14.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	75.00	29.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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										lb/day					
Fugitive Dust					1.1197	0.0000	1.1197	0.1695	0.0000	0.1695			0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425		3,924.2833	3,924.2833	1.0730		3,951.1070
Total	**4.1031**	**42.7475**	**23.0122**	**0.0388**	**1.1197**	**2.1935**	**3.3132**	**0.1695**	**2.0425**	**2.2120**		**3,924.2833**	**3,924.2833**	**1.0730**		**3,951.1070**

3.2 Demolition - 2017

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	0.0520	1.7539	0.3887	4.1000e-003	0.0897	9.8900e-003	0.0996	0.0246	9.4600e-003	0.0340		452.7184	452.7184	0.0475		453.9067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0744	0.0521	0.6618	1.7900e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		178.7065	178.7065	5.2000e-003		178.8364
Total	**0.1264**	**1.8060**	**1.0505**	**5.8900e-003**	**0.2574**	**0.0110**	**0.2684**	**0.0690**	**0.0105**	**0.0795**		**631.4248**	**631.4248**	**0.0527**		**632.7430**

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					0.4367	0.0000	0.4367	0.0661	0.0000	0.0661			0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425	0.0000	3,924.2833	3,924.2833	1.0730		3,951.1070
Total	**4.1031**	**42.7475**	**23.0122**	**0.0388**	**0.4367**	**2.1935**	**2.6301**	**0.0661**	**2.0425**	**2.1086**	**0.0000**	**3,924.2833**	**3,924.2833**	**1.0730**		**3,951.1070**

3.2 Demolition - 2017

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	0.0520	1.7539	0.3887	4.1000e-003	0.0897	9.8900e-003	0.0996	0.0246	9.4600e-003	0.0340		452.7184	452.7184	0.0475		453.9067
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0744	0.0521	0.6618	1.7900e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		178.7065	178.7065	5.2000e-003		178.8364
Total	**0.1264**	**1.8060**	**1.0505**	**5.8900e-003**	**0.2574**	**0.0110**	**0.2684**	**0.0690**	**0.0105**	**0.0795**		**631.4248**	**631.4248**	**0.0527**		**632.7430**

3.3 Grading - 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										lb/day					
Fugitive Dust					6.1923	0.0000	6.1923	3.3286	0.0000	3.3286			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352		3,037.9107	3,037.9107	0.9308		3,061.1809
Total	**3.0705**	**33.8868**	**17.1042**	**0.0297**	**6.1923**	**1.7774**	**7.9697**	**3.3286**	**1.6352**	**4.9639**		**3,037.9107**	**3,037.9107**	**0.9308**		**3,061.1809**

3.3 Grading - 2017

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	5.6500e-003	0.1907	0.0423	4.5000e-004	9.7500e-003	1.0800e-003	0.0108	2.6700e-003	1.0300e-003	3.7000e-003		49.2276	49.2276	5.1700e-003		49.3568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0744	0.0521	0.6618	1.7900e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		178.7065	178.7065	5.2000e-003		178.8364
Total	**0.0801**	**0.2428**	**0.7041**	**2.2400e-003**	**0.1774**	**2.2000e-003**	**0.1796**	**0.0471**	**2.0600e-003**	**0.0492**		**227.9341**	**227.9341**	**0.0104**		**228.1932**

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					2.4150	0.0000	2.4150	1.2982	0.0000	1.2982			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352	0.0000	3,037.9107	3,037.9107	0.9308		3,061.1809
Total	**3.0705**	**33.8868**	**17.1042**	**0.0297**	**2.4150**	**1.7774**	**4.1924**	**1.2982**	**1.6352**	**2.9334**	**0.0000**	**3,037.9107**	**3,037.9107**	**0.9308**		**3,061.1809**

3.3 Grading - 2017

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	5.6500e-003	0.1907	0.0423	4.5000e-004	9.7500e-003	1.0800e-003	0.0108	2.6700e-003	1.0300e-003	3.7000e-003		49.2276	49.2276	5.1700e-003		49.3568
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0744	0.0521	0.6618	1.7900e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		178.7065	178.7065	5.2000e-003		178.8364
Total	**0.0801**	**0.2428**	**0.7041**	**2.2400e-003**	**0.1774**	**2.2000e-003**	**0.1796**	**0.0471**	**2.0600e-003**	**0.0492**		**227.9341**	**227.9341**	**0.0104**		**228.1932**

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										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**		**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1340	3.6898	1.0203	7.3800e-003	0.1853	0.0322	0.2175	0.0533	0.0308	0.0841		798.9297	798.9297	0.0720		800.7297
Worker	0.3721	0.2604	3.3092	8.9700e-003	0.8383	5.5800e-003	0.8439	0.2223	5.1400e-003	0.2275		893.5323	893.5323	0.0260		894.1818
Total	**0.5061**	**3.9501**	**4.3294**	**0.0164**	**1.0236**	**0.0377**	**1.0614**	**0.2757**	**0.0359**	**0.3116**		**1,692.4620**	**1,692.4620**	**0.0980**		**1,694.9115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**	**0.0000**	**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1340	3.6898	1.0203	7.3800e-003	0.1853	0.0322	0.2175	0.0533	0.0308	0.0841		798.9297	798.9297	0.0720		800.7297
Worker	0.3721	0.2604	3.3092	8.9700e-003	0.8383	5.5800e-003	0.8439	0.2223	5.1400e-003	0.2275		893.5323	893.5323	0.0260		894.1818
Total	**0.5061**	**3.9501**	**4.3294**	**0.0164**	**1.0236**	**0.0377**	**1.0614**	**0.2757**	**0.0359**	**0.3116**		**1,692.4620**	**1,692.4620**	**0.0980**		**1,694.9115**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1175	3.4595	0.9282	7.3300e-003	0.1853	0.0256	0.2109	0.0533	0.0245	0.0778		795.5522	795.5522	0.0690		797.2781
Worker	0.3358	0.2283	2.9460	8.7100e-003	0.8383	5.5400e-003	0.8439	0.2223	5.1000e-003	0.2274		867.5067	867.5067	0.0230		868.0810
Total	**0.4533**	**3.6878**	**3.8742**	**0.0160**	**1.0236**	**0.0311**	**1.0548**	**0.2757**	**0.0296**	**0.3052**		**1,663.0589**	**1,663.0589**	**0.0920**		**1,665.3592**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1175	3.4595	0.9282	7.3300e-003	0.1853	0.0256	0.2109	0.0533	0.0245	0.0778		795.5522	795.5522	0.0690		797.2781
Worker	0.3358	0.2283	2.9460	8.7100e-003	0.8383	5.5400e-003	0.8439	0.2223	5.1000e-003	0.2274		867.5067	867.5067	0.0230		868.0810
Total	**0.4533**	**3.6878**	**3.8742**	**0.0160**	**1.0236**	**0.0311**	**1.0548**	**0.2757**	**0.0296**	**0.3052**		**1,663.0589**	**1,663.0589**	**0.0920**		**1,665.3592**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718		1,872.5505	1,872.5505	0.5672		1,886.7312
Paving	0.0865					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5104**	**14.5184**	**12.4333**	**0.0189**		**0.8370**	**0.8370**		**0.7718**	**0.7718**		**1,872.5505**	**1,872.5505**	**0.5672**		**1,886.7312**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0896	0.0609	0.7856	2.3200e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		231.3351	231.3351	6.1300e-003		231.4883
Total	**0.0896**	**0.0609**	**0.7856**	**2.3200e-003**	**0.2236**	**1.4800e-003**	**0.2250**	**0.0593**	**1.3600e-003**	**0.0607**		**231.3351**	**231.3351**	**6.1300e-003**		**231.4883**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718	0.0000	1,872.5505	1,872.5505	0.5672		1,886.7312
Paving	0.0865					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5104**	**14.5184**	**12.4333**	**0.0189**		**0.8370**	**0.8370**		**0.7718**	**0.7718**	**0.0000**	**1,872.5505**	**1,872.5505**	**0.5672**		**1,886.7312**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0896	0.0609	0.7856	2.3200e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		231.3351	231.3351	6.1300e-003		231.4883
Total	**0.0896**	**0.0609**	**0.7856**	**2.3200e-003**	**0.2236**	**1.4800e-003**	**0.2250**	**0.0593**	**1.3600e-003**	**0.0607**		**231.3351**	**231.3351**	**6.1300e-003**		**231.4883**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.5129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**25.8115**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0457	0.5892	1.7400e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		173.5014	173.5014	4.5900e-003		173.6162
Total	**0.0672**	**0.0457**	**0.5892**	**1.7400e-003**	**0.1677**	**1.1100e-003**	**0.1688**	**0.0445**	**1.0200e-003**	**0.0455**		**173.5014**	**173.5014**	**4.5900e-003**		**173.6162**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.5129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**25.8115**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0672	0.0457	0.5892	1.7400e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		173.5014	173.5014	4.5900e-003		173.6162
Total	**0.0672**	**0.0457**	**0.5892**	**1.7400e-003**	**0.1677**	**1.1100e-003**	**0.1688**	**0.0445**	**1.0200e-003**	**0.0455**		**173.5014**	**173.5014**	**4.5900e-003**		**173.6162**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9252	3.1166	8.7365	0.0260	2.0710	0.0296	2.1005	0.5538	0.0278	0.5816		2,632.0320	2,632.0320	0.1285		2,635.2442
Unmitigated	1.0784	4.1244	12.8903	0.0423	3.4873	0.0471	3.5344	0.9325	0.0443	0.9768		4,288.3043	4,288.3043	0.1925		4,293.1172

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	651.26	539.05	295.17	1,475,325	876,120
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	651.26	539.05	295.17	1,475,325	876,120

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041
Other Non-Asphalt Surfaces	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041
Parking Lot	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
NaturalGas Unmitigated	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304

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					
Library	1313.35	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0142**	**0.1288**	**0.1082**	**7.7000e-004**		**9.7900e-003**	**9.7900e-003**		**9.7900e-003**	**9.7900e-003**		**154.5122**	**154.5122**	**2.9600e-003**	**2.8300e-003**	**155.4304**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	1.31335	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0142**	**0.1288**	**0.1082**	**7.7000e-004**		**9.7900e-003**	**9.7900e-003**		**9.7900e-003**	**9.7900e-003**		**154.5122**	**154.5122**	**2.9600e-003**	**2.8300e-003**	**155.4304**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Unmitigated	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390

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	0.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6300e-003	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Total	**0.5792**	**1.6000e-004**	**0.0172**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0365**	**0.0365**	**1.0000e-004**		**0.0390**

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	0.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6300e-003	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Total	**0.5792**	**1.6000e-004**	**0.0172**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0365**	**0.0365**	**1.0000e-004**		**0.0390**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

6819 Lions Park - Phase 1

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	11.58	1000sqft	0.27	22,860.00	0
Other Non-Asphalt Surfaces	141.09	1000sqft	3.24	141,087.00	0
Parking Lot	14.31	1000sqft	0.33	14,307.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

6819 Lions Park - Phase 1 - Orange County, Winter

Project Characteristics - .

Land Use - Phase 1- 22,860 sf library (11,584 sf building footprint), 79,137 sf of walkways & plazas, 61,950 sf of landscaping & open space, and a 14,307 sf parking lot.

Construction Phase - Construction to start July 2017 and end December 2018.

Demolition - Existing ~22,750 sf Neighborhood Community Center to be demolished.

Grading - Per developer, fill 3,997 cubic feet - cut 994 cubic feet = 3,033 cubic feet fill. 3,033 cubic feet = 111.2 cubic yards fill.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Lions Park is located in the downtown portion of the City of Costa Mesa. OCTA Route 43 stop Park-19th is across Park Avenue (~53 feet or ~0.01 miles from project site).

Water Mitigation - Per Green Building Standards.

Waste Mitigation - AB 939 requires each jurisdiction in California to divert at least 50 percent of its waste away from landfills.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	230.00	325.00
tblConstructionPhase	NumDays	8.00	25.00
tblConstructionPhase	NumDays	18.00	10.00
tblGrading	AcresOfGrading	12.50	4.00
tblGrading	MaterialImported	0.00	111.20
tblLandUse	BuildingSpaceSquareFeet	11,580.00	22,860.00
tblLandUse	BuildingSpaceSquareFeet	141,090.00	141,087.00
tblLandUse	BuildingSpaceSquareFeet	14,310.00	14,307.00
tblLandUse	LandUseSquareFeet	11,580.00	22,860.00
tblLandUse	LandUseSquareFeet	141,090.00	141,087.00
tblLandUse	LandUseSquareFeet	14,310.00	14,307.00
tblProjectCharacteristics	OperationalYear	2018	2019

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.2402	44.5842	24.0427	0.0446	6.3697	2.2047	8.1493	3.3758	2.0532	5.0131	0.0000	4,539.7338	4,539.7338	1.1268	0.0000	4,567.9032
2018	25.8872	27.1060	21.3347	0.0423	1.0236	1.5315	2.5551	0.2757	1.4400	1.7156	0.0000	4,218.4059	4,218.4059	0.7367	0.0000	4,236.8242
Maximum	**25.8872**	**44.5842**	**24.0427**	**0.0446**	**6.3697**	**2.2047**	**8.1493**	**3.3758**	**2.0532**	**5.0131**	**0.0000**	**4,539.7338**	**4,539.7338**	**1.1268**	**0.0000**	**4,567.9032**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	4.2402	44.5842	24.0427	0.0446	2.5924	2.2047	4.3720	1.3453	2.0532	2.9826	0.0000	4,539.7338	4,539.7338	1.1268	0.0000	4,567.9032
2018	25.8872	27.1060	21.3347	0.0423	1.0236	1.5315	2.5551	0.2757	1.4400	1.7156	0.0000	4,218.4059	4,218.4059	0.7367	0.0000	4,236.8242
Maximum	**25.8872**	**44.5842**	**24.0427**	**0.0446**	**2.5924**	**2.2047**	**4.3720**	**1.3453**	**2.0532**	**2.9826**	**0.0000**	**4,539.7338**	**4,539.7338**	**1.1268**	**0.0000**	**4,567.9032**

6819 Lions Park - Phase 1 - Orange County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**51.09**	**0.00**	**35.29**	**55.61**	**0.00**	**30.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Energy	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Mobile	1.0653	4.2429	12.4915	0.0404	3.4873	0.0474	3.5347	0.9325	0.0446	0.9771		4,094.6266	4,094.6266	0.1925		4,099.4401
Total	**1.6586**	**4.3718**	**12.6169**	**0.0412**	**3.4873**	**0.0572**	**3.5446**	**0.9325**	**0.0544**	**0.9870**		**4,249.1754**	**4,249.1754**	**0.1956**	**2.8300e-003**	**4,254.9095**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Energy	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Mobile	0.9152	3.1780	8.6929	0.0248	2.0710	0.0299	2.1009	0.5538	0.0281	0.5819		2,511.3729	2,511.3729	0.1302		2,514.6289
Total	**1.5086**	**3.3069**	**8.8183**	**0.0256**	**2.0710**	**0.0398**	**2.1107**	**0.5538**	**0.0380**	**0.5918**		**2,665.9216**	**2,665.9216**	**0.1333**	**2.8300e-003**	**2,670.0984**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**9.05**	**24.36**	**30.11**	**37.96**	**40.62**	**30.53**	**40.45**	**40.61**	**30.25**	**40.04**	**0.00**	**37.26**	**37.26**	**31.85**	**0.00**	**37.25**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2017	7/28/2017	5	20	
2	Grading	Grading	7/29/2017	9/1/2017	5	25	
3	Building Construction	Building Construction	9/2/2017	11/30/2018	5	325	
4	Paving	Paving	12/1/2018	12/14/2018	5	10	
5	Architectural Coating	Architectural Coating	12/15/2018	12/28/2018	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 3.57

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,290; Non-Residential Outdoor: 11,430; Striped Parking Area: 9,324 (Architectural Coating – sqft)

OffRoad Equipment

6819 Lions Park - Phase 1 - Orange County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	6	15.00	0.00	103.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	14.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	75.00	29.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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										lb/day					
Fugitive Dust					1.1197	0.0000	1.1197	0.1695	0.0000	0.1695			0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425		3,924.2833	3,924.2833	1.0730		3,951.1070
Total	**4.1031**	**42.7475**	**23.0122**	**0.0388**	**1.1197**	**2.1935**	**3.3132**	**0.1695**	**2.0425**	**2.2120**		**3,924.2833**	**3,924.2833**	**1.0730**		**3,951.1070**

3.2 Demolition - 2017

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	0.0534	1.7795	0.4137	4.0400e-003	0.0897	0.0101	0.0998	0.0246	9.6400e-003	0.0342		446.2938	446.2938	0.0489		447.5158
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0573	0.6168	1.7000e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		169.1567	169.1567	4.9500e-003		169.2805
Total	**0.1371**	**1.8368**	**1.0305**	**5.7400e-003**	**0.2574**	**0.0112**	**0.2685**	**0.0690**	**0.0107**	**0.0797**		**615.4505**	**615.4505**	**0.0538**		**616.7962**

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					0.4367	0.0000	0.4367	0.0661	0.0000	0.0661			0.0000			0.0000
Off-Road	4.1031	42.7475	23.0122	0.0388		2.1935	2.1935		2.0425	2.0425	0.0000	3,924.2833	3,924.2833	1.0730		3,951.1070
Total	**4.1031**	**42.7475**	**23.0122**	**0.0388**	**0.4367**	**2.1935**	**2.6301**	**0.0661**	**2.0425**	**2.1086**	**0.0000**	**3,924.2833**	**3,924.2833**	**1.0730**		**3,951.1070**

3.2 Demolition - 2017

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	0.0534	1.7795	0.4137	4.0400e-003	0.0897	0.0101	0.0998	0.0246	9.6400e-003	0.0342		446.2938	446.2938	0.0489		447.5158
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0573	0.6168	1.7000e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		169.1567	169.1567	4.9500e-003		169.2805
Total	**0.1371**	**1.8368**	**1.0305**	**5.7400e-003**	**0.2574**	**0.0112**	**0.2685**	**0.0690**	**0.0107**	**0.0797**		**615.4505**	**615.4505**	**0.0538**		**616.7962**

3.3 Grading - 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										lb/day					
Fugitive Dust					6.1923	0.0000	6.1923	3.3286	0.0000	3.3286			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352		3,037.9107	3,037.9107	0.9308		3,061.1809
Total	**3.0705**	**33.8868**	**17.1042**	**0.0297**	**6.1923**	**1.7774**	**7.9697**	**3.3286**	**1.6352**	**4.9639**		**3,037.9107**	**3,037.9107**	**0.9308**		**3,061.1809**

3.3 Grading - 2017

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	5.8000e-003	0.1935	0.0450	4.4000e-004	9.7500e-003	1.1000e-003	0.0109	2.6700e-003	1.0500e-003	3.7200e-003		48.5290	48.5290	5.3200e-003		48.6619
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0573	0.6168	1.7000e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		169.1567	169.1567	4.9500e-003		169.2805
Total	**0.0895**	**0.2508**	**0.6618**	**2.1400e-003**	**0.1774**	**2.2200e-003**	**0.1796**	**0.0471**	**2.0800e-003**	**0.0492**		**217.6857**	**217.6857**	**0.0103**		**217.9424**

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					2.4150	0.0000	2.4150	1.2982	0.0000	1.2982			0.0000			0.0000
Off-Road	3.0705	33.8868	17.1042	0.0297		1.7774	1.7774		1.6352	1.6352	0.0000	3,037.9107	3,037.9107	0.9308		3,061.1809
Total	**3.0705**	**33.8868**	**17.1042**	**0.0297**	**2.4150**	**1.7774**	**4.1924**	**1.2982**	**1.6352**	**2.9334**	**0.0000**	**3,037.9107**	**3,037.9107**	**0.9308**		**3,061.1809**

3.3 Grading - 2017

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	5.8000e-003	0.1935	0.0450	4.4000e-004	9.7500e-003	1.1000e-003	0.0109	2.6700e-003	1.0500e-003	3.7200e-003		48.5290	48.5290	5.3200e-003		48.6619
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0837	0.0573	0.6168	1.7000e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		169.1567	169.1567	4.9500e-003		169.2805
Total	**0.0895**	**0.2508**	**0.6618**	**2.1400e-003**	**0.1774**	**2.2200e-003**	**0.1796**	**0.0471**	**2.0800e-003**	**0.0492**		**217.6857**	**217.6857**	**0.0103**		**217.9424**

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										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**		**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1397	3.7003	1.1179	7.2100e-003	0.1853	0.0327	0.2180	0.0533	0.0313	0.0846		780.2170	780.2170	0.0760		782.1161
Worker	0.4186	0.2863	3.0839	8.4900e-003	0.8383	5.5800e-003	0.8439	0.2223	5.1400e-003	0.2275		845.7836	845.7836	0.0248		846.4023
Total	**0.5583**	**3.9866**	**4.2018**	**0.0157**	**1.0236**	**0.0383**	**1.0619**	**0.2757**	**0.0365**	**0.3121**		**1,626.0006**	**1,626.0006**	**0.1007**		**1,628.5185**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**	**0.0000**	**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1397	3.7003	1.1179	7.2100e-003	0.1853	0.0327	0.2180	0.0533	0.0313	0.0846		780.2170	780.2170	0.0760		782.1161
Worker	0.4186	0.2863	3.0839	8.4900e-003	0.8383	5.5800e-003	0.8439	0.2223	5.1400e-003	0.2275		845.7836	845.7836	0.0248		846.4023
Total	**0.5583**	**3.9866**	**4.2018**	**0.0157**	**1.0236**	**0.0383**	**1.0619**	**0.2757**	**0.0365**	**0.3121**		**1,626.0006**	**1,626.0006**	**0.1007**		**1,628.5185**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1226	3.4650	1.0188	7.1600e-003	0.1853	0.0261	0.2114	0.0533	0.0249	0.0783		776.3727	776.3727	0.0728		778.1921
Worker	0.3783	0.2510	2.7354	8.2400e-003	0.8383	5.5400e-003	0.8439	0.2223	5.1000e-003	0.2274		821.0980	821.0980	0.0218		821.6438
Total	**0.5009**	**3.7160**	**3.7542**	**0.0154**	**1.0236**	**0.0316**	**1.0552**	**0.2757**	**0.0300**	**0.3057**		**1,597.4708**	**1,597.4708**	**0.0946**		**1,599.8359**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1226	3.4650	1.0188	7.1600e-003	0.1853	0.0261	0.2114	0.0533	0.0249	0.0783		776.3727	776.3727	0.0728		778.1921
Worker	0.3783	0.2510	2.7354	8.2400e-003	0.8383	5.5400e-003	0.8439	0.2223	5.1000e-003	0.2274		821.0980	821.0980	0.0218		821.6438
Total	**0.5009**	**3.7160**	**3.7542**	**0.0154**	**1.0236**	**0.0316**	**1.0552**	**0.2757**	**0.0300**	**0.3057**		**1,597.4708**	**1,597.4708**	**0.0946**		**1,599.8359**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718		1,872.5505	1,872.5505	0.5672		1,886.7312
Paving	0.0865					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5104**	**14.5184**	**12.4333**	**0.0189**		**0.8370**	**0.8370**		**0.7718**	**0.7718**		**1,872.5505**	**1,872.5505**	**0.5672**		**1,886.7312**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1009	0.0669	0.7294	2.2000e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		218.9595	218.9595	5.8200e-003		219.1050
Total	**0.1009**	**0.0669**	**0.7294**	**2.2000e-003**	**0.2236**	**1.4800e-003**	**0.2250**	**0.0593**	**1.3600e-003**	**0.0607**		**218.9595**	**218.9595**	**5.8200e-003**		**219.1050**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4239	14.5184	12.4333	0.0189		0.8370	0.8370		0.7718	0.7718	0.0000	1,872.5505	1,872.5505	0.5672		1,886.7312
Paving	0.0865					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5104**	**14.5184**	**12.4333**	**0.0189**		**0.8370**	**0.8370**		**0.7718**	**0.7718**	**0.0000**	**1,872.5505**	**1,872.5505**	**0.5672**		**1,886.7312**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1009	0.0669	0.7294	2.2000e-003	0.2236	1.4800e-003	0.2250	0.0593	1.3600e-003	0.0607		218.9595	218.9595	5.8200e-003		219.1050
Total	**0.1009**	**0.0669**	**0.7294**	**2.2000e-003**	**0.2236**	**1.4800e-003**	**0.2250**	**0.0593**	**1.3600e-003**	**0.0607**		**218.9595**	**218.9595**	**5.8200e-003**		**219.1050**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.5129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**25.8115**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0757	0.0502	0.5471	1.6500e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		164.2196	164.2196	4.3700e-003		164.3288
Total	**0.0757**	**0.0502**	**0.5471**	**1.6500e-003**	**0.1677**	**1.1100e-003**	**0.1688**	**0.0445**	**1.0200e-003**	**0.0455**		**164.2196**	**164.2196**	**4.3700e-003**		**164.3288**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	25.5129					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**25.8115**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0757	0.0502	0.5471	1.6500e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		164.2196	164.2196	4.3700e-003		164.3288
Total	**0.0757**	**0.0502**	**0.5471**	**1.6500e-003**	**0.1677**	**1.1100e-003**	**0.1688**	**0.0445**	**1.0200e-003**	**0.0455**		**164.2196**	**164.2196**	**4.3700e-003**		**164.3288**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.9152	3.1780	8.6929	0.0248	2.0710	0.0299	2.1009	0.5538	0.0281	0.5819		2,511.3729	2,511.3729	0.1302		2,514.6289
Unmitigated	1.0653	4.2429	12.4915	0.0404	3.4873	0.0474	3.5347	0.9325	0.0446	0.9771		4,094.6266	4,094.6266	0.1925		4,099.4401

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	651.26	539.05	295.17	1,475,325	876,120
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	651.26	539.05	295.17	1,475,325	876,120

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041
Other Non-Asphalt Surfaces	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041
Parking Lot	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
NaturalGas Unmitigated	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304

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					
Library	1313.35	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0142**	**0.1288**	**0.1082**	**7.7000e-004**		**9.7900e-003**	**9.7900e-003**		**9.7900e-003**	**9.7900e-003**		**154.5122**	**154.5122**	**2.9600e-003**	**2.8300e-003**	**155.4304**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Library	1.31335	0.0142	0.1288	0.1082	7.7000e-004		9.7900e-003	9.7900e-003		9.7900e-003	9.7900e-003		154.5122	154.5122	2.9600e-003	2.8300e-003	155.4304
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0142**	**0.1288**	**0.1082**	**7.7000e-004**		**9.7900e-003**	**9.7900e-003**		**9.7900e-003**	**9.7900e-003**		**154.5122**	**154.5122**	**2.9600e-003**	**2.8300e-003**	**155.4304**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Unmitigated	0.5792	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390

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	0.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6300e-003	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Total	**0.5792**	**1.6000e-004**	**0.0172**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0365**	**0.0365**	**1.0000e-004**		**0.0390**

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	0.0699					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6300e-003	1.6000e-004	0.0172	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0365	0.0365	1.0000e-004		0.0390
Total	**0.5792**	**1.6000e-004**	**0.0172**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0365**	**0.0365**	**1.0000e-004**		**0.0390**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

6819 Lions Park- Off-site Improvments CONSTRUCTION ANALYSIS ONLY

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	18.41	1000sqft	0.42	18,415.00	0
Other Non-Asphalt Surfaces	1.37	1000sqft	0.03	1,365.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CONSTRUCTION ANALYSIS ONLY

Land Use - Park Ave- total 17,430sf: 580ft x ~28ft = 16,240sf paving (includes 27 prkg spcs) & remainder landscaping. Anaheim Ave- total 2,350sf: 145ft x ~15ft = 2,175sf & remainder landscaping.
Construction Phase - Off-site improvements to occur during Phase 1 (July 2017 to December 2018).

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Grading -

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblLandUse	BuildingSpaceSquareFeet	18,410.00	18,415.00
tblLandUse	BuildingSpaceSquareFeet	1,370.00	1,365.00
tblLandUse	LandUseSquareFeet	18,410.00	18,415.00
tblLandUse	LandUseSquareFeet	1,370.00	1,365.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.3626	10.5321	8.1367	0.0134	0.5861	0.6101	1.0591	0.0721	0.5648	0.6181	0.0000	1,299.5549	1,299.5549	0.3080	0.0000	1,307.2551
Maximum	**1.3626**	**10.5321**	**8.1367**	**0.0134**	**0.5861**	**0.6101**	**1.0591**	**0.0721**	**0.5648**	**0.6181**	**0.0000**	**1,299.5549**	**1,299.5549**	**0.3080**	**0.0000**	**1,307.2551**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.3626	10.5321	8.1367	0.0134	0.2627	0.6101	0.8113	0.0534	0.5648	0.6181	0.0000	1,299.5549	1,299.5549	0.3080	0.0000	1,307.2551
Maximum	**1.3626**	**10.5321**	**8.1367**	**0.0134**	**0.2627**	**0.6101**	**0.8113**	**0.0534**	**0.5648**	**0.6181**	**0.0000**	**1,299.5549**	**1,299.5549**	**0.3080**	**0.0000**	**1,307.2551**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.18	0.00	23.40	25.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/2/2017	9/4/2017	5	1	
2	Paving	Paving	9/5/2017	9/11/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.8524	10.5148	4.3533	9.7700e-003		0.4726	0.4726		0.4347	0.4347		999.5201	999.5201	0.3063		1,007.1764
Total	**0.8524**	**10.5148**	**4.3533**	**9.7700e-003**	**0.5303**	**0.4726**	**1.0028**	**0.0573**	**0.4347**	**0.4920**		**999.5201**	**999.5201**	**0.3063**		**1,007.1764**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	0.0174	0.2206	6.0000e-004	0.0559	3.7000e-004	0.0563	0.0148	3.4000e-004	0.0152		59.5688	59.5688	1.7300e-003		59.6121
Total	**0.0248**	**0.0174**	**0.2206**	**6.0000e-004**	**0.0559**	**3.7000e-004**	**0.0563**	**0.0148**	**3.4000e-004**	**0.0152**		**59.5688**	**59.5688**	**1.7300e-003**		**59.6121**

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					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	0.8524	10.5148	4.3533	9.7700e-003		0.4726	0.4726		0.4347	0.4347	0.0000	999.5201	999.5201	0.3063		1,007.1764
Total	**0.8524**	**10.5148**	**4.3533**	**9.7700e-003**	**0.2068**	**0.4726**	**0.6794**	**0.0223**	**0.4347**	**0.4571**	**0.0000**	**999.5201**	**999.5201**	**0.3063**		**1,007.1764**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0248	0.0174	0.2206	6.0000e-004	0.0559	3.7000e-004	0.0563	0.0148	3.4000e-004	0.0152		59.5688	59.5688	1.7300e-003		59.6121
Total	**0.0248**	**0.0174**	**0.2206**	**6.0000e-004**	**0.0559**	**3.7000e-004**	**0.0563**	**0.0148**	**3.4000e-004**	**0.0152**		**59.5688**	**59.5688**	**1.7300e-003**		**59.6121**

3.3 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										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.2201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2733**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**		**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0893	0.0625	0.7942	2.1500e-003	0.2012	1.3400e-003	0.2025	0.0534	1.2300e-003	0.0546		214.4477	214.4477	6.2400e-003		214.6036
Total	**0.0893**	**0.0625**	**0.7942**	**2.1500e-003**	**0.2012**	**1.3400e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**214.4477**	**214.4477**	**6.2400e-003**		**214.6036**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.2201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2733**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**	**0.0000**	**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0893	0.0625	0.7942	2.1500e-003	0.2012	1.3400e-003	0.2025	0.0534	1.2300e-003	0.0546		214.4477	214.4477	6.2400e-003		214.6036
Total	**0.0893**	**0.0625**	**0.7942**	**2.1500e-003**	**0.2012**	**1.3400e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**214.4477**	**214.4477**	**6.2400e-003**		**214.6036**

6819 Lions Park- Off-site Improvments CONSTRUCTION ANALYSIS ONLY

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	18.41	1000sqft	0.42	18,415.00	0
Other Non-Asphalt Surfaces	1.37	1000sqft	0.03	1,365.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CONSTRUCTION ANALYSIS ONLY

Land Use - Park Ave- total 17,430sf: 580ft x ~28ft = 16,240sf paving (includes 27 prkg spcs) & remainder landscaping. Anaheim Ave- total 2,350sf: 145ft x ~15ft = 2,175sf & remainder landscaping.
Construction Phase - Off-site improvements to occur during Phase 1 (July 2017 to December 2018).

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Grading -

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblLandUse	BuildingSpaceSquareFeet	18,410.00	18,415.00
tblLandUse	BuildingSpaceSquareFeet	1,370.00	1,365.00
tblLandUse	LandUseSquareFeet	18,410.00	18,415.00
tblLandUse	LandUseSquareFeet	1,370.00	1,365.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.3738	10.5339	8.0826	0.0133	0.5861	0.6101	1.0591	0.0721	0.5648	0.6181	0.0000	1,288.0952	1,288.0952	0.3079	0.0000	1,295.7880
Maximum	**1.3738**	**10.5339**	**8.0826**	**0.0133**	**0.5861**	**0.6101**	**1.0591**	**0.0721**	**0.5648**	**0.6181**	**0.0000**	**1,288.0952**	**1,288.0952**	**0.3079**	**0.0000**	**1,295.7880**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	1.3738	10.5339	8.0826	0.0133	0.2627	0.6101	0.8113	0.0534	0.5648	0.6181	0.0000	1,288.0952	1,288.0952	0.3079	0.0000	1,295.7880
Maximum	**1.3738**	**10.5339**	**8.0826**	**0.0133**	**0.2627**	**0.6101**	**0.8113**	**0.0534**	**0.5648**	**0.6181**	**0.0000**	**1,288.0952**	**1,288.0952**	**0.3079**	**0.0000**	**1,295.7880**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.18	0.00	23.40	25.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/2/2017	9/4/2017	5	1	
2	Paving	Paving	9/5/2017	9/11/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.8524	10.5148	4.3533	9.7700e-003		0.4726	0.4726		0.4347	0.4347		999.5201	999.5201	0.3063		1,007.1764
Total	**0.8524**	**10.5148**	**4.3533**	**9.7700e-003**	**0.5303**	**0.4726**	**1.0028**	**0.0573**	**0.4347**	**0.4920**		**999.5201**	**999.5201**	**0.3063**		**1,007.1764**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0279	0.0191	0.2056	5.7000e-004	0.0559	3.7000e-004	0.0563	0.0148	3.4000e-004	0.0152		56.3856	56.3856	1.6500e-003		56.4268
Total	**0.0279**	**0.0191**	**0.2056**	**5.7000e-004**	**0.0559**	**3.7000e-004**	**0.0563**	**0.0148**	**3.4000e-004**	**0.0152**		**56.3856**	**56.3856**	**1.6500e-003**		**56.4268**

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					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	0.8524	10.5148	4.3533	9.7700e-003		0.4726	0.4726		0.4347	0.4347	0.0000	999.5201	999.5201	0.3063		1,007.1764
Total	**0.8524**	**10.5148**	**4.3533**	**9.7700e-003**	**0.2068**	**0.4726**	**0.6794**	**0.0223**	**0.4347**	**0.4571**	**0.0000**	**999.5201**	**999.5201**	**0.3063**		**1,007.1764**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0279	0.0191	0.2056	5.7000e-004	0.0559	3.7000e-004	0.0563	0.0148	3.4000e-004	0.0152		56.3856	56.3856	1.6500e-003		56.4268
Total	**0.0279**	**0.0191**	**0.2056**	**5.7000e-004**	**0.0559**	**3.7000e-004**	**0.0563**	**0.0148**	**3.4000e-004**	**0.0152**		**56.3856**	**56.3856**	**1.6500e-003**		**56.4268**

3.3 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										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636		1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.2201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2733**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**		**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1005	0.0687	0.7401	2.0400e-003	0.2012	1.3400e-003	0.2025	0.0534	1.2300e-003	0.0546		202.9881	202.9881	5.9400e-003		203.1366
Total	**0.1005**	**0.0687**	**0.7401**	**2.0400e-003**	**0.2012**	**1.3400e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**202.9881**	**202.9881**	**5.9400e-003**		**203.1366**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0532	9.9754	7.3425	0.0113		0.6087	0.6087		0.5636	0.5636	0.0000	1,085.1071	1,085.1071	0.3018		1,092.6515
Paving	0.2201					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2733**	**9.9754**	**7.3425**	**0.0113**		**0.6087**	**0.6087**		**0.5636**	**0.5636**	**0.0000**	**1,085.1071**	**1,085.1071**	**0.3018**		**1,092.6515**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1005	0.0687	0.7401	2.0400e-003	0.2012	1.3400e-003	0.2025	0.0534	1.2300e-003	0.0546		202.9881	202.9881	5.9400e-003		203.1366
Total	**0.1005**	**0.0687**	**0.7401**	**2.0400e-003**	**0.2012**	**1.3400e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**202.9881**	**202.9881**	**5.9400e-003**		**203.1366**

6819 Lions Park - Phase 2

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.54	1000sqft	0.01	541.00	0
Other Non-Asphalt Surfaces	36.15	1000sqft	0.83	36,152.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - .

Land Use - Phase 2- new 9,281 sf NCC building by renovation/expansion of existing 8,740 sf library = 541 sf newly construced portion of building, 28,553 sf walkways/plazas, & 7,599 sf landscaping/OS.

Construction Phase - Construction to start February 2019 and end February 2020.

Demolition -

Grading - In land use section Phase 1 estimated as ~0.86 acres. Per developer, cut 156 cubic feet - fill 80 cubic feet = 76 cubic feet cut. 76 cubic feet = 2.81 cubic yards cut.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Lions Park is located in downtown City of Costa Mesa. OCTA Route 43 stop Park-19th located across Park Avenue (~53 feet or 0.01 miles from site).

Water Mitigation - Per California Green Building Standards.

Waste Mitigation - AB 939 requires each jurisdiction in California to divert at least 50 percent of its waste away from landfills.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblGrading	AcresOfGrading	0.00	0.86
tblGrading	MaterialExported	0.00	2.81
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.0419	10.5421	8.2583	0.0146	1.3207	0.6111	1.8585	0.4927	0.5624	1.0058	0.0000	1,460.3720	1,460.3720	0.3748	0.0000	1,469.7410
2020	3.2683	9.5137	8.0434	0.0145	0.2060	0.5267	0.7327	0.0555	0.4847	0.5402	0.0000	1,429.1620	1,429.1620	0.3736	0.0000	1,438.5022
Maximum	**3.2683**	**10.5421**	**8.2583**	**0.0146**	**1.3207**	**0.6111**	**1.8585**	**0.4927**	**0.5624**	**1.0058**	**0.0000**	**1,460.3720**	**1,460.3720**	**0.3748**	**0.0000**	**1,469.7410**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.0419	10.5421	8.2583	0.0146	0.5833	0.6111	1.1211	0.2102	0.5624	0.7234	0.0000	1,460.3720	1,460.3720	0.3748	0.0000	1,469.7410
2020	3.2683	9.5137	8.0434	0.0145	0.2060	0.5267	0.7327	0.0555	0.4847	0.5402	0.0000	1,429.1620	1,429.1620	0.3736	0.0000	1,438.5022
Maximum	**3.2683**	**10.5421**	**8.2583**	**0.0146**	**0.5833**	**0.6111**	**1.1211**	**0.2102**	**0.5624**	**0.7234**	**0.0000**	**1,460.3720**	**1,460.3720**	**0.3748**	**0.0000**	**1,469.7410**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**48.30**	**0.00**	**28.46**	**51.53**	**0.00**	**18.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Energy	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Mobile	9.9700e-003	0.0404	0.1326	4.8000e-004	0.0408	4.7000e-004	0.0412	0.0109	4.4000e-004	0.0113		48.2720	48.2720	2.0200e-003		48.3225
Total	**0.0381**	**0.0417**	**0.1375**	**4.9000e-004**	**0.0408**	**5.8000e-004**	**0.0414**	**0.0109**	**5.5000e-004**	**0.0115**		**49.8808**	**49.8808**	**2.0700e-003**	**3.0000e-005**	**49.9414**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Energy	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Mobile	8.3800e-003	0.0303	0.0891	3.0000e-004	0.0247	3.0000e-004	0.0250	6.6100e-003	2.8000e-004	6.8800e-003		30.0121	30.0121	1.3400e-003		30.0456
Total	**0.0365**	**0.0317**	**0.0939**	**3.1000e-004**	**0.0247**	**4.1000e-004**	**0.0251**	**6.6100e-003**	**3.9000e-004**	**6.9900e-003**		**31.6209**	**31.6209**	**1.3900e-003**	**3.0000e-005**	**31.6645**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.17**	**24.14**	**31.67**	**36.73**	**39.39**	**29.31**	**39.27**	**39.36**	**29.09**	**38.95**	**0.00**	**36.61**	**36.61**	**32.85**	**0.00**	**36.60**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/1/2019	2/6/2019	5	2	
2	Building Construction	Building Construction	2/7/2019	1/31/2020	5	100	
3	Paving	Paving	2/1/2020	2/14/2020	5	5	
4	Architectural Coating	Architectural Coating	2/15/2020	2/28/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.86

Acres of Paving: 0.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 812; Non-Residential Outdoor: 271; Striped Parking Area: 2,169 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2089	0.0000	1.2089	0.4630	0.0000	0.4630			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**1.2089**	**0.5371**	**1.7460**	**0.4630**	**0.5125**	**0.9755**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0412	0.0270	0.3567	1.1300e-003	0.1118	7.5000e-004	0.1125	0.0296	6.9000e-004	0.0303		112.6140	112.6140	2.7700e-003		112.6833
Total	**0.0412**	**0.0270**	**0.3567**	**1.1300e-003**	**0.1118**	**7.5000e-004**	**0.1125**	**0.0296**	**6.9000e-004**	**0.0303**		**112.6140**	**112.6140**	**2.7700e-003**		**112.6833**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4715	0.0000	0.4715	0.1806	0.0000	0.1806			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.4715**	**0.5371**	**1.0086**	**0.1806**	**0.5125**	**0.6931**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0412	0.0270	0.3567	1.1300e-003	0.1118	7.5000e-004	0.1125	0.0296	6.9000e-004	0.0303		112.6140	112.6140	2.7700e-003		112.6833
Total	**0.0412**	**0.0270**	**0.3567**	**1.1300e-003**	**0.1118**	**7.5000e-004**	**0.1125**	**0.0296**	**6.9000e-004**	**0.0303**		**112.6140**	**112.6140**	**2.7700e-003**		**112.6833**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0225	0.6809	0.1800	1.5100e-003	0.0383	4.6000e-003	0.0429	0.0110	4.4000e-003	0.0154		163.7813	163.7813	0.0138		164.1270
Worker	0.0618	0.0405	0.5351	1.6900e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		168.9210	168.9210	4.1500e-003		169.0249
Total	**0.0843**	**0.7214**	**0.7151**	**3.2000e-003**	**0.2060**	**5.7200e-003**	**0.2117**	**0.0555**	**5.4300e-003**	**0.0609**		**332.7024**	**332.7024**	**0.0180**		**333.1519**

3.3 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0225	0.6809	0.1800	1.5100e-003	0.0383	4.6000e-003	0.0429	0.0110	4.4000e-003	0.0154		163.7813	163.7813	0.0138		164.1270
Worker	0.0618	0.0405	0.5351	1.6900e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		168.9210	168.9210	4.1500e-003		169.0249
Total	**0.0843**	**0.7214**	**0.7151**	**3.2000e-003**	**0.2060**	**5.7200e-003**	**0.2117**	**0.0555**	**5.4300e-003**	**0.0609**		**332.7024**	**332.7024**	**0.0180**		**333.1519**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0192	0.6251	0.1650	1.4900e-003	0.0383	3.2600e-003	0.0416	0.0110	3.1200e-003	0.0142		162.6774	162.6774	0.0132		163.0063
Worker	0.0576	0.0363	0.4910	1.6400e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		163.5065	163.5065	3.7300e-003		163.5997
Total	**0.0768**	**0.6614**	**0.6560**	**3.1300e-003**	**0.2060**	**4.3700e-003**	**0.2104**	**0.0555**	**4.1400e-003**	**0.0596**		**326.1839**	**326.1839**	**0.0169**		**326.6060**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0192	0.6251	0.1650	1.4900e-003	0.0383	3.2600e-003	0.0416	0.0110	3.1200e-003	0.0142		162.6774	162.6774	0.0132		163.0063
Worker	0.0576	0.0363	0.4910	1.6400e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		163.5065	163.5065	3.7300e-003		163.5997
Total	**0.0768**	**0.6614**	**0.6560**	**3.1300e-003**	**0.2060**	**4.3700e-003**	**0.2104**	**0.0555**	**4.1400e-003**	**0.0596**		**326.1839**	**326.1839**	**0.0169**		**326.6060**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7716**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0436	0.5892	1.9700e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		196.2079	196.2079	4.4700e-003		196.3197
Total	**0.0692**	**0.0436**	**0.5892**	**1.9700e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**196.2079**	**196.2079**	**4.4700e-003**		**196.3197**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7716**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0692	0.0436	0.5892	1.9700e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		196.2079	196.2079	4.4700e-003		196.3197
Total	**0.0692**	**0.0436**	**0.5892**	**1.9700e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**196.2079**	**196.2079**	**4.4700e-003**		**196.3197**

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**3.2568**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0115	7.2600e-003	0.0982	3.3000e-004	0.0335	2.2000e-004	0.0338	8.8900e-003	2.0000e-004	9.1000e-003		32.7013	32.7013	7.5000e-004		32.7199
Total	**0.0115**	**7.2600e-003**	**0.0982**	**3.3000e-004**	**0.0335**	**2.2000e-004**	**0.0338**	**8.8900e-003**	**2.0000e-004**	**9.1000e-003**		**32.7013**	**32.7013**	**7.5000e-004**		**32.7199**

3.5 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**3.2568**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0115	7.2600e-003	0.0982	3.3000e-004	0.0335	2.2000e-004	0.0338	8.8900e-003	2.0000e-004	9.1000e-003		32.7013	32.7013	7.5000e-004		32.7199
Total	**0.0115**	**7.2600e-003**	**0.0982**	**3.3000e-004**	**0.0335**	**2.2000e-004**	**0.0338**	**8.8900e-003**	**2.0000e-004**	**9.1000e-003**		**32.7013**	**32.7013**	**7.5000e-004**		**32.7199**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.3800e-003	0.0303	0.0891	3.0000e-004	0.0247	3.0000e-004	0.0250	6.6100e-003	2.8000e-004	6.8800e-003		30.0121	30.0121	1.3400e-003		30.0456
Unmitigated	9.9700e-003	0.0404	0.1326	4.8000e-004	0.0408	4.7000e-004	0.0412	0.0109	4.4000e-004	0.0113		48.2720	48.2720	2.0200e-003		48.3225

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	5.97	1.33	0.57	14,605	8,850
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5.97	1.33	0.57	14,605	8,850

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.555968	0.043848	0.210359	0.116378	0.016765	0.005795	0.025008	0.016160	0.001677	0.001586	0.004867	0.000586	0.001002
Other Non-Asphalt Surfaces	0.555968	0.043848	0.210359	0.116378	0.016765	0.005795	0.025008	0.016160	0.001677	0.001586	0.004867	0.000586	0.001002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
NaturalGas Unmitigated	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103

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					
General Office Building	13.6065	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.5000e-004**	**1.3300e-003**	**1.1200e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6008**	**1.6008**	**3.0000e-005**	**3.0000e-005**	**1.6103**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.0136065	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.5000e-004**	**1.3300e-003**	**1.1200e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6008**	**1.6008**	**3.0000e-005**	**3.0000e-005**	**1.6103**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Unmitigated	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.1300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0235					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5000e-004	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Total	**0.0280**	**3.0000e-005**	**3.7700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**8.0300e-003**	**8.0300e-003**	**2.0000e-005**		**8.5700e-003**

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	4.1300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0235					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5000e-004	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Total	**0.0280**	**3.0000e-005**	**3.7700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**8.0300e-003**	**8.0300e-003**	**2.0000e-005**		**8.5700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

6819 Lions Park - Phase 2

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.54	1000sqft	0.01	541.00	0
Other Non-Asphalt Surfaces	36.15	1000sqft	0.83	36,152.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - .

Land Use - Phase 2- new 9,281 sf NCC building by renovation/expansion of existing 8,740 sf library = 541 sf newly construced portion of building, 28,553 sf walkways/plazas, & 7,599 sf landscaping/OS.

Construction Phase - Construction to start February 2019 and end February 2020.

Demolition -

Grading - In land use section Phase 1 estimated as ~0.86 acres. Per developer, cut 156 cubic feet - fill 80 cubic feet = 76 cubic feet cut. 76 cubic feet = 2.81 cubic yards cut.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Lions Park is located in downtown City of Costa Mesa. OCTA Route 43 stop Park-19th located across Park Avenue (~53 feet or 0.01 miles from site).

Water Mitigation - Per California Green Building Standards.

Waste Mitigation - AB 939 requires each jurisdiction in California to divert at least 50 percent of its waste away from landfills.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblGrading	AcresOfGrading	0.00	0.86
tblGrading	MaterialExported	0.00	2.81
tblProjectCharacteristics	OperationalYear	2018	2020

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.0508	10.5469	8.2362	0.0145	1.3207	0.6112	1.8585	0.4927	0.5625	1.0058	0.0000	1,447.3488	1,447.3488	0.3753	0.0000	1,456.7307
2020	3.2698	9.5171	8.0221	0.0144	0.2060	0.5268	0.7328	0.0555	0.4848	0.5403	0.0000	1,416.4009	1,416.4009	0.3741	0.0000	1,425.7528
Maximum	**3.2698**	**10.5469**	**8.2362**	**0.0145**	**1.3207**	**0.6112**	**1.8585**	**0.4927**	**0.5625**	**1.0058**	**0.0000**	**1,447.3488**	**1,447.3488**	**0.3753**	**0.0000**	**1,456.7307**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.0508	10.5469	8.2362	0.0145	0.5833	0.6112	1.1211	0.2102	0.5625	0.7234	0.0000	1,447.3488	1,447.3488	0.3753	0.0000	1,456.7307
2020	3.2698	9.5171	8.0221	0.0144	0.2060	0.5268	0.7328	0.0555	0.4848	0.5403	0.0000	1,416.4009	1,416.4009	0.3741	0.0000	1,425.7528
Maximum	**3.2698**	**10.5469**	**8.2362**	**0.0145**	**0.5833**	**0.6112**	**1.1211**	**0.2102**	**0.5625**	**0.7234**	**0.0000**	**1,447.3488**	**1,447.3488**	**0.3753**	**0.0000**	**1,456.7307**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**48.30**	**0.00**	**28.46**	**51.53**	**0.00**	**18.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Energy	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Mobile	9.8200e-003	0.0416	0.1270	4.5000e-004	0.0408	4.7000e-004	0.0412	0.0109	4.4000e-004	0.0113		46.1129	46.1129	2.0100e-003		46.1632
Total	**0.0380**	**0.0430**	**0.1319**	**4.6000e-004**	**0.0408**	**5.8000e-004**	**0.0414**	**0.0109**	**5.5000e-004**	**0.0115**		**47.7217**	**47.7217**	**2.0600e-003**	**3.0000e-005**	**47.7821**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Energy	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Mobile	8.2600e-003	0.0310	0.0872	2.8000e-004	0.0247	3.0000e-004	0.0250	6.6100e-003	2.8000e-004	6.8900e-003		28.6517	28.6517	1.3500e-003		28.6855
Total	**0.0364**	**0.0323**	**0.0921**	**2.9000e-004**	**0.0247**	**4.1000e-004**	**0.0251**	**6.6100e-003**	**3.9000e-004**	**7.0000e-003**		**30.2605**	**30.2605**	**1.4000e-003**	**3.0000e-005**	**30.3043**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.11**	**24.78**	**30.18**	**36.96**	**39.39**	**29.31**	**39.27**	**39.36**	**29.09**	**38.86**	**0.00**	**36.59**	**36.59**	**32.04**	**0.00**	**36.58**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/1/2019	2/6/2019	5	2	
2	Building Construction	Building Construction	2/7/2019	1/31/2020	5	100	
3	Paving	Paving	2/1/2020	2/14/2020	5	5	
4	Architectural Coating	Architectural Coating	2/15/2020	2/28/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.86

Acres of Paving: 0.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 812; Non-Residential Outdoor: 271; Striped Parking Area: 2,169 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2089	0.0000	1.2089	0.4630	0.0000	0.4630			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**1.2089**	**0.5371**	**1.7460**	**0.4630**	**0.5125**	**0.9755**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0297	0.3303	1.0700e-003	0.1118	7.5000e-004	0.1125	0.0296	6.9000e-004	0.0303		106.5774	106.5774	2.6300e-003		106.6430
Total	**0.0465**	**0.0297**	**0.3303**	**1.0700e-003**	**0.1118**	**7.5000e-004**	**0.1125**	**0.0296**	**6.9000e-004**	**0.0303**		**106.5774**	**106.5774**	**2.6300e-003**		**106.6430**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4715	0.0000	0.4715	0.1806	0.0000	0.1806			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.4715**	**0.5371**	**1.0086**	**0.1806**	**0.5125**	**0.6931**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0465	0.0297	0.3303	1.0700e-003	0.1118	7.5000e-004	0.1125	0.0296	6.9000e-004	0.0303		106.5774	106.5774	2.6300e-003		106.6430
Total	**0.0465**	**0.0297**	**0.3303**	**1.0700e-003**	**0.1118**	**7.5000e-004**	**0.1125**	**0.0296**	**6.9000e-004**	**0.0303**		**106.5774**	**106.5774**	**2.6300e-003**		**106.6430**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0235	0.6816	0.1976	1.4700e-003	0.0383	4.6900e-003	0.0430	0.0110	4.4800e-003	0.0155		159.8131	159.8131	0.0146		160.1770
Worker	0.0697	0.0446	0.4954	1.6000e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		159.8661	159.8661	3.9400e-003		159.9645
Total	**0.0932**	**0.7262**	**0.6930**	**3.0700e-003**	**0.2060**	**5.8100e-003**	**0.2118**	**0.0555**	**5.5100e-003**	**0.0610**		**319.6791**	**319.6791**	**0.0185**		**320.1415**

3.3 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0235	0.6816	0.1976	1.4700e-003	0.0383	4.6900e-003	0.0430	0.0110	4.4800e-003	0.0155		159.8131	159.8131	0.0146		160.1770
Worker	0.0697	0.0446	0.4954	1.6000e-003	0.1677	1.1200e-003	0.1688	0.0445	1.0300e-003	0.0455		159.8661	159.8661	3.9400e-003		159.9645
Total	**0.0932**	**0.7262**	**0.6930**	**3.0700e-003**	**0.2060**	**5.8100e-003**	**0.2118**	**0.0555**	**5.5100e-003**	**0.0610**		**319.6791**	**319.6791**	**0.0185**		**320.1415**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0200	0.6249	0.1808	1.4600e-003	0.0383	3.3200e-003	0.0417	0.0110	3.1700e-003	0.0142		158.6796	158.6796	0.0138		159.0252
Worker	0.0651	0.0399	0.4538	1.5500e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		154.7432	154.7432	3.5300e-003		154.8314
Total	**0.0852**	**0.6648**	**0.6346**	**3.0100e-003**	**0.2060**	**4.4300e-003**	**0.2104**	**0.0555**	**4.1900e-003**	**0.0597**		**313.4228**	**313.4228**	**0.0174**		**313.8566**

3.3 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0200	0.6249	0.1808	1.4600e-003	0.0383	3.3200e-003	0.0417	0.0110	3.1700e-003	0.0142		158.6796	158.6796	0.0138		159.0252
Worker	0.0651	0.0399	0.4538	1.5500e-003	0.1677	1.1100e-003	0.1688	0.0445	1.0200e-003	0.0455		154.7432	154.7432	3.5300e-003		154.8314
Total	**0.0852**	**0.6648**	**0.6346**	**3.0100e-003**	**0.2060**	**4.4300e-003**	**0.2104**	**0.0555**	**4.1900e-003**	**0.0597**		**313.4228**	**313.4228**	**0.0174**		**313.8566**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7716**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0782	0.0479	0.5446	1.8600e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		185.6918	185.6918	4.2400e-003		185.7977
Total	**0.0782**	**0.0479**	**0.5446**	**1.8600e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**185.6918**	**185.6918**	**4.2400e-003**		**185.7977**

3.4 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7716**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0782	0.0479	0.5446	1.8600e-003	0.2012	1.3300e-003	0.2025	0.0534	1.2300e-003	0.0546		185.6918	185.6918	4.2400e-003		185.7977
Total	**0.0782**	**0.0479**	**0.5446**	**1.8600e-003**	**0.2012**	**1.3300e-003**	**0.2025**	**0.0534**	**1.2300e-003**	**0.0546**		**185.6918**	**185.6918**	**4.2400e-003**		**185.7977**

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**3.2568**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0130	7.9800e-003	0.0908	3.1000e-004	0.0335	2.2000e-004	0.0338	8.8900e-003	2.0000e-004	9.1000e-003		30.9486	30.9486	7.1000e-004		30.9663
Total	**0.0130**	**7.9800e-003**	**0.0908**	**3.1000e-004**	**0.0335**	**2.2000e-004**	**0.0338**	**8.8900e-003**	**2.0000e-004**	**9.1000e-003**		**30.9486**	**30.9486**	**7.1000e-004**		**30.9663**

3.5 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.0146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**3.2568**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0130	7.9800e-003	0.0908	3.1000e-004	0.0335	2.2000e-004	0.0338	8.8900e-003	2.0000e-004	9.1000e-003		30.9486	30.9486	7.1000e-004		30.9663
Total	**0.0130**	**7.9800e-003**	**0.0908**	**3.1000e-004**	**0.0335**	**2.2000e-004**	**0.0338**	**8.8900e-003**	**2.0000e-004**	**9.1000e-003**		**30.9486**	**30.9486**	**7.1000e-004**		**30.9663**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.2600e-003	0.0310	0.0872	2.8000e-004	0.0247	3.0000e-004	0.0250	6.6100e-003	2.8000e-004	6.8900e-003		28.6517	28.6517	1.3500e-003		28.6855
Unmitigated	9.8200e-003	0.0416	0.1270	4.5000e-004	0.0408	4.7000e-004	0.0412	0.0109	4.4000e-004	0.0113		46.1129	46.1129	2.0100e-003		46.1632

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	5.97	1.33	0.57	14,605	8,850
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5.97	1.33	0.57	14,605	8,850

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.555968	0.043848	0.210359	0.116378	0.016765	0.005795	0.025008	0.016160	0.001677	0.001586	0.004867	0.000586	0.001002
Other Non-Asphalt Surfaces	0.555968	0.043848	0.210359	0.116378	0.016765	0.005795	0.025008	0.016160	0.001677	0.001586	0.004867	0.000586	0.001002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
NaturalGas Unmitigated	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103

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					
General Office Building	13.6065	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.5000e-004**	**1.3300e-003**	**1.1200e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6008**	**1.6008**	**3.0000e-005**	**3.0000e-005**	**1.6103**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0.0136065	1.5000e-004	1.3300e-003	1.1200e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		1.6008	1.6008	3.0000e-005	3.0000e-005	1.6103
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.5000e-004**	**1.3300e-003**	**1.1200e-003**	**1.0000e-005**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**1.6008**	**1.6008**	**3.0000e-005**	**3.0000e-005**	**1.6103**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Unmitigated	0.0280	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.1300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0235					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5000e-004	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Total	**0.0280**	**3.0000e-005**	**3.7700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**8.0300e-003**	**8.0300e-003**	**2.0000e-005**		**8.5700e-003**

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	4.1300e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0235					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.5000e-004	3.0000e-005	3.7700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		8.0300e-003	8.0300e-003	2.0000e-005		8.5700e-003
Total	**0.0280**	**3.0000e-005**	**3.7700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**8.0300e-003**	**8.0300e-003**	**2.0000e-005**		**8.5700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

CalEEMod Model Annual Emissions Printouts and LEED Information

6819 Lions Park - Phase 1

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	11.58	1000sqft	0.27	22,860.00	0
Other Non-Asphalt Surfaces	141.09	1000sqft	3.24	141,087.00	0
Parking Lot	14.31	1000sqft	0.33	14,307.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - .

Land Use - Phase 1- 22,860 sf library (11,584 sf building footprint), 79,137 sf of walkways & plazas, 61,950 sf of landscaping & open space, and a 14,307 sf parking lot.

Construction Phase - Construction to start July 2017 and end December 2018.

Demolition - Existing ~22,750 sf Neighborhood Community Center to be demolished.

Grading - Per developer, fill 3,997 cubic feet - cut 994 cubic feet = 3,033 cubic feet fill. 3,033 cubic feet = 111.2 cubic yards fill.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Lions Park is located in the downtown portion of the City of Costa Mesa. OCTA Route 43 stop Park-19th is across Park Avenue (~53 feet or ~0.01 miles from project site).

Water Mitigation - Per Green Building Standards.

Waste Mitigation - AB 939 requires each jurisdiction in California to divert at least 50 percent of its waste away from landfills.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	18.00	10.00
tblConstructionPhase	NumDays	230.00	325.00
tblConstructionPhase	NumDays	8.00	25.00
tblConstructionPhase	NumDays	18.00	10.00
tblGrading	AcresOfGrading	12.50	4.00
tblGrading	MaterialImported	0.00	111.20
tblLandUse	BuildingSpaceSquareFeet	11,580.00	22,860.00
tblLandUse	BuildingSpaceSquareFeet	141,090.00	141,087.00
tblLandUse	BuildingSpaceSquareFeet	14,310.00	14,307.00
tblLandUse	LandUseSquareFeet	11,580.00	22,860.00
tblLandUse	LandUseSquareFeet	141,090.00	141,087.00
tblLandUse	LandUseSquareFeet	14,310.00	14,307.00
tblProjectCharacteristics	OperationalYear	2018	2019

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					
2017	0.2359	2.1743	1.4150	2.6700e-003	0.1361	0.1219	0.2580	0.0561	0.1139	0.1700	0.0000	244.0078	244.0078	0.0499	0.0000	245.2549
2018	0.5142	3.3447	2.6405	5.2300e-003	0.1226	0.1887	0.3113	0.0331	0.1774	0.2105	0.0000	473.3328	473.3328	0.0828	0.0000	475.4017
Maximum	**0.5142**	**3.3447**	**2.6405**	**5.2300e-003**	**0.1361**	**0.1887**	**0.3113**	**0.0561**	**0.1774**	**0.2105**	**0.0000**	**473.3328**	**473.3328**	**0.0828**	**0.0000**	**475.4017**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.2359	2.1743	1.4149	2.6700e-003	0.0820	0.1219	0.2039	0.0297	0.1139	0.1436	0.0000	244.0076	244.0076	0.0499	0.0000	245.2547
2018	0.5142	3.3446	2.6405	5.2300e-003	0.1226	0.1887	0.3113	0.0331	0.1774	0.2105	0.0000	473.3324	473.3324	0.0828	0.0000	475.4013
Maximum	**0.5142**	**3.3446**	**2.6405**	**5.2300e-003**	**0.1226**	**0.1887**	**0.3113**	**0.0331**	**0.1774**	**0.2105**	**0.0000**	**473.3324**	**473.3324**	**0.0828**	**0.0000**	**475.4013**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**20.89**	**0.00**	**9.49**	**29.62**	**0.00**	**6.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2017**	**9-30-2017**	1.3073	1.3073
2	**10-1-2017**	**12-31-2017**	1.1242	1.1242
3	**1-1-2018**	**3-31-2018**	0.9735	0.9735
4	**4-1-2018**	**6-30-2018**	0.9818	0.9818
5	**7-1-2018**	**9-30-2018**	0.9926	0.9926
		Highest	1.3073	1.3073

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1056	2.0000e-005	2.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1400e-003	4.1400e-003	1.0000e-005	0.0000	4.4200e-003
Energy	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	92.3781	92.3781	3.2500e-003	1.0400e-003	92.7691
Mobile	0.1682	0.7049	2.0610	6.6800e-003	0.5595	7.7000e-003	0.5672	0.1498	7.2400e-003	0.1571	0.0000	614.2511	614.2511	0.0284	0.0000	614.9613
Waste						0.0000	0.0000		0.0000	0.0000	2.1639	0.0000	2.1639	0.1279	0.0000	5.3609
Water						0.0000	0.0000		0.0000	0.0000	0.1150	3.5093	3.6243	0.0120	3.1000e-004	4.0151
Total	**0.2764**	**0.7284**	**2.0829**	**6.8200e-003**	**0.5595**	**9.5000e-003**	**0.5690**	**0.1498**	**9.0400e-003**	**0.1589**	**2.2788**	**710.1427**	**712.4215**	**0.1715**	**1.3500e-003**	**717.1108**

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	0.1056	2.0000e-005	2.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1400e-003	4.1400e-003	1.0000e-005	0.0000	4.4200e-003
Energy	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	92.3781	92.3781	3.2500e-003	1.0400e-003	92.7691
Mobile	0.1436	0.5274	1.4250	4.1000e-003	0.3322	4.8500e-003	0.3371	0.0890	4.5600e-003	0.0935	0.0000	377.0624	377.0624	0.0191	0.0000	377.5404
Waste						0.0000	0.0000		0.0000	0.0000	1.0819	0.0000	1.0819	0.0639	0.0000	2.6805
Water						0.0000	0.0000		0.0000	0.0000	0.0920	3.2087	3.3006	9.5800e-003	2.5000e-004	3.6147
Total	**0.2518**	**0.5509**	**1.4469**	**4.2400e-003**	**0.3322**	**6.6500e-003**	**0.3389**	**0.0890**	**6.3600e-003**	**0.0953**	**1.1739**	**472.6533**	**473.8272**	**0.0959**	**1.2900e-003**	**476.6091**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.93**	**24.37**	**30.53**	**37.83**	**40.62**	**30.00**	**40.44**	**40.61**	**29.65**	**39.99**	**48.49**	**33.44**	**33.49**	**44.08**	**4.44**	**33.54**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2017	7/28/2017	5	20	
2	Grading	Grading	7/29/2017	9/1/2017	5	25	
3	Building Construction	Building Construction	9/2/2017	11/30/2018	5	325	
4	Paving	Paving	12/1/2018	12/14/2018	5	10	
5	Architectural Coating	Architectural Coating	12/15/2018	12/28/2018	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 3.57

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 34,290; Non-Residential Outdoor: 11,430; Striped Parking Area: 9,324 (Architectural Coating – sqft)

OffRoad Equipment

6819 Lions Park - Phase 1 - Orange County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Demolition	6	15.00	0.00	103.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	14.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	75.00	29.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 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					
Fugitive Dust					0.0112	0.0000	0.0112	1.7000e-003	0.0000	1.7000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0410	0.4275	0.2301	3.9000e-004		0.0219	0.0219		0.0204	0.0204	0.0000	35.6005	35.6005	9.7300e-003	0.0000	35.8438
Total	**0.0410**	**0.4275**	**0.2301**	**3.9000e-004**	**0.0112**	**0.0219**	**0.0331**	**1.7000e-003**	**0.0204**	**0.0221**	**0.0000**	**35.6005**	**35.6005**	**9.7300e-003**	**0.0000**	**35.8438**

3.2 Demolition - 2017

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	5.3000e-004	0.0181	4.0000e-003	4.0000e-005	8.8000e-004	1.0000e-004	9.8000e-004	2.4000e-004	1.0000e-004	3.4000e-004	0.0000	4.0825	4.0825	4.4000e-004	0.0000	4.0934
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	6.3100e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5579	1.5579	5.0000e-005	0.0000	1.5591
Total	**1.2800e-003**	**0.0187**	**0.0103**	**6.0000e-005**	**2.5300e-003**	**1.1000e-004**	**2.6400e-003**	**6.8000e-004**	**1.1000e-004**	**7.9000e-004**	**0.0000**	**5.6404**	**5.6404**	**4.9000e-004**	**0.0000**	**5.6525**

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					4.3700e-003	0.0000	4.3700e-003	6.6000e-004	0.0000	6.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0410	0.4275	0.2301	3.9000e-004		0.0219	0.0219		0.0204	0.0204	0.0000	35.6005	35.6005	9.7300e-003	0.0000	35.8438
Total	**0.0410**	**0.4275**	**0.2301**	**3.9000e-004**	**4.3700e-003**	**0.0219**	**0.0263**	**6.6000e-004**	**0.0204**	**0.0211**	**0.0000**	**35.6005**	**35.6005**	**9.7300e-003**	**0.0000**	**35.8438**

3.2 Demolition - 2017

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	5.3000e-004	0.0181	4.0000e-003	4.0000e-005	8.8000e-004	1.0000e-004	9.8000e-004	2.4000e-004	1.0000e-004	3.4000e-004	0.0000	4.0825	4.0825	4.4000e-004	0.0000	4.0934
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	6.3100e-003	2.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5579	1.5579	5.0000e-005	0.0000	1.5591
Total	**1.2800e-003**	**0.0187**	**0.0103**	**6.0000e-005**	**2.5300e-003**	**1.1000e-004**	**2.6400e-003**	**6.8000e-004**	**1.1000e-004**	**7.9000e-004**	**0.0000**	**5.6404**	**5.6404**	**4.9000e-004**	**0.0000**	**5.6525**

3.3 Grading - 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					
Fugitive Dust					0.0774	0.0000	0.0774	0.0416	0.0000	0.0416	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0384	0.4236	0.2138	3.7000e-004		0.0222	0.0222		0.0204	0.0204	0.0000	34.4493	34.4493	0.0106	0.0000	34.7132
Total	**0.0384**	**0.4236**	**0.2138**	**3.7000e-004**	**0.0774**	**0.0222**	**0.0996**	**0.0416**	**0.0204**	**0.0621**	**0.0000**	**34.4493**	**34.4493**	**0.0106**	**0.0000**	**34.7132**

3.3 Grading - 2017

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	7.0000e-005	2.4700e-003	5.4000e-004	1.0000e-005	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5549	0.5549	6.0000e-005	0.0000	0.5564
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	7.3000e-004	7.8800e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.9474	1.9474	6.0000e-005	0.0000	1.9488
Total	**1.0100e-003**	**3.2000e-003**	**8.4200e-003**	**3.0000e-005**	**2.1800e-003**	**2.0000e-005**	**2.2000e-003**	**5.8000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.5023**	**2.5023**	**1.2000e-004**	**0.0000**	**2.5052**

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					0.0302	0.0000	0.0302	0.0162	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0384	0.4236	0.2138	3.7000e-004		0.0222	0.0222		0.0204	0.0204	0.0000	34.4493	34.4493	0.0106	0.0000	34.7132
Total	**0.0384**	**0.4236**	**0.2138**	**3.7000e-004**	**0.0302**	**0.0222**	**0.0524**	**0.0162**	**0.0204**	**0.0367**	**0.0000**	**34.4493**	**34.4493**	**0.0106**	**0.0000**	**34.7132**

3.3 Grading - 2017

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	7.0000e-005	2.4700e-003	5.4000e-004	1.0000e-005	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5549	0.5549	6.0000e-005	0.0000	0.5564
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	7.3000e-004	7.8800e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0700e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.9474	1.9474	6.0000e-005	0.0000	1.9488
Total	**1.0100e-003**	**3.2000e-003**	**8.4200e-003**	**3.0000e-005**	**2.1800e-003**	**2.0000e-005**	**2.2000e-003**	**5.8000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.5023**	**2.5023**	**1.2000e-004**	**0.0000**	**2.5052**

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	0.1324	1.1286	0.7728	1.1400e-003		0.0760	0.0760		0.0714	0.0714	0.0000	102.2095	102.2095	0.0252	0.0000	102.8390
Total	**0.1324**	**1.1286**	**0.7728**	**1.1400e-003**		**0.0760**	**0.0760**		**0.0714**	**0.0714**	**0.0000**	**102.2095**	**102.2095**	**0.0252**	**0.0000**	**102.8390**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-003	0.1603	0.0455	3.1000e-004	7.7600e-003	1.3800e-003	9.1400e-003	2.2400e-003	1.3200e-003	3.5600e-003	0.0000	30.5000	30.5000	2.8500e-003	0.0000	30.5712
Worker	0.0160	0.0125	0.1340	3.7000e-004	0.0350	2.4000e-004	0.0352	9.2900e-003	2.2000e-004	9.5100e-003	0.0000	33.1058	33.1058	9.7000e-004	0.0000	33.1300
Total	**0.0218**	**0.1728**	**0.1795**	**6.8000e-004**	**0.0428**	**1.6200e-003**	**0.0444**	**0.0115**	**1.5400e-003**	**0.0131**	**0.0000**	**63.6058**	**63.6058**	**3.8200e-003**	**0.0000**	**63.7011**

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	0.1324	1.1286	0.7728	1.1400e-003		0.0760	0.0760		0.0714	0.0714	0.0000	102.2093	102.2093	0.0252	0.0000	102.8389
Total	**0.1324**	**1.1286**	**0.7728**	**1.1400e-003**		**0.0760**	**0.0760**		**0.0714**	**0.0714**	**0.0000**	**102.2093**	**102.2093**	**0.0252**	**0.0000**	**102.8389**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.8000e-003	0.1603	0.0455	3.1000e-004	7.7600e-003	1.3800e-003	9.1400e-003	2.2400e-003	1.3200e-003	3.5600e-003	0.0000	30.5000	30.5000	2.8500e-003	0.0000	30.5712
Worker	0.0160	0.0125	0.1340	3.7000e-004	0.0350	2.4000e-004	0.0352	9.2900e-003	2.2000e-004	9.5100e-003	0.0000	33.1058	33.1058	9.7000e-004	0.0000	33.1300
Total	**0.0218**	**0.1728**	**0.1795**	**6.8000e-004**	**0.0428**	**1.6200e-003**	**0.0444**	**0.0115**	**1.5400e-003**	**0.0131**	**0.0000**	**63.6058**	**63.6058**	**3.8200e-003**	**0.0000**	**63.7011**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3215	2.8068	2.1097	3.2300e-003		0.1800	0.1800		0.1692	0.1692	0.0000	285.3207	285.3207	0.0699	0.0000	287.0683
Total	**0.3215**	**2.8068**	**2.1097**	**3.2300e-003**		**0.1800**	**0.1800**		**0.1692**	**0.1692**	**0.0000**	**285.3207**	**285.3207**	**0.0699**	**0.0000**	**287.0683**

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0144	0.4237	0.1169	8.7000e-004	0.0219	3.1000e-003	0.0250	6.3200e-003	2.9600e-003	9.2800e-003	0.0000	85.7286	85.7286	7.7000e-003	0.0000	85.9211
Worker	0.0408	0.0309	0.3360	1.0000e-003	0.0988	6.6000e-004	0.0995	0.0262	6.1000e-004	0.0269	0.0000	90.7485	90.7485	2.4100e-003	0.0000	90.8088
Total	**0.0552**	**0.4546**	**0.4529**	**1.8700e-003**	**0.1207**	**3.7600e-003**	**0.1245**	**0.0326**	**3.5700e-003**	**0.0361**	**0.0000**	**176.4772**	**176.4772**	**0.0101**	**0.0000**	**176.7299**

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	0.3215	2.8068	2.1097	3.2300e-003		0.1800	0.1800		0.1692	0.1692	0.0000	285.3203	285.3203	0.0699	0.0000	287.0679
Total	**0.3215**	**2.8068**	**2.1097**	**3.2300e-003**		**0.1800**	**0.1800**		**0.1692**	**0.1692**	**0.0000**	**285.3203**	**285.3203**	**0.0699**	**0.0000**	**287.0679**

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0144	0.4237	0.1169	8.7000e-004	0.0219	3.1000e-003	0.0250	6.3200e-003	2.9600e-003	9.2800e-003	0.0000	85.7286	85.7286	7.7000e-003	0.0000	85.9211
Worker	0.0408	0.0309	0.3360	1.0000e-003	0.0988	6.6000e-004	0.0995	0.0262	6.1000e-004	0.0269	0.0000	90.7485	90.7485	2.4100e-003	0.0000	90.8088
Total	**0.0552**	**0.4546**	**0.4529**	**1.8700e-003**	**0.1207**	**3.7600e-003**	**0.1245**	**0.0326**	**3.5700e-003**	**0.0361**	**0.0000**	**176.4772**	**176.4772**	**0.0101**	**0.0000**	**176.7299**

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1200e-003	0.0726	0.0622	9.0000e-005		4.1800e-003	4.1800e-003		3.8600e-003	3.8600e-003	0.0000	8.4938	8.4938	2.5700e-003	0.0000	8.5581
Paving	4.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5500e-003**	**0.0726**	**0.0622**	**9.0000e-005**		**4.1800e-003**	**4.1800e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**8.4938**	**8.4938**	**2.5700e-003**	**0.0000**	**8.5581**

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.4000e-004	3.7300e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0083	1.0083	3.0000e-005	0.0000	1.0090
Total	**4.5000e-004**	**3.4000e-004**	**3.7300e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0083**	**1.0083**	**3.0000e-005**	**0.0000**	**1.0090**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1200e-003	0.0726	0.0622	9.0000e-005		4.1800e-003	4.1800e-003		3.8600e-003	3.8600e-003	0.0000	8.4937	8.4937	2.5700e-003	0.0000	8.5581
Paving	4.3000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5500e-003**	**0.0726**	**0.0622**	**9.0000e-005**		**4.1800e-003**	**4.1800e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**8.4937**	**8.4937**	**2.5700e-003**	**0.0000**	**8.5581**

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.4000e-004	3.7300e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	1.0083	1.0083	3.0000e-005	0.0000	1.0090
Total	**4.5000e-004**	**3.4000e-004**	**3.7300e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**1.0083**	**1.0083**	**3.0000e-005**	**0.0000**	**1.0090**

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total	**0.1291**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2797**

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.6000e-004	2.8000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7562	0.7562	2.0000e-005	0.0000	0.7567
Total	**3.4000e-004**	**2.6000e-004**	**2.8000e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7562**	**0.7562**	**2.0000e-005**	**0.0000**	**0.7567**

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	0.1276					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0100	9.2700e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004	0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total	**0.1291**	**0.0100**	**9.2700e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.5000e-004**	**7.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.2000e-004**	**0.0000**	**1.2797**

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.6000e-004	2.8000e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7562	0.7562	2.0000e-005	0.0000	0.7567
Total	**3.4000e-004**	**2.6000e-004**	**2.8000e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7562**	**0.7562**	**2.0000e-005**	**0.0000**	**0.7567**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.1436	0.5274	1.4250	4.1000e-003	0.3322	4.8500e-003	0.3371	0.0890	4.5600e-003	0.0935	0.0000	377.0624	377.0624	0.0191	0.0000	377.5404
Unmitigated	0.1682	0.7049	2.0610	6.6800e-003	0.5595	7.7000e-003	0.5672	0.1498	7.2400e-003	0.1571	0.0000	614.2511	614.2511	0.0284	0.0000	614.9613

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Library	651.26	539.05	295.17	1,475,325	876,120
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	651.26	539.05	295.17	1,475,325	876,120

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Library	16.60	8.40	6.90	52.00	43.00	5.00	44	44	12
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Library	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041
Other Non-Asphalt Surfaces	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041
Parking Lot	0.552373	0.044229	0.211123	0.119112	0.017503	0.005797	0.024455	0.015685	0.001637	0.001633	0.004830	0.000583	0.001041

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	66.7969	66.7969	2.7600e-003	5.7000e-004	67.0358
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	66.7969	66.7969	2.7600e-003	5.7000e-004	67.0358
NaturalGas Mitigated	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	25.5812	25.5812	4.9000e-004	4.7000e-004	25.7333
NaturalGas Unmitigated	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	25.5812	25.5812	4.9000e-004	4.7000e-004	25.7333

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					
Library	479374	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	25.5812	25.5812	4.9000e-004	4.7000e-004	25.7333
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.5800e-003**	**0.0235**	**0.0197**	**1.4000e-004**		**1.7900e-003**	**1.7900e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**25.5812**	**25.5812**	**4.9000e-004**	**4.7000e-004**	**25.7333**

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					
Library	479374	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	25.5812	25.5812	4.9000e-004	4.7000e-004	25.7333
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**2.5800e-003**	**0.0235**	**0.0197**	**1.4000e-004**		**1.7900e-003**	**1.7900e-003**		**1.7900e-003**	**1.7900e-003**	**0.0000**	**25.5812**	**25.5812**	**4.9000e-004**	**4.7000e-004**	**25.7333**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	197053	62.7854	2.5900e-003	5.4000e-004	63.0100
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	12590.2	4.0115	1.7000e-004	3.0000e-005	4.0259
Total		**66.7969**	**2.7600e-003**	**5.7000e-004**	**67.0358**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Library	197053	62.7854	2.5900e-003	5.4000e-004	63.0100
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	12590.2	4.0115	1.7000e-004	3.0000e-005	4.0259
Total		**66.7969**	**2.7600e-003**	**5.7000e-004**	**67.0358**

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	0.1056	2.0000e-005	2.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1400e-003	4.1400e-003	1.0000e-005	0.0000	4.4200e-003
Unmitigated	0.1056	2.0000e-005	2.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1400e-003	4.1400e-003	1.0000e-005	0.0000	4.4200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1400e-003	4.1400e-003	1.0000e-005	0.0000	4.4200e-003
Total	**0.1056**	**2.0000e-005**	**2.1500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.1400e-003**	**4.1400e-003**	**1.0000e-005**	**0.0000**	**4.4200e-003**

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	0.0128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0927					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-004	2.0000e-005	2.1500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.1400e-003	4.1400e-003	1.0000e-005	0.0000	4.4200e-003
Total	**0.1056**	**2.0000e-005**	**2.1500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.1400e-003**	**4.1400e-003**	**1.0000e-005**	**0.0000**	**4.4200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.3006	9.5800e-003	2.5000e-004	3.6147
Unmitigated	3.6243	0.0120	3.1000e-004	4.0151

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	0.362326 / 0.566714	3.6243	0.0120	3.1000e-004	4.0151
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.6243**	**0.0120**	**3.1000e-004**	**4.0151**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Library	0.28986 / 0.566714	3.3006	9.5800e-003	2.5000e-004	3.6147
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**3.3006**	**9.5800e-003**	**2.5000e-004**	**3.6147**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.0819	0.0639	0.0000	2.6805
Unmitigated	2.1639	0.1279	0.0000	5.3609

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	10.66	2.1639	0.1279	0.0000	5.3609
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.1639**	**0.1279**	**0.0000**	**5.3609**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Library	5.33	1.0819	0.0639	0.0000	2.6805
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.0819**	**0.0639**	**0.0000**	**2.6805**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

6819 Lions Park- Off-site Improvments CONSTRUCTION ANALYSIS ONLY

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	18.41	1000sqft	0.42	18,415.00	0
Other Non-Asphalt Surfaces	1.37	1000sqft	0.03	1,365.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CONSTRUCTION ANALYSIS ONLY

Land Use - Park Ave- total 17,430sf: 580ft x ~28ft = 16,240sf paving (includes 27 prkg spcs) & remainder landscaping. Anaheim Ave- total 2,350sf: 145ft x ~15ft = 2,175sf & remainder landscaping.

Construction Phase - Off-site improvements to occur during Phase 1 (July 2017 to December 2018).

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Demolition -

Grading -

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblLandUse	BuildingSpaceSquareFeet	18,410.00	18,415.00
tblLandUse	BuildingSpaceSquareFeet	1,370.00	1,365.00
tblLandUse	LandUseSquareFeet	18,410.00	18,415.00
tblLandUse	LandUseSquareFeet	1,370.00	1,365.00

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					
2017	3.8500e-003	0.0304	0.0225	4.0000e-005	7.9000e-004	1.7600e-003	2.5500e-003	1.7000e-004	1.6300e-003	1.8000e-003	0.0000	3.4077	3.4077	8.4000e-004	0.0000	3.4286
Maximum	**3.8500e-003**	**0.0304**	**0.0225**	**4.0000e-005**	**7.9000e-004**	**1.7600e-003**	**2.5500e-003**	**1.7000e-004**	**1.6300e-003**	**1.8000e-003**	**0.0000**	**3.4077**	**3.4077**	**8.4000e-004**	**0.0000**	**3.4286**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	3.8500e-003	0.0304	0.0225	4.0000e-005	6.2000e-004	1.7600e-003	2.3900e-003	1.5000e-004	1.6300e-003	1.7800e-003	0.0000	3.4077	3.4077	8.4000e-004	0.0000	3.4286
Maximum	**3.8500e-003**	**0.0304**	**0.0225**	**4.0000e-005**	**6.2000e-004**	**1.7600e-003**	**2.3900e-003**	**1.5000e-004**	**1.6300e-003**	**1.7800e-003**	**0.0000**	**3.4077**	**3.4077**	**8.4000e-004**	**0.0000**	**3.4286**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**21.52**	**0.00**	**6.27**	**11.76**	**0.00**	**1.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-2-2017**	**9-30-2017**	0.0407	0.0407
		Highest	0.0407	0.0407

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/2/2017	9/4/2017	5	1	
2	Paving	Paving	9/5/2017	9/11/2017	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 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					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0260	0.0260	0.0000	0.0000	0.0260
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0260**	**0.0260**	**0.0000**	**0.0000**	**0.0260**

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					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**1.0000e-004**	**2.4000e-004**	**3.4000e-004**	**1.0000e-005**	**2.2000e-004**	**2.3000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0260	0.0260	0.0000	0.0000	0.0260
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0260**	**0.0260**	**0.0000**	**0.0000**	**0.0260**

3.3 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	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	5.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1800e-003**	**0.0249**	**0.0184**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**2.4610**	**2.4610**	**6.8000e-004**	**0.0000**	**2.4781**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.8000e-004	1.8900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4674	0.4674	1.0000e-005	0.0000	0.4677
Total	**2.3000e-004**	**1.8000e-004**	**1.8900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4674**	**0.4674**	**1.0000e-005**	**0.0000**	**0.4677**

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	2.6300e-003	0.0249	0.0184	3.0000e-005		1.5200e-003	1.5200e-003		1.4100e-003	1.4100e-003	0.0000	2.4610	2.4610	6.8000e-004	0.0000	2.4781
Paving	5.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1800e-003**	**0.0249**	**0.0184**	**3.0000e-005**		**1.5200e-003**	**1.5200e-003**		**1.4100e-003**	**1.4100e-003**	**0.0000**	**2.4610**	**2.4610**	**6.8000e-004**	**0.0000**	**2.4781**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.3000e-004	1.8000e-004	1.8900e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4674	0.4674	1.0000e-005	0.0000	0.4677
Total	**2.3000e-004**	**1.8000e-004**	**1.8900e-003**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4674**	**0.4674**	**1.0000e-005**	**0.0000**	**0.4677**

6819 Lions Park - Phase 2

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.54	1000sqft	0.01	541.00	0
Other Non-Asphalt Surfaces	36.15	1000sqft	0.83	36,152.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - .

Land Use - Phase 2- new 9,281 sf NCC building by renovation/expansion of existing 8,740 sf library = 541 sf newly construced portion of building, 28,553 sf walkways/plazas, & 7,599 sf landscaping/OS.

Construction Phase - Construction to start February 2019 and end February 2020.

Demolition -

Grading - In land use section Phase 1 estimated as ~0.86 acres. Per developer, cut 156 cubic feet - fill 80 cubic feet = 76 cubic feet cut. 76 cubic feet = 2.81 cubic yards cut.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - Lions Park is located in downtown City of Costa Mesa. OCTA Route 43 stop Park-19th located across Park Avenue (~53 feet or 0.01 miles from site).

Water Mitigation - Per California Green Building Standards.

Waste Mitigation - AB 939 requires each jurisdiction in California to divert at least 50 percent of its waste away from landfills.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblGrading	AcresOfGrading	0.00	0.86
tblGrading	MaterialExported	0.00	2.81
tblProjectCharacteristics	OperationalYear	2018	2020

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					
2019	0.1240	1.2529	0.9801	1.7200e-003	0.0263	0.0726	0.0989	7.3800e-003	0.0668	0.0742	0.0000	156.4263	156.4263	0.0402	0.0000	157.4313
2020	0.0314	0.1544	0.1403	2.5000e-004	3.4800e-003	8.6000e-003	0.0121	9.3000e-004	7.9700e-003	8.9100e-003	0.0000	21.7964	21.7964	5.3900e-003	0.0000	21.9311
Maximum	**0.1240**	**1.2529**	**0.9801**	**1.7200e-003**	**0.0263**	**0.0726**	**0.0989**	**7.3800e-003**	**0.0668**	**0.0742**	**0.0000**	**156.4263**	**156.4263**	**0.0402**	**0.0000**	**157.4313**

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					
2019	0.1240	1.2529	0.9801	1.7200e-003	0.0249	0.0726	0.0974	6.8100e-003	0.0668	0.0736	0.0000	156.4261	156.4261	0.0402	0.0000	157.4312
2020	0.0314	0.1544	0.1403	2.5000e-004	3.4800e-003	8.6000e-003	0.0121	9.3000e-004	7.9700e-003	8.9100e-003	0.0000	21.7964	21.7964	5.3900e-003	0.0000	21.9311
Maximum	**0.1240**	**1.2529**	**0.9801**	**1.7200e-003**	**0.0249**	**0.0726**	**0.0974**	**6.8100e-003**	**0.0668**	**0.0736**	**0.0000**	**156.4261**	**156.4261**	**0.0402**	**0.0000**	**157.4312**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**4.93**	**0.00**	**1.32**	**6.86**	**0.00**	**0.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	2-1-2019	4-30-2019	0.3643	0.3643
2	5-1-2019	7-31-2019	0.3806	0.3806
3	8-1-2019	10-31-2019	0.3808	0.3808
4	11-1-2019	1-31-2020	0.3685	0.3685
5	2-1-2020	4-30-2020	0.0654	0.0654
		Highest	0.3808	0.3808

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0900e-003	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.1000e-004	9.1000e-004	0.0000	0.0000	9.7000e-004
Energy	3.0000e-005	2.4000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	2.7369	2.7369	1.1000e-004	3.0000e-005	2.7473
Mobile	1.3200e-003	5.8500e-003	0.0178	6.0000e-005	5.5400e-003	6.0000e-005	5.6000e-003	1.4800e-003	6.0000e-005	1.5400e-003	0.0000	5.8556	5.8556	2.5000e-004	0.0000	5.8619
Waste						0.0000	0.0000		0.0000	0.0000	0.1015	0.0000	0.1015	6.0000e-003	0.0000	0.2515
Water						0.0000	0.0000		0.0000	0.0000	0.0305	0.6064	0.6369	3.1500e-003	8.0000e-005	0.7392
Total	**6.4400e-003**	**6.0900e-003**	**0.0185**	**6.0000e-005**	**5.5400e-003**	**8.0000e-005**	**5.6200e-003**	**1.4800e-003**	**8.0000e-005**	**1.5600e-003**	**0.1320**	**9.1998**	**9.3317**	**9.5100e-003**	**1.1000e-004**	**9.6008**

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	5.0900e-003	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.1000e-004	9.1000e-004	0.0000	0.0000	9.7000e-004
Energy	3.0000e-005	2.4000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	2.7369	2.7369	1.1000e-004	3.0000e-005	2.7473
Mobile	1.1000e-003	4.3500e-003	0.0122	4.0000e-005	3.3600e-003	4.0000e-005	3.4000e-003	9.0000e-004	4.0000e-005	9.4000e-004	0.0000	3.6409	3.6409	1.7000e-004	0.0000	3.6451
Waste						0.0000	0.0000		0.0000	0.0000	0.0508	0.0000	0.0508	3.0000e-003	0.0000	0.1257
Water						0.0000	0.0000		0.0000	0.0000	0.0244	0.5268	0.5511	2.5200e-003	6.0000e-005	0.6332
Total	**6.2200e-003**	**4.5900e-003**	**0.0128**	**4.0000e-005**	**3.3600e-003**	**6.0000e-005**	**3.4200e-003**	**9.0000e-004**	**6.0000e-005**	**9.6000e-004**	**0.0751**	**6.9054**	**6.9806**	**5.8000e-003**	**9.0000e-005**	**7.1523**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.42**	**24.63**	**30.59**	**33.33**	**39.35**	**25.00**	**39.15**	**39.19**	**25.00**	**38.46**	**43.08**	**24.94**	**25.20**	**39.01**	**18.18**	**25.50**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/1/2019	2/6/2019	5	2	
2	Building Construction	Building Construction	2/7/2019	1/31/2020	5	100	
3	Paving	Paving	2/1/2020	2/14/2020	5	5	
4	Architectural Coating	Architectural Coating	2/15/2020	2/28/2020	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.86

Acres of Paving: 0.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 812; Non-Residential Outdoor: 271; Striped Parking Area: 2,169 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	15.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4200e-003	0.0000	2.4200e-003	9.3000e-004	0.0000	9.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9100e-003	0.0172	0.0154	2.0000e-005		1.0700e-003	1.0700e-003		1.0200e-003	1.0200e-003	0.0000	2.1041	2.1041	4.0000e-004	0.0000	2.1141
Total	**1.9100e-003**	**0.0172**	**0.0154**	**2.0000e-005**	**2.4200e-003**	**1.0700e-003**	**3.4900e-003**	**9.3000e-004**	**1.0200e-003**	**1.9500e-003**	**0.0000**	**2.1041**	**2.1041**	**4.0000e-004**	**0.0000**	**2.1141**

3.2 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.8000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1963	0.1963	0.0000	0.0000	0.1964
Total	**8.0000e-005**	**6.0000e-005**	**6.8000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1963**	**0.1963**	**0.0000**	**0.0000**	**0.1964**

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					9.4000e-004	0.0000	9.4000e-004	3.6000e-004	0.0000	3.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9100e-003	0.0172	0.0154	2.0000e-005		1.0700e-003	1.0700e-003		1.0200e-003	1.0200e-003	0.0000	2.1040	2.1040	4.0000e-004	0.0000	2.1141
Total	**1.9100e-003**	**0.0172**	**0.0154**	**2.0000e-005**	**9.4000e-004**	**1.0700e-003**	**2.0100e-003**	**3.6000e-004**	**1.0200e-003**	**1.3800e-003**	**0.0000**	**2.1040**	**2.1040**	**4.0000e-004**	**0.0000**	**2.1141**

3.2 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.8000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1963	0.1963	0.0000	0.0000	0.1964
Total	**8.0000e-005**	**6.0000e-005**	**6.8000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**2.2000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.1963**	**0.1963**	**0.0000**	**0.0000**	**0.1964**

3.3 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1120	1.1490	0.8826	1.3300e-003		0.0708	0.0708		0.0652	0.0652	0.0000	119.6916	119.6916	0.0379	0.0000	120.6383
Total	**0.1120**	**1.1490**	**0.8826**	**1.3300e-003**		**0.0708**	**0.0708**		**0.0652**	**0.0652**	**0.0000**	**119.6916**	**119.6916**	**0.0379**	**0.0000**	**120.6383**

3.3 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6800e-003	0.0812	0.0221	1.7000e-004	4.4200e-003	5.4000e-004	4.9600e-003	1.2700e-003	5.2000e-004	1.7900e-003	0.0000	17.2070	17.2070	1.5000e-003	0.0000	17.2445
Worker	7.3300e-003	5.3500e-003	0.0594	1.9000e-004	0.0193	1.3000e-004	0.0194	5.1200e-003	1.2000e-004	5.2400e-003	0.0000	17.2274	17.2274	4.2000e-004	0.0000	17.2380
Total	**0.0100**	**0.0866**	**0.0815**	**3.6000e-004**	**0.0237**	**6.7000e-004**	**0.0244**	**6.3900e-003**	**6.4000e-004**	**7.0300e-003**	**0.0000**	**34.4344**	**34.4344**	**1.9200e-003**	**0.0000**	**34.4825**

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	0.1120	1.1490	0.8826	1.3300e-003		0.0708	0.0708		0.0652	0.0652	0.0000	119.6914	119.6914	0.0379	0.0000	120.6381
Total	**0.1120**	**1.1490**	**0.8826**	**1.3300e-003**		**0.0708**	**0.0708**		**0.0652**	**0.0652**	**0.0000**	**119.6914**	**119.6914**	**0.0379**	**0.0000**	**120.6381**

3.3 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6800e-003	0.0812	0.0221	1.7000e-004	4.4200e-003	5.4000e-004	4.9600e-003	1.2700e-003	5.2000e-004	1.7900e-003	0.0000	17.2070	17.2070	1.5000e-003	0.0000	17.2445
Worker	7.3300e-003	5.3500e-003	0.0594	1.9000e-004	0.0193	1.3000e-004	0.0194	5.1200e-003	1.2000e-004	5.2400e-003	0.0000	17.2274	17.2274	4.2000e-004	0.0000	17.2380
Total	**0.0100**	**0.0866**	**0.0815**	**3.6000e-004**	**0.0237**	**6.7000e-004**	**0.0244**	**6.3900e-003**	**6.4000e-004**	**7.0300e-003**	**0.0000**	**34.4344**	**34.4344**	**1.9200e-003**	**0.0000**	**34.4825**

3.3 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9100e-003	0.1018	0.0850	1.3000e-004		6.0100e-003	6.0100e-003		5.5300e-003	5.5300e-003	0.0000	11.5070	11.5070	3.7200e-003	0.0000	11.6000
Total	**9.9100e-003**	**0.1018**	**0.0850**	**1.3000e-004**		**6.0100e-003**	**6.0100e-003**		**5.5300e-003**	**5.5300e-003**	**0.0000**	**11.5070**	**11.5070**	**3.7200e-003**	**0.0000**	**11.6000**

3.3 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	7.3200e-003	1.9900e-003	2.0000e-005	4.3000e-004	4.0000e-005	4.7000e-004	1.3000e-004	4.0000e-005	1.6000e-004	0.0000	1.6796	1.6796	1.4000e-004	0.0000	1.6831
Worker	6.7000e-004	4.7000e-004	5.3500e-003	2.0000e-005	1.8900e-003	1.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6390	1.6390	4.0000e-005	0.0000	1.6400
Total	**8.9000e-004**	**7.7900e-003**	**7.3400e-003**	**4.0000e-005**	**2.3200e-003**	**5.0000e-005**	**2.3800e-003**	**6.3000e-004**	**5.0000e-005**	**6.7000e-004**	**0.0000**	**3.3187**	**3.3187**	**1.8000e-004**	**0.0000**	**3.3231**

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	9.9100e-003	0.1018	0.0850	1.3000e-004		6.0100e-003	6.0100e-003		5.5300e-003	5.5300e-003	0.0000	11.5069	11.5069	3.7200e-003	0.0000	11.6000
Total	**9.9100e-003**	**0.1018**	**0.0850**	**1.3000e-004**		**6.0100e-003**	**6.0100e-003**		**5.5300e-003**	**5.5300e-003**	**0.0000**	**11.5069**	**11.5069**	**3.7200e-003**	**0.0000**	**11.6000**

3.3 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2000e-004	7.3200e-003	1.9900e-003	2.0000e-005	4.3000e-004	4.0000e-005	4.7000e-004	1.3000e-004	4.0000e-005	1.6000e-004	0.0000	1.6796	1.6796	1.4000e-004	0.0000	1.6831
Worker	6.7000e-004	4.7000e-004	5.3500e-003	2.0000e-005	1.8900e-003	1.0000e-005	1.9100e-003	5.0000e-004	1.0000e-005	5.1000e-004	0.0000	1.6390	1.6390	4.0000e-005	0.0000	1.6400
Total	**8.9000e-004**	**7.7900e-003**	**7.3400e-003**	**4.0000e-005**	**2.3200e-003**	**5.0000e-005**	**2.3800e-003**	**6.3000e-004**	**5.0000e-005**	**6.7000e-004**	**0.0000**	**3.3187**	**3.3187**	**1.8000e-004**	**0.0000**	**3.3231**

3.4 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8600e-003**	**0.0361**	**0.0356**	**6.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.6965**	**4.6965**	**1.3700e-003**	**0.0000**	**4.7307**

3.4 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.5000e-004	2.7900e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8551	0.8551	2.0000e-005	0.0000	0.8556
Total	**3.5000e-004**	**2.5000e-004**	**2.7900e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8551**	**0.8551**	**2.0000e-005**	**0.0000**	**0.8556**

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	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8600e-003**	**0.0361**	**0.0356**	**6.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.6965**	**4.6965**	**1.3700e-003**	**0.0000**	**4.7307**

3.4 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	2.5000e-004	2.7900e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8551	0.8551	2.0000e-005	0.0000	0.8556
Total	**3.5000e-004**	**2.5000e-004**	**2.7900e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8551**	**0.8551**	**2.0000e-005**	**0.0000**	**0.8556**

3.5 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0163**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.5 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.6000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1425	0.1425	0.0000	0.0000	0.1426
Total	**6.0000e-005**	**4.0000e-005**	**4.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1425**	**0.1425**	**0.0000**	**0.0000**	**0.1426**

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	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0163**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.5 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.6000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1425	0.1425	0.0000	0.0000	0.1426
Total	**6.0000e-005**	**4.0000e-005**	**4.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.7000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1425**	**0.1425**	**0.0000**	**0.0000**	**0.1426**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1000e-003	4.3500e-003	0.0122	4.0000e-005	3.3600e-003	4.0000e-005	3.4000e-003	9.0000e-004	4.0000e-005	9.4000e-004	0.0000	3.6409	3.6409	1.7000e-004	0.0000	3.6451
Unmitigated	1.3200e-003	5.8500e-003	0.0178	6.0000e-005	5.5400e-003	6.0000e-005	5.6000e-003	1.4800e-003	6.0000e-005	1.5400e-003	0.0000	5.8556	5.8556	2.5000e-004	0.0000	5.8619

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	5.97	1.33	0.57	14,605	8,850
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	5.97	1.33	0.57	14,605	8,850

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.555968	0.043848	0.210359	0.116378	0.016765	0.005795	0.025008	0.016160	0.001677	0.001586	0.004867	0.000586	0.001002
Other Non-Asphalt Surfaces	0.555968	0.043848	0.210359	0.116378	0.016765	0.005795	0.025008	0.016160	0.001677	0.001586	0.004867	0.000586	0.001002

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.4719	2.4719	1.0000e-004	2.0000e-005	2.4807
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.4719	2.4719	1.0000e-004	2.0000e-005	2.4807
NaturalGas Mitigated	3.0000e-005	2.4000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2650	0.2650	1.0000e-005	0.0000	0.2666
NaturalGas Unmitigated	3.0000e-005	2.4000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2650	0.2650	1.0000e-005	0.0000	0.2666

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					
General Office Building	4966.38	3.0000e-005	2.4000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2650	0.2650	1.0000e-005	0.0000	0.2666
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.0000e-005**	**2.4000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2650**	**0.2650**	**1.0000e-005**	**0.0000**	**0.2666**

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					
General Office Building	4966.38	3.0000e-005	2.4000e-004	2.0000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.2650	0.2650	1.0000e-005	0.0000	0.2666
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.0000e-005**	**2.4000e-004**	**2.0000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.2650**	**0.2650**	**1.0000e-005**	**0.0000**	**0.2666**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	7757.94	2.4719	1.0000e-004	2.0000e-005	2.4807
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**2.4719**	**1.0000e-004**	**2.0000e-005**	**2.4807**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	7757.94	2.4719	1.0000e-004	2.0000e-005	2.4807
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**2.4719**	**1.0000e-004**	**2.0000e-005**	**2.4807**

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	5.0900e-003	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.1000e-004	9.1000e-004	0.0000	0.0000	9.7000e-004
Unmitigated	5.0900e-003	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.1000e-004	9.1000e-004	0.0000	0.0000	9.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.1000e-004	9.1000e-004	0.0000	0.0000	9.7000e-004
Total	**5.0800e-003**	**0.0000**	**4.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.1000e-004**	**9.1000e-004**	**0.0000**	**0.0000**	**9.7000e-004**

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	7.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.1000e-004	9.1000e-004	0.0000	0.0000	9.7000e-004
Total	**5.0800e-003**	**0.0000**	**4.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.1000e-004**	**9.1000e-004**	**0.0000**	**0.0000**	**9.7000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.5511	2.5200e-003	6.0000e-005	0.6332
Unmitigated	0.6369	3.1500e-003	8.0000e-005	0.7392

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.0959762 / 0.0588241	0.6369	3.1500e-003	8.0000e-005	0.7392
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.6369**	**3.1500e-003**	**8.0000e-005**	**0.7392**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.076781 / 0.0588241	0.5511	2.5200e-003	6.0000e-005	0.6332
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.5511**	**2.5200e-003**	**6.0000e-005**	**0.6332**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0508	3.0000e-003	0.0000	0.1257
Unmitigated	0.1015	6.0000e-003	0.0000	0.2515

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0.5	0.1015	6.0000e-003	0.0000	0.2515
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.1015**	**6.0000e-003**	**0.0000**	**0.2515**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	0.25	0.0508	3.0000e-003	0.0000	0.1257
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0508**	**3.0000e-003**	**0.0000**	**0.1257**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

LEED 2009 for New Construction and Major Renovations

Scorecard - Donald Dungan Library
11/30/16

INTEGRAL GROUP

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65	24	22	**Project Total**			**Possible Points: 110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Sustainable Sites — Possible Points: 26

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Y			c	Prereq 1	Construction Activity Pollution Prevention	
1			d	Credit 1	Site Selection	1
5			d	Credit 2	Development Density and Community Connectivity	5
	1		d	Credit 3	Brownfield Redevelopment	1
6			d	Credit 4.1	Alternative Transportation—Public Transportation Access	6
		1	d	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			d	Credit 4.3	Alternative Transportation—Low-Emitting, Fuel-Efficient Vehicles	3
2			d	Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		c	Credit 5.1	Site Development—Protect or Restore Habitat	1
1			d	Credit 5.2	Site Development—Maximize Open Space	1
1			d	Credit 6.1	Stormwater Design—Quantity Control	1
1			d	Credit 6.2	Stormwater Design—Quality Control	1
1			c	Credit 7.1	Heat Island Effect—Non-roof	1
1			d	Credit 7.2	Heat Island Effect—Roof	1
	1		d	Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

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Y			d	Prereq 1	Water Use Reduction—20% Reduction	
	2	2	d	Credit 1	Water Efficient Landscaping	2 to 4
		2	d	Credit 2	Innovative Wastewater Technologies	2
4			d	Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

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Y			c	Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			d	Prereq 2	Minimum Energy Performance	
Y			d	Prereq 3	Fundamental Refrigerant Management	
4	6	9	d	Credit 1	Optimize Energy Performance	1 to 19
	7		d	Credit 2	On-Site Renewable Energy	1 to 7
2			c	Credit 3	Enhanced Commissioning	2
2			d	Credit 4	Enhanced Refrigerant Management	2
3			c	Credit 5	Measurement and Verification	3
2			c	Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

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Y			d	Prereq 1	Storage and Collection of Recyclables	
		3	c	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	c	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			c	Credit 2	Construction Waste Management	1 to 2
		2	c	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

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2			c	Credit 4	Recycled Content	1 to 2
2			c	Credit 5	Regional Materials	1 to 2
		1	c	Credit 6	Rapidly Renewable Materials	1
1			c	Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

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Y			d	Prereq 1	Minimum Indoor Air Quality Performance	
Y			d	Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			d	Credit 1	Outdoor Air Delivery Monitoring	1
	1		d	Credit 2	Increased Ventilation	1
1			c	Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			c	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			c	Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			c	Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			c	Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			c	Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			d	Credit 5	Indoor Chemical and Pollutant Source Control	1
1			d	Credit 6.1	Controllability of Systems—Lighting	1
1			d	Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			d	Credit 7.1	Thermal Comfort—Design	1
1			d	Credit 7.2	Thermal Comfort—Verification	1
	1		d	Credit 8.1	Daylight and Views—Daylight	1
	1		d	Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

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1			Credit 1.1	Innovation in Design: Green Education	1
1			Credit 1.2	Innovation in Design: Green Cleaning	1
1			Credit 1.3	Innovation in Design: MRc2 Construction Waste 95%	1
	1		Credit 1.4	Innovation in Design: MRc4 Recycled Content 30%	1
1			Credit 1.5	Innovation in Design: MRc6 Certified Wood 95%	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

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1			Credit 1.1	Regional Priority: SSc5.2	1
	1	1	Credit 1.2	Regional Priority: WEc2, 2 points	1
1			Credit 1.3	Regional Priority: WEc3, 40%	1
	1		Credit 1.4	Regional Priority: IEQc8.1, 1 point	1

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65	24	22	**Project Total**	Possible Points: 110

LEED 2009 for New Construction and Major Renovations

Scorecard - Donald Dungan New Community Center

11/30/16

INTEGRAL GROUP

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54	35	19	**Project Total**			**Possible Points: 110**

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

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19	5	2	**Sustainable Sites**			Possible Points: 26
Y			c	Prereq 1	Construction Activity Pollution Prevention	
1			d	Credit 1	Site Selection	1
5			d	Credit 2	Development Density and Community Connectivity	5
	1		d	Credit 3	Brownfield Redevelopment	1
6			d	Credit 4.1	Alternative Transportation—Public Transportation Access	6
		1	d	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			d	Credit 4.3	Alternative Transportation—Low-Emitting, Fuel-Efficient Vehicles	3
2			d	Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		c	Credit 5.1	Site Development—Protect or Restore Habitat	1
	1		d	Credit 5.2	Site Development—Maximize Open Space	1
1			d	Credit 6.1	Stormwater Design—Quantity Control	1
1			d	Credit 6.2	Stormwater Design—Quality Control	1
	1		c	Credit 7.1	Heat Island Effect—Non-roof	1
		1	d	Credit 7.2	Heat Island Effect—Roof	1
	1		d	Credit 8	Light Pollution Reduction	1

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6	2	2	**Water Efficiency**			Possible Points: 10
Y			d	Prereq 1	Water Use Reduction—20% Reduction	
2	2		d	Credit 1	Water Efficient Landscaping	2 to 4
		2	d	Credit 2	Innovative Wastewater Technologies	2
4			d	Credit 3	Water Use Reduction	2 to 4

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4	17	12	**Energy and Atmosphere**			Possible Points: 35
Y			c	Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			d	Prereq 2	Minimum Energy Performance	
Y			d	Prereq 3	Fundamental Refrigerant Management	
2	3	12	d	Credit 1	Optimize Energy Performance	1 to 19
	7		d	Credit 2	On-Site Renewable Energy	1 to 7
2			c	Credit 3	Enhanced Commissioning	2
	2		d	Credit 4	Enhanced Refrigerant Management	2
	3		c	Credit 5	Measurement and Verification	3
	2		c	Credit 6	Green Power	2

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7	5	2	**Materials and Resources**			Possible Points: 14
Y			d	Prereq 1	Storage and Collection of Recyclables	
2	1		c	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
	1		c	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			c	Credit 2	Construction Waste Management	1 to 2
		2	c	Credit 3	Materials Reuse	1 to 2

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19	5	2	**Materials and Resources, Continued**			
1	1		c	Credit 4	Recycled Content	1 to 2
1	1		c	Credit 5	Regional Materials	1 to 2
	1		c	Credit 6	Rapidly Renewable Materials	1
1			c	Credit 7	Certified Wood	1

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12	3		**Indoor Environmental Quality**			Possible Points: 15
Y			d	Prereq 1	Minimum Indoor Air Quality Performance	
Y			d	Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			d	Credit 1	Outdoor Air Delivery Monitoring	1
1			d	Credit 2	Increased Ventilation	1
1			c	Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			c	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			c	Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			c	Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			c	Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			c	Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			d	Credit 5	Indoor Chemical and Pollutant Source Control	1
1			d	Credit 6.1	Controllability of Systems—Lighting	1
	1		d	Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			d	Credit 7.1	Thermal Comfort—Design	1
1			d	Credit 7.2	Thermal Comfort—Verification	1
	1		d	Credit 8.1	Daylight and Views—Daylight	1
	1		d	Credit 8.2	Daylight and Views—Views	1

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4	2		**Innovation and Design Process**			Possible Points: 6
1				Credit 1.1	Innovation in Design: Green Education	1
1				Credit 1.2	Innovation in Design: Green Cleaning	1
1				Credit 1.3	Innovation in Design: MRc2 Construction Waste 95%	1
	1			Credit 1.4	Innovation in Design: MRc4 Recycled Content 30%	1
	1			Credit 1.5	Innovation in Design: MRc6 Certified Wood 95%	1
1				Credit 2	LEED Accredited Professional	1

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2	1	1	**Regional Priority Credits**			Possible Points: 4
1				Credit 1.1	Regional Priority: MRc1.1	1
		1		Credit 1.2	Regional Priority: WEc2, 2 points	1
1				Credit 1.3	Regional Priority: WEc3 40%	1
	1			Credit 1.4	Regional Priority: IEQc8.1, 1 point	1

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54	35	19	**Project Total**			Possible Points: 110

Kunzman Associates, Inc.

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