Appendix A
Air Quality-Greenhouse Gas Assessment

KUNZMAN ASSOCIATES, INC.

CALIFORNIA UNIVERSITY OF SCIENCE AND MEDICINE

AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

November 12, 2015

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

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Prepared by:

Katie Wilson, M.S.
Carl Ballard, LEED GA
William Kunzman, P.E.

1111 Town & Country Road, Suite 34
Orange, California 92868
(714) 973-8383

www.traffic-engineer.com

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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, and global climate change impacts. 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
- recommendations for mitigation measures
- analysis of the conformity of the proposed project with the SCAQMD AQMP

The City of Colton 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 proposed project is located within the City of Colton in San Bernardino County, California. The project site is near the northeast corner of Valley Blvd and Pepper Avenue in a parking lot currently used for employee and visitor parking for the Arrowhead Regional Medical Center (ARMC). The California University of Science and Medicine (CSUM) site is not in, but is surrounded by, the Colton Hub City Center Specific Plan (CHCCSP) project area. The CSUM site is currently utilized as a parking lot for the ARMC. The ARMC site is not located within, but is surrounded by the City of Colton. More specifically, the CSUM site is located at the southeast corner of Pepper Avenue and Plum Drive; a proposed Ancillary Parking Lot located at the northeast corner of Pepper Avenue and Plum Drive; and the Primary Care-Urgent Care (PC-UC) site is located at the northeast corner of Pepper Avenue and Blue Drive. A vicinity map showing the project location is provided on Figure 1.

C. Project Description

CUSM is proposing to construct a three-story office building to be developed as the medical school, and Cal-Med is proposing a two-story primary care-urgent care building to be located on one of two locations: 1) within CHCCSP Planning Area 1 (Alternative A); or 2) within an existing parking lot at the northeast corner of Pepper Avenue and Valley Boulevard on parcels owned by the County of San Bernardino (Alternative B). Alternative B proposes to locate the CSUM building at the southeast corner of Pepper Avenue and Plum Place, a proposed Ancillary Parking Lot (existing) at the northeast corner of Pepper Avenue

and Plum Place, and 7-acre parking lot in Planning Area 21 south of San Bernardino Avenue and west of Meridian Avenue. Both sites are currently being utilized as a parking lot for the Arrowhead Regional Medical Center. Figure 2 illustrates the project site plan for Alternative B.

This analysis focuses on the buildings and parking proposed for the ARMC area of Alternative B, as potential air quality impacts associated with construction and operation of uses within Planning Area 21 (located within the CHCCSP) were already addressed in the DEIR for the CHCCSP; however, to be all-inclusive, the new 625-space parking area proposed for Planning Area 21 (that is part of Alternative B) will also be analyzed. Alternative B consists of the following development scenario:

1. Construction of the California University of Science and Medicine - a three-story, 91,500 square foot building that will house a new medical school consisting of library, administration offices, lecture hall, a community life café and lounge, classrooms for the teaching of clinical skills, simulation, community life and gross anatomy classrooms, and research labs. Related parking and landscaping are included. Upon completion, there will be 198 on-site parking spaces and 44,076 square feet of landscaping. The CSUM building will be located on approximately 4 acres. At maximum, CUSM would have 480 students and 100 faculty/staff. However, CUSM has indicated that only 240 students would be on the campus as the upper level students would have completed their classroom work and would go into rotation for their remaining training.
2. Improvement of the existing 100-space Ancillary Parking lot to provide additional parking spaces for CUSM faculty, staff and students, to be shared with ARMC staff. The ancillary parking area is located on approximately 1 acre.
3. A 20,000 square foot Primary Care – Urgent Care (PC-UC) Facility to assist ARMC in meeting the community needs for urgent care in addition to the Arrowhead Regional Medical Center emergency room. The Primary Care – Urgent Care Facility will also provide primary care for Arrowhead Regional Medical Center out patients. Upon completion, there will be 42 on-site parking spaces. The PC-UC site is approximately 0.8 acres.
4. Development of a new 635-space parking lot located on 7 acres in Planning Area 21. A land exchange will occur between the California University of Science and Medicine (new campus site and ancillary parking lot) and the County of San Bernardino (new parking lot located in Planning Area 21).
5. Construction of Alternative B will include use of a one-acre site for located at the northeast corner of the intersection of Meridian Avenue and Valley Boulevard for construction staging.

D. Phasing and Timing

The proposed project would be constructed over approximately 19 months with an anticipated start of construction no sooner than January 2016 and completion in July 2017. The proposed project is anticipated to be operational upon completion in 2017.

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. 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 receptor to the project site are the single-family detached residential dwelling units located on the northern side of West San Bernardino Avenue, approximately 100 feet (~30 meters) north of the northern boundary of the proposed 635-space parking lot located in Planning Area 21. The façade of the Arrowhead Regional Medical Center is located approximately 160 feet from the proposed PC-UC area (currently an existing parking lot).

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
The 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.

Figure 1
Project Location Map

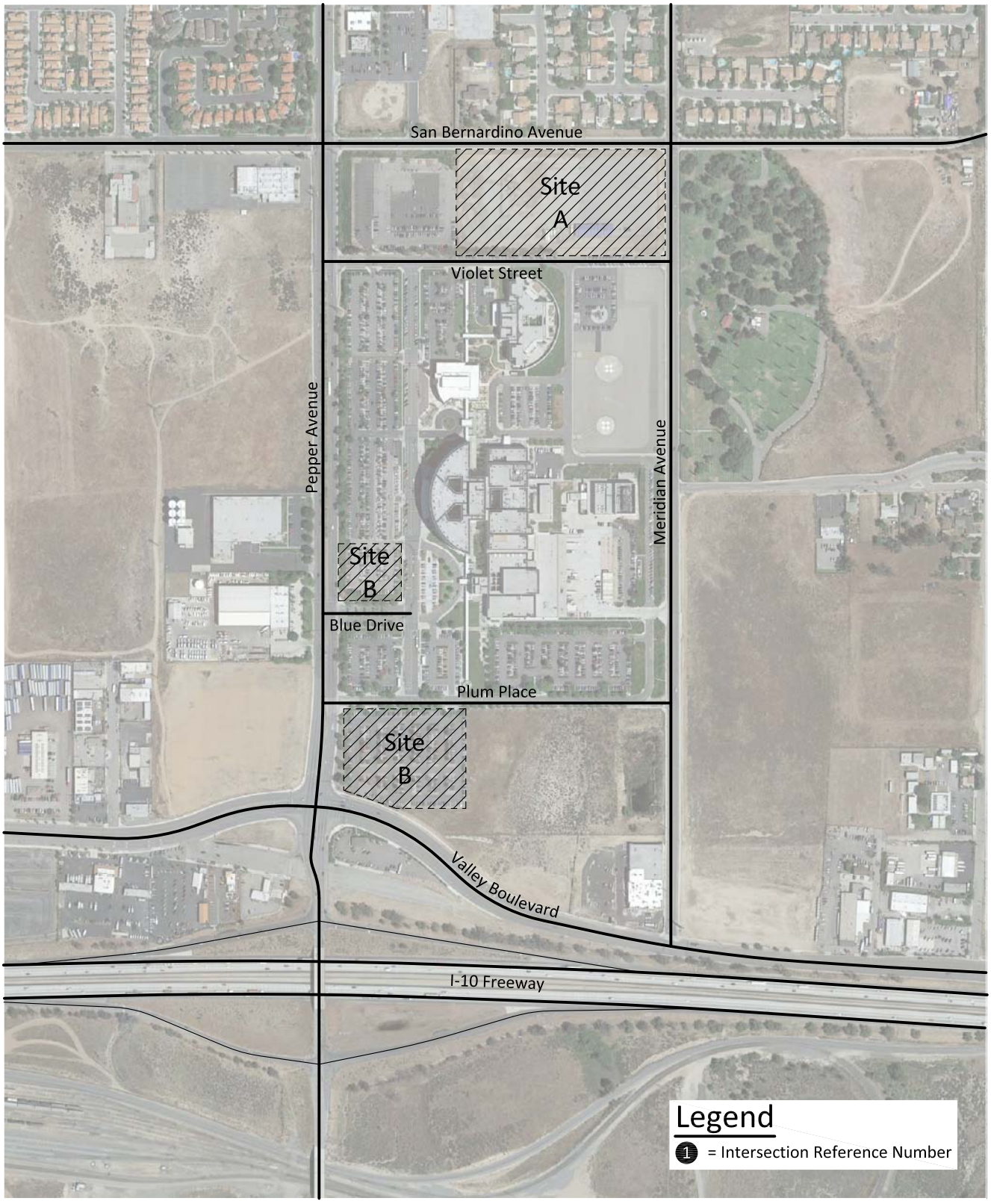

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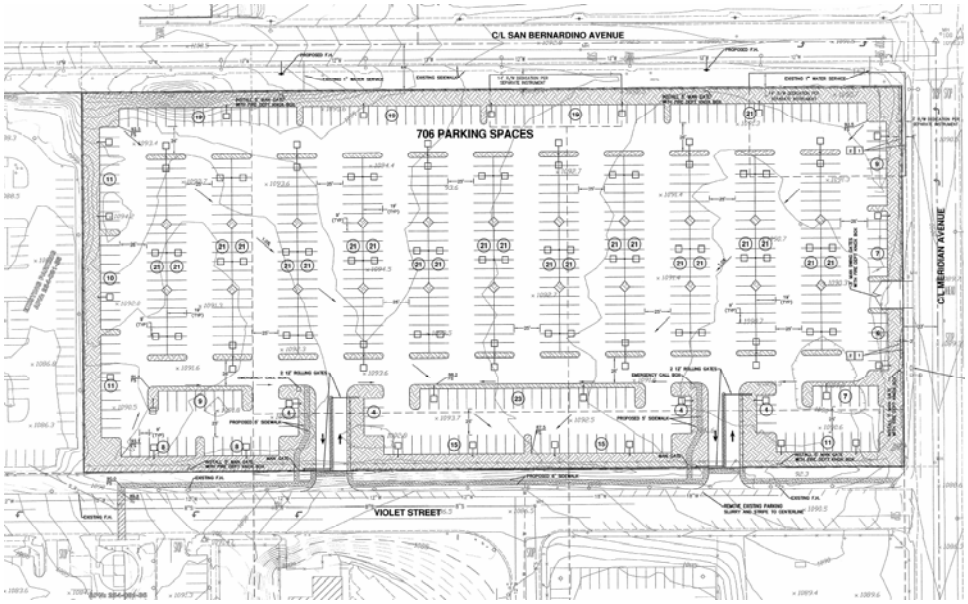
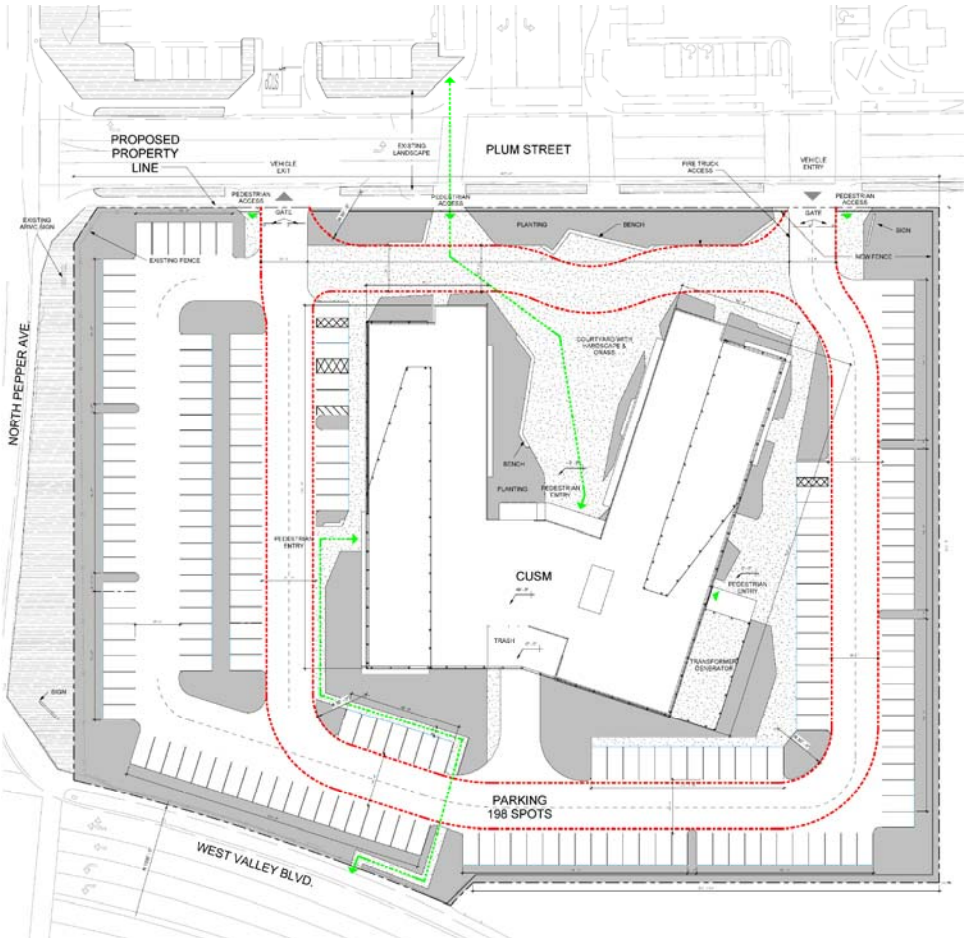
Figure 2
Site Plan - Alternative B

San Bernardino / Violet / Meridian Parking Lot



California University of Science and Medicine Site



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II. ATMOSPHERIC SETTING

The project site is located within the western portion of San Bernardino County, which is part of the South Coast Air Basin (SCAB) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter. The project site is located toward the northeast portion of the South Coast Air Basin near the foot of the San Bernardino Mountains, which define the eastern boundary of the South Coast Air Basin.

The climate of western San Bernardino County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as western San Bernardino County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Los Angeles Basin. This airflow brings polluted air into western San Bernardino County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in western San Bernardino County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the South Coast Air Basin into the interior valleys which become trapped by the mountains that border the eastern edge of the South Coast Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

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 Fontana Kaiser monitoring station, the nearest available station to the City of Colton, are shown below in Table 1. Table 1 shows that August is typically the warmest month and January and December are typically the coolest months. 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

Fontana Kaiser Monthly Climate Data[1]

Descriptor	Month of Year											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	66.4	68.9	68.5	72.8	80.3	86.5	95	96.2	90	80.4	68.7	66
Avg. Min. Temperature	41.5	42.6	43.9	45.9	51.5	56.1	59.5	62.4	60.2	52.5	43.5	41.7
Avg. Total Precipitation (in.)	3.17	3.27	4.13	1.31	0.31	0.00	0.00	0.28	0.62	0.77	2.59	2.33

*Data taken from nearest station: Fontana Kaiser, CA (043120)

[1] Source: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3120

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 2005 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 San Bernardino 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) indicates that concentrations were 379 ppm in 2005, an increase of more than 30 percent. Left

unchecked, the IPCC projects that concentration of carbon dioxide in the atmosphere is projected to increase to a minimum of 540 ppm by 2100 as a direct result of anthropogenic sources. This could result in an average global temperature rise of at least two degrees Celsius.

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

GHGs have varying global warming potential (GWP). The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere; it is the cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to the reference gas, CO_2. One teragram of carbon dioxide equivalent (Tg CO_2e) is essentially the emissions of the gas multiplied by the global warming potential. One teragram is equal to one million metric tons. The carbon dioxide equivalent is a good way to assess emissions because it gives weight to the global warming potential of the gas. 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

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 2000 and methyl chloroform by 2005.

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.

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).

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. For the most recent 2009-2011 data period, only one of these stations (Vernon) still exceeded the lead standard.

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. Today, the Administration is hosting a roundtable that will bring 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]

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

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, 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 Final) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

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.

CARB also proposed interim statewide CEQA thresholds for GHG emissions and released Recommended Approaches for Setting Interim Significance Thresholds for

Greenhouse Gases under the California Environmental Quality Act, on October 24, 2008. The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

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.

The *First Update to the Climate Change Scoping Plan* was released in May 2014. Within that update, the ARB discusses the role local governments play in successful implementation of AB32 and states that local governments have "set municipal and community-wide GHG reduction targets of 15 percent below then-current levels by 2020, to coincide with the statewide limit."

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 are 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.

4. Regional

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

South Coast Air Quality Management District

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. A revised draft of the 2012 AQMP was released on September, 2012, was adopted by the SCAQMD Board on December 7, 2012, and was adopted by CARB via Resolution 13-3 on January 25, 2013. The 2012 AQMP was prepared in order to meet the federal Clean Air Act requirement that all 24-hour PM2.5 non-attainment areas prepare a SIP, that were required to be submitted to the U.S. EPA by December 14, 2012 and demonstrate attainment with the 24-hour 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 compliance 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.

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.

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.

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. Local – City of Colton

Local jurisdictions, such as the City of Colton, 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 City of Colton General Plan has a Model Air Quality Element (1991) whose purpose is to help achieve state and federal air quality standards established within the South Coast Air Quality Management Plan. The Model Air Quality Element includes the following goals and policies in relation to the proposed project:

Goal 1
Effective coordination of air quality improvement within the portion of the South Coast Air /basin in San Bernardino County and improved air quality through reductions in pollutants from Orange and Los Angeles counties.

Policy 1.1
Coordinate with other jurisdictions in San Bernardino County to establish parallel air quality plans and implementation programs.

Policy 1.4
Involve environmental groups, special interests, and general public in the formulation and implementation of programs which effectively reduce air borne pollutants.

Goal 2
A diverse and efficiently operated ground transportation system which generates the minimum feasible pollutants.

Goal 4
A pattern of land uses which can be efficiently served by a diversified transportation system and land development project which directly and indirectly generate the minimum feasible air pollutants.

Policy 4.3
Support a regional approach to regulating the location and design of land uses which are especially sensitive to air pollution.

Program 4.3.1
Participate with the SCAQMD in jointly formulating appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals, and the like) from excessive and hazardous emissions.

Goal 5
Reduce particulate emissions from roads, parking lots, construction sites, and agricultural lands.

Policy 5.1
Reduce particulate emissions from roads, parking lots, construction sites, and agricultural lands.

Policy 5.2
Reduce emissions from building materials and methods which generate excessive pollutants.

Goal 6
Reduced emissions through reduced energy consumption.

Policy 6.1
Reduce energy consumption through conservation improvements and requirements.

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 Final 2012 Air Quality Management Plan, prepared by SCAQMD, December 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 Central San Bernardino Valley Air Monitoring Area (Area 34), which is located in San Bernardino County and covers the area from the Riverside County line on the south to approximately I-15 Freeway on the north and west and Highland to the east. The nearest air monitoring station to the project site is the San Bernardino – 4th Street Air Monitoring Station (San Bernardino Station). The San Bernardino Station is located approximately 5.18 miles northeast of the project site at 24302 4th Street, San Bernardino. To obtain all necessary data, the Fontana-Arrow Highway monitoring station, approximately 7.75 miles northwest of the project site at 14360 Arrow Boulevard, Fontana, was also used. Table 5 presents the monitored pollutant levels from the San Bernardino Station and Fontana-Arrow Highway station. However, it should be noted that due to the distances of the air monitoring stations 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.

Ozone
During the 2012 to 2014 monitoring period, the State 1-hour concentration standard for ozone has been exceeded between 22 and 41 days each year at the San Bernardino Station. The State 8-hour ozone standard has been exceeded between 53 and 77 days each year over the past three years at the San Bernardino station. The Federal 8-hour ozone standard was exceeded between 36 and 54 days each year over the past three years at the San Bernardino 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 San Bernardino 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 San Bernardino station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter
During the 2012 to 2014 monitoring period, the State 24-hour concentration standard for PM10 has been exceeded a maximum of 2 days each year at the San Bernardino monitoring station. Over the same time period the Federal 24-hour standards for PM10 have been exceeded a maximum of 1 day each year at the San Bernardino monitoring station.

The Federal 24 hour standard for PM2.5 was exceeded a maximum of 2 days during the 2010 to 2012 monitoring period at the San Bernardino. The annual average PM2.5 concentrations exceeded the State standard each year during the 2010 to 2012 monitoring period and did not exceed the Federal standard during the same time period.

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	0.075 ppm/8-hour	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; (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	0.15 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	Averaging Time	National Standards[1]	Attainment Date[2]	California Standards[3]
1979 1-Hour Ozone[4]	1-Hour (0.12 ppm)	Nonattainment (Extreme)	11/15/2010 (Not attained[4])	Extreme Nonattainment
1997 8-Hour Ozone[5]	8-Hour (0.08 ppm)	Nonattainment (Extreme)	6/15/2024	Nonattainment
2008 8-Hour Ozone	8-Hour (0.075 ppm)	Nonattainment (Extreme)	12/31/2032	
CO	1-Hour (35 ppm) 8-Hour (9 ppm)	Attainment (Maintenance)	6/11/2007 (Attained)	Maintenance
NO_2[6]	1-Hour (100 ppb) Annual (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (Attained)	Attainment
SO_2[7]	1-Hour (75 ppb)	Designations Pending	Pending	Attainment
	24-Hour (0.14 ppm) Annual (0.03 ppm)	Unclassifiable/ Attainment	3/19/1979 (Attained)	
PM10	24-Hour (150 µg/m^3)	Nonattainment (Serious)[8]	12/31/2006 (Redesignation request submitted)[8]	Nonattainment
PM2.5	24-Hour (35 µg/m^3)	Unclassifiable/ Attainment	Attained	Unclassified
Lead	3-Months Rolling (0.15 µg/m^3)	Nonattainment (Partial)[9]	12/31/2015	Attainment

[1] Obtained from Draft 2012 AQMP, SCAQMD, 2012. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassified/Attainment or Unclassifiable.

[2] A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for attainment demonstration.

[3] Obtained from http://www.arb.ca.gov/desig/adm/adm.htm.

[4] 1-hour O_3 standard (0.13 ppm) was revoked, effective June 15, 2005; however, the Basin has not attained this standard based on 2008-2010 data has some continuing obligations under the former standard.

[5] 1997 8-hour O_3 standard (0.08 ppm) was reduced (0.075 ppm), effective May 27, 2008; the 1997 O3 standard and most related implementation rules remain in place until the 1997 standard is revoked by U.S. EPA.

[6] New NO_2 1-hour standard, effective August 2, 2010; attainment designations January 20, 2012; annual NO_2 standard retained.

[7] The 1971 annual and 24-hour SO_2 standards were revoked, effective August 23, 2010; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard. Area designations expected in 2012, with SSAB designated Unclassifiable/Attainment.

[8] Annual PM10 standard was revoked, effective December 18, 2006; redesignation request to Attainment of the 24-hour PM10 standard is pending with U.S. EPA

[9] Partial Nonattainment designation - Los Angeles County portion of Basin only.

Table 5

Local Area Air Quality Levels from the San Bernardino Air Monitoring Station [1]

Pollutant (Standard)[2]	Year		
	2012	2013	2014
Ozone:			
Maximum 1-Hour Concentration (ppm)	0.124	0.139	0.121
Days > CAAQS (0.09 ppm)	**41**	**22**	**38**
Maximum 8-Hour Concentration (ppm)	0.109	0.112	0.099
Days > NAAQS (0.08 ppm)	**54**	**36**	**51**
Days > CAAQS (0.070 ppm)	**77**	**53**	**76**
Carbon Monoxide:			
Maximum 8-Hour Concentration (ppm)	1.64	*	*
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:			
Maximum 1-Hour Concentration (ppb)	67	72.1	72.6
Days > NAAQS (100 ppb)	0	0	0
Sulfur Dioxide:[3]			
Maximum 24-Hour Concentration (ppm)	0.004	0.001	*
Days > NAAQS (0.25 ppm)	*	*	*
Inhalable Particulates (PM10):			
Maximum 24-Hour Concentration (ug/m^3)	68.1	177.3	157.2
Days > NAAQS (150 ug/m^3)	0	**1**	**1**
Days > CAAQS (50 ug/m^3)	**1**	**2**	**2**
Ultra-Fine Particulates (PM2.5):			
Maximum 24-Hour Concentration (pg/m^3)	34.8	55.3	73.9
Days > NAAQS (35 ug/m^3)	0	**1**	**1**

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

[2] CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million; ppb=parts per billion; N/D = no data available

[3] Data taken from Fontana-Arrow Highway Monitoring Station

*Insufficient Data Available

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 that are 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

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

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

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

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

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).

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 Bay Area Air Quality Management District and the San Joaquin Valley Air Pollution Control District have both developed greenhouse gas thresholds. However, those thresholds are not applicable to the project since the project is under the jurisdiction of the SCAQMD. The SCAQMD is in the process of developing thresholds, as discussed below.

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 (Riverside County Draft CAP calls for a community-wide reduction of 25% from 2011 BAU emissions by 2020).
  - 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 and have been used as the threshold of significance.

2. Local- City of Colton

Regarding greenhouse gas emissions thresholds, the EIR for the City of Colton General Plan states the following:

> A numerical threshold for determining the significance of greenhouse gas emissions in the South Coast Air Basin (Basin) has not been established by the South Coast Air Quality Management District (SCAQMD). As an interim threshold based on guidance provided in the CAPCOA CEQA and Climate Change handbook, the City has opted to use a non-zero threshold approach based on Approach 2 of the handbook. Threshold 2.5 (Unit-Based Thresholds Based on Market Capture)

establishes a numerical threshold based on capture of approximately 90 percent of emissions from future development. The latest threshold developed by SCAQMD using this method is 10,000 metric tons carbon dioxide equivalent (MTCO2E) per year for industrial projects, 3,500 MTCO2E for residential projects, 1,400 MTCO2E for commercial projects, and 3,000 MTCO2E for mixed use projects. This threshold is based on the review of 711 CEQA projects. These thresholds will be utilized for implementing development in the future in determining if emissions of greenhouse gases will be significant, until an officially adopted threshold is established and accepted by the City.

Therefore, as stated above, the project's GHG emissions will be compared to the draft screening threshold of 3,000 MTCO2e per year for all land use types.

Through SANBAG, the City of Colton forms the Colton Chapter of the San Bernardino County Regional GHG Reduction Plan. The Plan has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. 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, which is the baseline year for the GHG Reduction Plan. Consistent with the CARB Scoping Plan, the City of Colton has chosen a reduction target of 15 percent below 2008 GHG emissions levels by 2020. These emissions reductions levels are also consistent with the City of Colton's Draft Climate Action Plan (CAP) which was release for public review on August 5, 2015.

If the project exceeds the SCAQMD's and GHG Reduction Plan's screening threshold of 3,000 MTCO2e per year for all land use projects, then the project's year 2020 emissions will be compared to the project's baseline GHG emissions.

City of Colton General Plan (1987) policies mentioned in the Regional GHG Reduction Plan that either support the GHG reduction measures or contribute to GHG reductions and sustainable practices within the City and are relevant to the proposed project include the following:

Off-Road 1: Electric-Powered Construction Equipment

Air Quality Goal 6: Reduced Emissions through reduced energy consumption.

Off-Road 2: Idling Ordinance

Air Quality Goal 6: Reduced Emissions through reduced energy consumption.

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	
Pollutant	SCAQMD Standards
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/ceqa/handbook/signthres.pdf

VI. SHORT-TERM CONSTRUCTION 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 duration of project construction were obtained from the project applicant. The construction activities for the proposed project are anticipated to include: grading of approximately 12.8 acres, construction of a 91,500 square foot medical school building top accommodate 240 students, construction of a 20,000 square foot PC-UC building (with a 10,000 square foot footprint), 44,076 square feet of landscaping, paving of parking lots totaling 975 spaces and approximately 1.55 acres of on-site roads. As stated previously, the proposed project is anticipated to start construction in June 2016 and take about 19 months to complete.

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 2013.2.2 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2011 computer program to calculate the emission rates specific for the western portion of San Bernardino County for construction-related employee vehicle trips and the OFFROAD2011 computer program to calculate emission rates for heavy truck operations. EMFAC2011 and OFFROAD2011 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Using CalEEMod, the peak daily air pollutant emissions during each phase was 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 12.8 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.

The phases of the construction activities which have been analyzed below are: 1) grading, 2) building construction, 3) paving, and 4) application of architectural coatings. Construction modeling details are included in Appendix B.

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 that would be applied after July 1, 2014 will be limited to an average of 50 grams per liter or less and the CalEEMod model default VOC emissions have been adjusted accordingly.

Project Impacts
The construction-related criteria pollutant emissions for each phase are shown below in Table 7. Table 7 shows that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

B. Construction-Related Local Impacts

Construction-related air emissions may also have the potential to exceed the State and Federal air quality standards in the project vicinity. 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 construction equipment used for this analysis.

As shown in Table 8, the maximum number of acres disturbed in a day would be five (5) acres during grading.

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 localized assessment methodology limits the emissions in the analysis to those generated from on-site activities. The emission thresholds were calculated based on the Central San Bernardino Valley source receptor area (SRA 34) and a disturbance of five acres per day (which is the maximum area anticipated to be disturbed each day during grading).

The nearest sensitive receptors to the project site are the single-family detached residential dwelling units located on the northern side of West San Bernardino Avenue, approximately 100 feet (~30 meters) north of the northern boundary of the proposed 635-space parking lot located in Planning Area 21. The facade of the Arrowhead Regional Medical Center is located approximately 160 feet from the proposed PC-UC area (currently an existing parking lot). Table 9 shows the on-site emissions from the CalEEMod model for the different construction phases and the emissions thresholds.

The data provided in Table 9 shows that none of the analyzed criteria pollutants would exceed the calculated 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 70-year lifetime will contract cancer, based on the use of

standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the relatively short-term construction schedule, the proposed project would not result in a long-term (i.e., 70 years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

3. Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement and diesel exhaust emissions. 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.

Table 7

Construction-Related Regional Pollutant Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	6.48	74.81	49.14	0.06	6.11	4.61
Off-Site[3]	0.09	0.10	1.38	0.00	0.23	0.06
Total	**6.57**	**74.92**	**50.52**	**0.06**	**6.33**	**4.67**
Building Construction						
On-Site[2]	3.41	28.51	18.51	0.03	1.97	1.85
Off-Site[3]	1.92	9.96	27.18	0.06	3.60	1.08
Total	**5.33**	**38.47**	**45.69**	**0.08**	**5.57**	**2.92**
Paving						
On-Site[2]	3.44	22.39	14.82	0.02	1.26	1.16
Off-Site[3]	0.06	0.08	1.03	0.00	0.17	0.05
Total	**3.51**	**22.46**	**15.85**	**0.02**	**1.43**	**1.21**
Architectural Coating						
On-Site[2]	42.05	2.37	1.88	0.00	0.20	0.20
Off-Site[3]	0.22	0.26	3.44	0.00	0.56	0.15
Total	**42.26**	**2.63**	**5.33**	**0.00**	**0.76**	**0.35**
Total of overlapping phases[4]	**51.10**	**63.57**	**66.87**	**0.11**	**7.76**	**4.48**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	no	no	no	no	no	no

[1] Source: CalEEMod Version 2013.2.2

[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 coatings and paving phases may overlap.

Table 8

Maximum Number of Acres Disturbed Per Day[1]

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Site Grading	Graders	1	0.5	0.5
	Rubber Tired Dozers	1	0.5	0.5
	Excavators	2	0.5	1
	Scrapers	2	1	2
	Tractors/Loaders/Backhoes	2	0.5	1
Total per phase		-	-	**5**

[1] Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds.

Table 9

Local Construction Emissions at the Nearest Receptor[1]

Phase	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Grading	74.81	49.14	6.11	4.61
Building Construction	28.51	18.51	1.97	1.85
Paving	22.39	14.82	1.26	1.16
Architectural Coating	2.37	1.88	0.20	0.20
SCAQMD Threshold for 25 meters (82 feet)[2]	**270**	**1,746**	**14**	**8**
Exceeds Threshold?	no	no	no	no

[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for five acres in Central San Bernardino Valley (SRA 34), Revised October 21, 2009.

[2] The nearest sensitive receptors are the homes north of San Bernardino Ave (~100 feet (~30 m) from the northern boundary of PA-21); therefore, the 25 m distance is used.

VII. LONG-TERM AIR QUALITY OPERATIONAL IMPACTS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be mainly due to emissions from the project-generated vehicle trips and through on-site operational emissions. 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 operation 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 proposed project is located in the City of Colton, which has its own electric utility; however, the CO_2 intensity factor (lb/MWhr) is not listed in CalEEMod; therefore, to be conservative, the Statewide Average was used. The use of the Statewide Average may have over-estimated the project's energy use as the City of Colton has electric rates approximately 25 percent lower than Southern California Edison.

The proposed project was analyzed in the CalEEMod model based on 20 thousand square feet of medical office building uses (with a 10,000 square foot footprint), and University/College (4 Yr) uses for 240 students with a floor surface area of 91,500 square feet (as the proposed medical school is 91,500 square feet). The operating emissions were based on the year 2017, which is the opening year for the proposed project analyzed in the traffic study (Kunzman 2015). 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 analyzed below.

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the California University of Science and Medicine Traffic Impact Analysis (TIA), prepared by Kunzman Associates, Inc., into the CalEEMod Model. The TIA showed that the project would generate 1,133 daily trips. Please see Appendix B CalEEMod output for details.

The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 emissions created from the proposed project's long-term operations have been calculated and are summarized below in Table 10. Table 10 shows that for the on-going operations activities for the proposed project, none of the emissions would exceed SCAQMD regional operational thresholds. Impacts from the operation of the project are considered to be less than significant.

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 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. 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. Therefore, as regional emissions do not exceed SCAQMD criteria thresholds, this project would create a less than significant cumulative air quality 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 Traffic Analysis showed that the project would only generate a maximum of 1,133 trips. The intersection with the highest peak hour volume is located at the I-10 freeway west bound ramps and Pepper Avenue and has a volume of 1,523 vehicles for the Year 2040 With Project scenario. 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. Therefore, as the intersection with the highest traffic volume falls far short of 100,000 vehicles, 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

The proposed project involves the construction of a medical school, primary care-urgent care, and parking lots. The long-term emissions, as discussed previously, are primarily in the form of mobile source emissions and consumer products. 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 that may spend long periods queuing and idling at the site; such as warehouse/transfer facilities. The proposed project does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term LST 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 vehicular 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 10

Regional Operational Pollutant Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	VOC	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	13.10	0.00	0.13	0.00	0.00	0.00
Energy Usage[3]	0.04	0.37	0.31	0.00	0.03	0.03
Mobile Sources[4]	4.05	11.76	43.97	0.10	6.74	1.90
Total Emissions	**17.19**	**12.13**	**44.41**	**0.10**	**6.77**	**1.93**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	no	no	no	no	no	no

[1] Source: CalEEMod Version 2013.2.2

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

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

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

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 2013.2.2 was used to calculate the GHG emissions from the proposed project. Through San Bernardino Associated Governments (SANBAG), the City of Colton forms the Colton Chapter of the San Bernardino County Regional GHG Reduction Plan. The Plan has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. 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, which is the baseline year for the GHG Reduction Plan. Consistent with the CARB Scoping Plan, the City of Colton has chosen a reduction target of 15 percent below 2008 GHG emissions levels by 2020. If the project exceeds the SCAQMD screening threshold of 3,000 MTCO2e per year for all land use types, then the project's year 2020 emissions will be compared to the project's baseline GHG emissions.

The project's year 2017 (opening year as analyzed in the TIA) emissions were calculated, compared to the SCAQMD 3,000 MTCO2e per year screening threshold and the results are shown in Table 11. Each source of GHG emissions is described in greater detail below.

1. Area Sources

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

2. Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. The proposed project is located in the City of Colton, which has its own electric utility; however, the CO_2 intensity factor (lb/MWhr) is not listed in CalEEMod; therefore, to be conservative, the Statewide Average was used. The use of the Statewide Average may have over-estimated the project's energy use as the City of Colton has electric rates approximately 25 percent lower than Southern California Edison. No changes were made to the default energy usage parameters; however, it should be known that 2013 Title 24 Commercial Standards are approximately 30 percent more efficient than 2008 Title 24 Commercial Standards (2008 Title 24 Standards are used as the baseline for energy-related emissions in CalEEMod).

3. Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the Traffic Impact Analysis into the CalEEMod Model. Mobile sources were analyzed in the manner described in Section VII above.

4. Solid Waste

Solid 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 value for waste generated was utilized 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. CalEEMod defaults were used.

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 11 and the CalEEMod Model run for the proposed project is provided in Appendix C. Table 11 shows that the proposed project would generate approximately 1,866.94 $MTCO_2e$ per year. According to the thresholds of significance established above in Section V, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations would exceed the 3,000 metric tons per year of CO_2e SCAQMD and Reduction Plan Screening threshold. Therefore, operation of the proposed project would not create a significant cumulative impact to global climate change.

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

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The

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

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

- Water Efficiency and Conservation [Indoor Water Use (4.303.1)]. Fixtures and fixture fittings reducing the overall use of potable water within the building by at least 20 percent shall be provided. The 20 percent reduction shall be demonstrated by one of the following methods:
    - Prescriptive Method: Showerheads (≤ 2.0 gpm @ 80 psi); Residential Lavatory Faucets (≤ 1.5 gpm @ 60 psi); Nonresidential Lavatory Faucets (≤ .4 gpm @ 60 psi); Kitchen Faucets (≤ 1.8 gpm @ 60 psi); Toilets (≤ 1.28 gal/flush); and urinals (≤ 0.5 gal/flush).
    - Performance Method: Provide a calculation demonstrating a 20% reduction of indoor potable water using the baseline values set forth in Table 4.303.1. The calculation will be limited to the total water usage of showerheads, lavatory faucets, water closets and urinals within the dwelling.
- Water Efficiency and Conservation [Outdoor Water Use (4.304.1)]. Irrigation Controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:
    - Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' watering needs as weather or soil conditions change.
    - Weather-based controllers without integral rain sensors or communication systems that account for rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s).
- Construction Waste Reduction of at least 50 percent (4.408.1). Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4; OR meet a more stringent local construction and demolition waste management ordinance. Documentation is required per Section 4.408.5. Exceptions:
    - Excavated soil and land-clearing debris.
    - Alternate waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.

- The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.

- Materials pollution control (4.504.1 – 4.504.6). Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particleboard.

- Installer and Special Inspector Qualifications (702.1-702.2). Mandatory special installer inspector qualifications for installation and inspection of energy systems (e.g., heat furnace, air conditioner, mechanical equipment).

C. <u>Greenhouse Gas Plan Consistency</u>

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. The applicable plan for the proposed project is the San Bernardino Associated Governments (SANBAG) San Bernardino County Regional GHG Reduction Plan. The City of Colton forms the Colton Chapter of the San Bernardino County Regional GHG Reduction Plan, released March 5, 2014. The Plan has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32.

As stated previously, the SCAQMD's screening thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. 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.

In 2006, the California State Legislature adopted 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.

Therefore as the project's emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with the goals of AB 32; which is also the goal of the SANBAG GHG Reduction Plan and the Draft City of Colton CAP.

At a level of 1,866.94 $MTCO_2e$ per year, the project's GHG emissions fall well below the SCAQMD and GHG Reduction Plan screening threshold of 3,000 metric tons per year of CO_2e for all land uses. Furthermore, the project will comply with applicable Green Building Standards and City of Colton's policies regarding sustainability (as dictated by the City's General Plan and CAP), further analysis is not warranted. No mitigation is required.

Table 11

Project-Related Greenhouse Gas Emissions[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	0.03	0.03	0.00	0.00	0.03
Energy Usage[3]	0.00	645.77	645.77	0.00	0.00	647.63
Mobile Sources[4]	0.00	1,056.56	1,056.56	0.04	0.00	1,057.41
Waste[5]	52.74	0.00	52.74	3.12	0.00	118.19
Water[6]	0.96	24.35	25.31	0.10	0.00	28.16
Construction[7]	0.00	15.46	15.46	0.00	0.00	15.51
Total Emissions	**53.70**	**1,742.19**	**1,795.89**	**3.26**	**0.00**	**1,866.94**
SCAQMD and GHG Reduction Plan Screening Threshold						**3,000**
Exceeds Threshold?						**no**

[1] Source: CalEEMod Version 2013.2.2

[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.

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, regional, and toxic air contaminant thresholds of significance.

Therefore, the proposed project is not anticipated 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

insure 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 Colton General Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as West Valley Specific Plan, Open Space Resource and Public/Institution in the General Plan Land Use Plan. Unrelated to the development of the CSUM campus, PC-UC site or additional parking, the City is initiating a Technical Correction to resolve an error on the General Plan Land Use Map that identifies the southerly parcel to be used for the new CUSM as Open Space, rather than Public Institution (as is the rest of the ARMC site). The City is undertaking this as a separate but concurrent action. The proposed project is an institutional use with landscaping and parking proposed, and would be consistent with the General Plan land use designation (once the Technical Correction is in place), 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 would not conflict with implementation of the AQMP, impacts are considered to be less than significant.

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 Pollution Control Officers Association

2009 Health Risk Assessments for Proposed Land Use Projects

California Air Resources Board

2008 Resolution 08-43

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

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

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.

2015 Historical Air Quality, Top 4 Summary

City of Colton

1987 Final Preliminary Plan for the City of Colton

1991 General Plan Model Air Quality Element

2013 City of Colton General Plan Update Draft Environmental Impact Report

2015 Public Draft City of Colton Climate Action. August 5.

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

Kunzman Associates, Inc.

2015 California University of Science and Medicine Traffic Impact Analysis. October 22.

Office of Environmental Health Hazard Assessment

2003 Air Toxics Hot Spots Program Risk Assessment Guidelines

San Bernardino Associated Governments (SANBAG)

2014 San Bernardino County Regional Greenhouse Gas Reduction Plan (Section 3.6 [City of Colton]). March.

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

2011 Appendix A Calculation Details for CalEEMod

2012 Final 2012 Air Quality Management Plan

Southern California Association of Governments
2012 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy

APPENDICES

Appendix A – Glossary of Terms

Appendix B – CalEEMod Model Daily Emissions Printouts

Appendix C – CalEEMod Model Annual Emissions Printouts

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
CH4	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
ROG	Reactive Organic Gases (see VOC)
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments

SCAQMD	South Coast Air Quality Management District
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
T7	Heavy-Heavy Duty Trucks from EMFAC 2007 classifications
TAC	Toxic air contaminants
TSF	Thousand square feet
VOC	Volatile organic compounds

APPENDIX B

CalEEMod Model Daily Emissions Printouts

6160b California University of Science and Medicine

San Bernardino-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	20.00	1000sqft	0.46	10,000.00	0
University/College (4Yr)	240.00	Student	1.01	91,500.00	0
Other Asphalt Surfaces	1.55	Acre	1.55	67,518.00	0
Other Non-Asphalt Surfaces	44.08	1000sqft	1.01	44,076.00	0
Parking Lot	975.00	Space	8.77	390,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2017
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	1001.57	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - City of Colton Utility provides electricity to the project.

Land Use - 975 Parking spaces = 635 sp in PA-21, 100 sp Ancillary parking, 42 sp PC-UC & 198 sp for med schl. Med schl = 240 stdents in 91,500 SF bldg w/ 44,076 SF of landscpg. PC-UC = 20,000 SF (10,000 SF ftprint). ~1.55 acres on-site rds.

Construction Phase - Timing from developer.

Trips and VMT -

Grading - Site for Alt B is approximately 12.8 acres

Architectural Coating - SCAQMD Rule 1113 limits paints to 50g/L VOC

Vehicle Trips - TIA gives a daily trip rate of 1.71 trips/student for the school and 36.13 trips per TSF for the PC-UC.

Area Coating - SCAQMD Rule 1113 limits paints to 50g/L VOC

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - SCAQMD Rule 1113 limits paints to 50g/L VOC

Energy Mitigation - 2013 Title 24 commercial standards are approximately 30% mroe efficient than 2008 Title 24 commercial standards. Energy Star appliances used on-site where applicable.

Water Mitigation - CalGreen requires a 20% reduction in indoor water usage.

Waste Mitigation - AB 931

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	300.00	100.00
tblGrading	AcresOfGrading	75.00	12.80
tblLandUse	LandUseSquareFeet	20,000.00	10,000.00
tblLandUse	LandUseSquareFeet	44,111.39	91,500.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	WD_TR	2.38	1.71

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					
2016	42.2604	74.9183	50.5151	0.0838	6.6981	3.5859	10.2840	3.4184	3.2990	6.7174	0.0000	7,770.6949	7,770.6949	1.9466	0.0000	7,811.5733
2017	42.2002	2.4194	4.9618	0.0100	0.5589	0.1773	0.7362	0.1482	0.1770	0.3252	0.0000	842.4363	842.4363	0.0563	0.0000	843.6188
Total	**84.4606**	**77.3377**	**55.4769**	**0.0938**	**7.2570**	**3.7632**	**11.0202**	**3.5666**	**3.4761**	**7.0426**	**0.0000**	**8,613.1312**	**8,613.1312**	**2.0029**	**0.0000**	**8,655.1921**

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					
2016	42.2604	74.9183	50.5151	0.0838	3.4387	3.5859	6.3345	1.3693	3.2990	4.6684	0.0000	7,770.6949	7,770.6949	1.9466	0.0000	7,811.5733
2017	42.2002	2.4194	4.9618	0.0100	0.5589	0.1773	0.7362	0.1482	0.1770	0.3252	0.0000	842.4363	842.4363	0.0563	0.0000	843.6188
Total	**84.4606**	**77.3377**	**55.4769**	**0.0938**	**3.9976**	**3.7632**	**7.0707**	**1.5176**	**3.4761**	**4.9936**	**0.0000**	**8,613.1312**	**8,613.1312**	**2.0029**	**0.0000**	**8,655.1921**

	ROG	NOx	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**	**44.91**	**0.00**	**35.84**	**57.45**	**0.00**	**29.09**	**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	13.0960	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Energy	0.0404	0.3674	0.3086	2.2000e-003		0.0279	0.0279		0.0279	0.0279		440.8783	440.8783	8.4500e-003	8.0800e-003	443.5614
Mobile	4.0515	11.2731	43.9693	0.1016	6.5909	0.1522	6.7430	1.7603	0.1400	1.9003		8,656.4924	8,656.4924	0.3121		8,663.0471
Total	**17.1878**	**11.6418**	**44.4112**	**0.1038**	**6.5909**	**0.1806**	**6.7714**	**1.7603**	**0.1684**	**1.9287**		**9,097.6510**	**9,097.6510**	**0.3214**	**8.0800e-003**	**9,106.9052**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.2396	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Energy	0.0283	0.2573	0.2161	1.5400e-003		0.0196	0.0196		0.0196	0.0196		308.7033	308.7033	5.9200e-003	5.6600e-003	310.5820
Mobile	4.0277	11.0857	43.3176	0.0996	6.4590	0.1493	6.6083	1.7251	0.1374	1.8625		8,488.7387	8,488.7387	0.3065		8,495.1761
Total	**16.2956**	**11.3443**	**43.6669**	**0.1011**	**6.4590**	**0.1693**	**6.6284**	**1.7251**	**0.1574**	**1.8825**		**8,797.7223**	**8,797.7223**	**0.3132**	**5.6600e-003**	**8,806.0548**

	ROG	NOx	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	5.19	2.56	1.68	2.53	2.00	6.22	2.11	2.00	6.53	2.40	0.00	3.30	3.30	2.53	29.95	3.30

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	6/1/2016	7/12/2016	5	30	
2	Building Construction	Building Construction	7/13/2016	11/29/2016	5	100	
3	Paving	Paving	11/30/2016	12/27/2016	5	20	
4	Architectural Coating	Architectural Coating	12/28/2016	1/31/2017	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 337,191; Non-Residential Outdoor: 112,397 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	99.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	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 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4746	0.0000	6.4746	3.3591	0.0000	3.3591			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.4746**	**3.5842**	**10.0588**	**3.3591**	**3.2975**	**6.6566**		**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

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	0.0860	0.1046	1.3777	2.8100e-003	0.2236	1.6600e-003	0.2252	0.0593	1.5200e-003	0.0608		233.5556	233.5556	0.0116		233.7992
Total	**0.0860**	**0.1046**	**1.3777**	**2.8100e-003**	**0.2236**	**1.6600e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**233.5556**	**233.5556**	**0.0116**		**233.7992**

3.2 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5251	0.0000	2.5251	1.3100	0.0000	1.3100			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**2.5251**	**3.5842**	**6.1093**	**1.3100**	**3.2975**	**4.6075**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0860	0.1046	1.3777	2.8100e-003	0.2236	1.6600e-003	0.2252	0.0593	1.5200e-003	0.0608		233.5556	233.5556	0.0116		233.7992
Total	**0.0860**	**0.1046**	**1.3777**	**2.8100e-003**	**0.2236**	**1.6600e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**233.5556**	**233.5556**	**0.0116**		**233.7992**

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

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	0.8391	8.6462	9.8231	0.0215	0.6220	0.1431	0.7651	0.1776	0.1316	0.3092		2,158.6086	2,158.6086	0.0155		2,158.9350
Worker	1.0840	1.3174	17.3588	0.0354	2.8168	0.0209	2.8377	0.7470	0.0192	0.7662		2,942.7999	2,942.7999	0.1462		2,945.8702
Total	**1.9231**	**9.9636**	**27.1819**	**0.0569**	**3.4388**	**0.1640**	**3.6028**	**0.9246**	**0.1508**	**1.0754**		**5,101.4085**	**5,101.4085**	**0.1618**		**5,104.8052**

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

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	0.8391	8.6462	9.8231	0.0215	0.6220	0.1431	0.7651	0.1776	0.1316	0.3092		2,158.6086	2,158.6086	0.0155		2,158.9350
Worker	1.0840	1.3174	17.3588	0.0354	2.8168	0.0209	2.8377	0.7470	0.0192	0.7662		2,942.7999	2,942.7999	0.1462		2,945.8702
Total	**1.9231**	**9.9636**	**27.1819**	**0.0569**	**3.4388**	**0.1640**	**3.6028**	**0.9246**	**0.1508**	**1.0754**		**5,101.4085**	**5,101.4085**	**0.1618**		**5,104.8052**

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	1.3519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4417**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0645	0.0784	1.0333	2.1100e-003	0.1677	1.2400e-003	0.1689	0.0445	1.1400e-003	0.0456		175.1667	175.1667	8.7000e-003		175.3494
Total	**0.0645**	**0.0784**	**1.0333**	**2.1100e-003**	**0.1677**	**1.2400e-003**	**0.1689**	**0.0445**	**1.1400e-003**	**0.0456**		**175.1667**	**175.1667**	**8.7000e-003**		**175.3494**

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	1.3519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4417**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0645	0.0784	1.0333	2.1100e-003	0.1677	1.2400e-003	0.1689	0.0445	1.1400e-003	0.0456		175.1667	175.1667	8.7000e-003		175.3494
Total	**0.0645**	**0.0784**	**1.0333**	**2.1100e-003**	**0.1677**	**1.2400e-003**	**0.1689**	**0.0445**	**1.1400e-003**	**0.0456**		**175.1667**	**175.1667**	**8.7000e-003**		**175.3494**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**42.0453**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.2151	0.2614	3.4442	7.0300e-003	0.5589	4.1500e-003	0.5630	0.1482	3.8100e-003	0.1520		583.8889	583.8889	0.0290		584.4981
Total	**0.2151**	**0.2614**	**3.4442**	**7.0300e-003**	**0.5589**	**4.1500e-003**	**0.5630**	**0.1482**	**3.8100e-003**	**0.1520**		**583.8889**	**583.8889**	**0.0290**		**584.4981**

3.5 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**42.0453**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.2151	0.2614	3.4442	7.0300e-003	0.5589	4.1500e-003	0.5630	0.1482	3.8100e-003	0.1520		583.8889	583.8889	0.0290		584.4981
Total	**0.2151**	**0.2614**	**3.4442**	**7.0300e-003**	**0.5589**	**4.1500e-003**	**0.5630**	**0.1482**	**3.8100e-003**	**0.1520**		**583.8889**	**583.8889**	**0.0290**		**584.4981**

3.5 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**42.0091**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	0.1911	0.2344	3.0938	7.0300e-003	0.5589	3.9900e-003	0.5629	0.1482	3.6800e-003	0.1519		560.9883	560.9883	0.0266		561.5467
Total	**0.1911**	**0.2344**	**3.0938**	**7.0300e-003**	**0.5589**	**3.9900e-003**	**0.5629**	**0.1482**	**3.6800e-003**	**0.1519**		**560.9883**	**560.9883**	**0.0266**		**561.5467**

3.5 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**42.0091**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	0.1911	0.2344	3.0938	7.0300e-003	0.5589	3.9900e-003	0.5629	0.1482	3.6800e-003	0.1519		560.9883	560.9883	0.0266		561.5467
Total	**0.1911**	**0.2344**	**3.0938**	**7.0300e-003**	**0.5589**	**3.9900e-003**	**0.5629**	**0.1482**	**3.6800e-003**	**0.1519**		**560.9883**	**560.9883**	**0.0266**		**561.5467**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	4.0277	11.0857	43.3176	0.0996	6.4590	0.1493	6.6083	1.7251	0.1374	1.8625		8,488.7387	8,488.7387	0.3065		8,495.1761
Unmitigated	4.0515	11.2731	43.9693	0.1016	6.5909	0.1522	6.7430	1.7603	0.1400	1.9003		8,656.4924	8,656.4924	0.3121		8,663.0471

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	722.60	179.20	31.00	1,416,691	1,388,358
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
University/College (4Yr)	410.40	312.00	0.00	1,014,456	994,167
Total	1,133.00	491.20	31.00	2,431,147	2,382,524

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
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471808	0.065740	0.172776	0.155900	0.055970	0.009039	0.016651	0.041094	0.001122	0.001334	0.004921	0.000712	0.002932

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust 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	0.0283	0.2573	0.2161	1.5400e-003		0.0196	0.0196		0.0196	0.0196		308.7033	308.7033	5.9200e-003	5.6600e-003	310.5820
NaturalGas Unmitigated	0.0404	0.3674	0.3086	2.2000e-003		0.0279	0.0279		0.0279	0.0279		440.8783	440.8783	8.4500e-003	8.0800e-003	443.5614

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
University/College (4Yr)	3647.47	0.0393	0.3576	0.3004	2.1500e-003		0.0272	0.0272		0.0272	0.0272		429.1136	429.1136	8.2200e-003	7.8700e-003	431.7251
Medical Office Building	100	1.0800e-003	9.8000e-003	8.2400e-003	6.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004		11.7647	11.7647	2.3000e-004	2.2000e-004	11.8363
Total		**0.0404**	**0.3674**	**0.3086**	**2.2100e-003**		**0.0279**	**0.0279**		**0.0279**	**0.0279**		**440.8783**	**440.8783**	**8.4500e-003**	**8.0900e-003**	**443.5614**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
University/College (4Yr)	2.55398	0.0275	0.2504	0.2103	1.5000e-003		0.0190	0.0190		0.0190	0.0190		300.4680	300.4680	5.7600e-003	5.5100e-003	302.2966
Medical Office Building	0.07	7.5000e-004	6.8600e-003	5.7600e-003	4.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004		8.2353	8.2353	1.6000e-004	1.5000e-004	8.2854
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0283**	**0.2573**	**0.2161**	**1.5400e-003**		**0.0196**	**0.0196**		**0.0196**	**0.0196**		**308.7033**	**308.7033**	**5.9200e-003**	**5.6600e-003**	**310.5820**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.2396	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Unmitigated	13.0960	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967

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	1.1418					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.9413					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0129	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Total	**13.0960**	**1.2600e-003**	**0.1332**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2803**	**0.2803**	**7.8000e-004**		**0.2967**

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	0.2855					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.9413					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0129	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Total	**12.2396**	**1.2600e-003**	**0.1332**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2803**	**0.2803**	**7.8000e-004**		**0.2967**

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 Vegetation

6160b California University of Science and Medicine

San Bernardino-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	20.00	1000sqft	0.46	10,000.00	0
University/College (4Yr)	240.00	Student	1.01	91,500.00	0
Other Asphalt Surfaces	1.55	Acre	1.55	67,518.00	0
Other Non-Asphalt Surfaces	44.08	1000sqft	1.01	44,076.00	0
Parking Lot	975.00	Space	8.77	390,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2017
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	1001.57	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - City of Colton Utility provides electricity to the project.

Land Use - 975 Parking spaces = 635 sp in PA-21, 100 sp Ancillary parking, 42 sp PC-UC & 198 sp for med schl. Med schl = 240 stdents in 91,500 SF bldg w/ 44,076 SF of landscpg. PC-UC = 20,000 SF (10,000 SF ftprint). ~1.55 acres on-site rds.

Construction Phase - Timing from developer.

Trips and VMT -

Grading - Site for Alt B is approximately 12.8 acres

Architectural Coating - SCAQMD Rule 1113 limits paints to 50g/L VOC

Vehicle Trips - TIA gives a daily trip rate of 1.71 trips/student for the school and 36.13 trips per TSF for the PC-UC.

Area Coating - SCAQMD Rule 1113 limits paints to 50g/L VOC

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - SCAQMD Rule 1113 limits paints to 50g/L VOC

Energy Mitigation - 2013 Title 24 commercial standards are approximately 30% mroe efficient than 2008 Title 24 commercial standards. Energy Star appliances used on-site where applicable.

Water Mitigation - CalGreen requires a 20% reduction in indoor water usage.

Waste Mitigation - AB 931

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	300.00	100.00
tblGrading	AcresOfGrading	75.00	12.80
tblLandUse	LandUseSquareFeet	20,000.00	10,000.00
tblLandUse	LandUseSquareFeet	44,111.39	91,500.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	WD_TR	2.38	1.71

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					
2016	42.2473	74.9255	50.3157	0.0804	6.6981	3.5859	10.2840	3.4184	3.2990	6.7174	0.0000	7,490.4124	7,490.4124	1.9466	0.0000	7,531.2907
2017	42.1880	2.4352	4.5059	9.3600e-003	0.5589	0.1773	0.7362	0.1482	0.1770	0.3252	0.0000	792.3806	792.3806	0.0563	0.0000	793.5631
Total	**84.4353**	**77.3607**	**54.8216**	**0.0898**	**7.2570**	**3.7632**	**11.0202**	**3.5666**	**3.4761**	**7.0426**	**0.0000**	**8,282.7930**	**8,282.7930**	**2.0029**	**0.0000**	**8,324.8538**

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					
2016	42.2473	74.9255	50.3157	0.0804	3.4387	3.5859	6.3345	1.3693	3.2990	4.6684	0.0000	7,490.4124	7,490.4124	1.9466	0.0000	7,531.2907
2017	42.1880	2.4352	4.5059	9.3600e-003	0.5589	0.1773	0.7362	0.1482	0.1770	0.3252	0.0000	792.3806	792.3806	0.0563	0.0000	793.5631
Total	**84.4353**	**77.3607**	**54.8216**	**0.0898**	**3.9976**	**3.7632**	**7.0707**	**1.5176**	**3.4761**	**4.9936**	**0.0000**	**8,282.7930**	**8,282.7930**	**2.0029**	**0.0000**	**8,324.8538**

	ROG	NOx	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**	**44.91**	**0.00**	**35.84**	**57.45**	**0.00**	**29.09**	**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	13.0960	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Energy	0.0404	0.3674	0.3086	2.2000e-003		0.0279	0.0279		0.0279	0.0279		440.8783	440.8783	8.4500e-003	8.0800e-003	443.5614
Mobile	3.9240	11.7603	41.4120	0.0946	6.5909	0.1529	6.7438	1.7603	0.1407	1.9010		8,095.3708	8,095.3708	0.3125		8,101.9336
Total	**17.0603**	**12.1289**	**41.8539**	**0.0968**	**6.5909**	**0.1813**	**6.7722**	**1.7603**	**0.1691**	**1.9294**		**8,536.5294**	**8,536.5294**	**0.3217**	**8.0800e-003**	**8,545.7917**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.2396	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Energy	0.0283	0.2573	0.2161	1.5400e-003		0.0196	0.0196		0.0196	0.0196		308.7033	308.7033	5.9200e-003	5.6600e-003	310.5820
Mobile	3.9016	11.5632	40.8645	0.0928	6.4590	0.1500	6.6091	1.7251	0.1381	1.8631		7,938.5998	7,938.5998	0.3069		7,945.0453
Total	**16.1695**	**11.8217**	**41.2138**	**0.0943**	**6.4590**	**0.1701**	**6.6291**	**1.7251**	**0.1581**	**1.8832**		**8,247.5834**	**8,247.5834**	**0.3136**	**5.6600e-003**	**8,255.9240**

	ROG	NOx	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	**5.22**	**2.53**	**1.53**	**2.57**	**2.00**	**6.19**	**2.11**	**2.00**	**6.51**	**2.39**	**0.00**	**3.38**	**3.38**	**2.52**	**29.95**	**3.39**

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	6/1/2016	7/12/2016	5	30	
2	Building Construction	Building Construction	7/13/2016	11/29/2016	5	100	
3	Paving	Paving	11/30/2016	12/27/2016	5	20	
4	Architectural Coating	Architectural Coating	12/28/2016	1/31/2017	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 337,191; Non-Residential Outdoor: 112,397 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	99.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	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 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4746	0.0000	6.4746	3.3591	0.0000	3.3591			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975		6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**6.4746**	**3.5842**	**10.0588**	**3.3591**	**3.2975**	**6.6566**		**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

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	0.0808	0.1117	1.1783	2.5600e-003	0.2236	1.6600e-003	0.2252	0.0593	1.5200e-003	0.0608		212.7476	212.7476	0.0116		212.9913
Total	**0.0808**	**0.1117**	**1.1783**	**2.5600e-003**	**0.2236**	**1.6600e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**212.7476**	**212.7476**	**0.0116**		**212.9913**

3.2 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5251	0.0000	2.5251	1.3100	0.0000	1.3100			0.0000			0.0000
Off-Road	6.4795	74.8137	49.1374	0.0617		3.5842	3.5842		3.2975	3.2975	0.0000	6,414.9807	6,414.9807	1.9350		6,455.6154
Total	**6.4795**	**74.8137**	**49.1374**	**0.0617**	**2.5251**	**3.5842**	**6.1093**	**1.3100**	**3.2975**	**4.6075**	**0.0000**	**6,414.9807**	**6,414.9807**	**1.9350**		**6,455.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0808	0.1117	1.1783	2.5600e-003	0.2236	1.6600e-003	0.2252	0.0593	1.5200e-003	0.0608		212.7476	212.7476	0.0116		212.9913
Total	**0.0808**	**0.1117**	**1.1783**	**2.5600e-003**	**0.2236**	**1.6600e-003**	**0.2252**	**0.0593**	**1.5200e-003**	**0.0608**		**212.7476**	**212.7476**	**0.0116**		**212.9913**

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

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	0.8926	8.8795	11.2800	0.0214	0.6220	0.1446	0.7665	0.1776	0.1329	0.3105		2,140.5064	2,140.5064	0.0160		2,140.8425
Worker	1.0182	1.4076	14.8460	0.0322	2.8168	0.0209	2.8377	0.7470	0.0192	0.7662		2,680.6195	2,680.6195	0.1462		2,683.6898
Total	**1.9109**	**10.2871**	**26.1260**	**0.0536**	**3.4388**	**0.1655**	**3.6042**	**0.9246**	**0.1521**	**1.0767**		**4,821.1260**	**4,821.1260**	**0.1622**		**4,824.5323**

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

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	0.8926	8.8795	11.2800	0.0214	0.6220	0.1446	0.7665	0.1776	0.1329	0.3105		2,140.5064	2,140.5064	0.0160		2,140.8425
Worker	1.0182	1.4076	14.8460	0.0322	2.8168	0.0209	2.8377	0.7470	0.0192	0.7662		2,680.6195	2,680.6195	0.1462		2,683.6898
Total	**1.9109**	**10.2871**	**26.1260**	**0.0536**	**3.4388**	**0.1655**	**3.6042**	**0.9246**	**0.1521**	**1.0767**		**4,821.1260**	**4,821.1260**	**0.1622**		**4,824.5323**

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	1.3519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4417**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0606	0.0838	0.8837	1.9200e-003	0.1677	1.2400e-003	0.1689	0.0445	1.1400e-003	0.0456		159.5607	159.5607	8.7000e-003		159.7434
Total	**0.0606**	**0.0838**	**0.8837**	**1.9200e-003**	**0.1677**	**1.2400e-003**	**0.1689**	**0.0445**	**1.1400e-003**	**0.0456**		**159.5607**	**159.5607**	**8.7000e-003**		**159.7434**

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	1.3519					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.4417**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0606	0.0838	0.8837	1.9200e-003	0.1677	1.2400e-003	0.1689	0.0445	1.1400e-003	0.0456		159.5607	159.5607	8.7000e-003		159.7434
Total	**0.0606**	**0.0838**	**0.8837**	**1.9200e-003**	**0.1677**	**1.2400e-003**	**0.1689**	**0.0445**	**1.1400e-003**	**0.0456**		**159.5607**	**159.5607**	**8.7000e-003**		**159.7434**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**42.0453**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.2020	0.2793	2.9456	6.3900e-003	0.5589	4.1500e-003	0.5630	0.1482	3.8100e-003	0.1520		531.8690	531.8690	0.0290		532.4781
Total	**0.2020**	**0.2793**	**2.9456**	**6.3900e-003**	**0.5589**	**4.1500e-003**	**0.5630**	**0.1482**	**3.8100e-003**	**0.1520**		**531.8690**	**531.8690**	**0.0290**		**532.4781**

3.5 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**42.0453**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.2020	0.2793	2.9456	6.3900e-003	0.5589	4.1500e-003	0.5630	0.1482	3.8100e-003	0.1520		531.8690	531.8690	0.0290		532.4781
Total	**0.2020**	**0.2793**	**2.9456**	**6.3900e-003**	**0.5589**	**4.1500e-003**	**0.5630**	**0.1482**	**3.8100e-003**	**0.1520**		**531.8690**	**531.8690**	**0.0290**		**532.4781**

3.5 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**42.0091**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	0.1789	0.2502	2.6378	6.3900e-003	0.5589	3.9900e-003	0.5629	0.1482	3.6800e-003	0.1519		510.9325	510.9325	0.0266		511.4910
Total	**0.1789**	**0.2502**	**2.6378**	**6.3900e-003**	**0.5589**	**3.9900e-003**	**0.5629**	**0.1482**	**3.6800e-003**	**0.1519**		**510.9325**	**510.9325**	**0.0266**		**511.4910**

3.5 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	41.6768					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**42.0091**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

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	0.1789	0.2502	2.6378	6.3900e-003	0.5589	3.9900e-003	0.5629	0.1482	3.6800e-003	0.1519		510.9325	510.9325	0.0266		511.4910
Total	**0.1789**	**0.2502**	**2.6378**	**6.3900e-003**	**0.5589**	**3.9900e-003**	**0.5629**	**0.1482**	**3.6800e-003**	**0.1519**		**510.9325**	**510.9325**	**0.0266**		**511.4910**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	3.9016	11.5632	40.8645	0.0928	6.4590	0.1500	6.6091	1.7251	0.1381	1.8631		7,938.5998	7,938.5998	0.3069		7,945.0453
Unmitigated	3.9240	11.7603	41.4120	0.0946	6.5909	0.1529	6.7438	1.7603	0.1407	1.9010		8,095.3708	8,095.3708	0.3125		8,101.9336

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	722.60	179.20	31.00	1,416,691	1,388,358
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
University/College (4Yr)	410.40	312.00	0.00	1,014,456	994,167
Total	1,133.00	491.20	31.00	2,431,147	2,382,524

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
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471808	0.065740	0.172776	0.155900	0.055970	0.009039	0.016651	0.041094	0.001122	0.001334	0.004921	0.000712	0.002932

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust 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	0.0283	0.2573	0.2161	1.5400e-003		0.0196	0.0196		0.0196	0.0196		308.7033	308.7033	5.9200e-003	5.6600e-003	310.5820
NaturalGas Unmitigated	0.0404	0.3674	0.3086	2.2000e-003		0.0279	0.0279		0.0279	0.0279		440.8783	440.8783	8.4500e-003	8.0800e-003	443.5614

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
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
University/College (4Yr)	3647.47	0.0393	0.3576	0.3004	2.1500e-003		0.0272	0.0272		0.0272	0.0272		429.1136	429.1136	8.2200e-003	7.8700e-003	431.7251
Medical Office Building	100	1.0800e-003	9.8000e-003	8.2400e-003	6.0000e-005		7.5000e-004	7.5000e-004		7.5000e-004	7.5000e-004		11.7647	11.7647	2.3000e-004	2.2000e-004	11.8363
Total		**0.0404**	**0.3674**	**0.3086**	**2.2100e-003**		**0.0279**	**0.0279**		**0.0279**	**0.0279**		**440.8783**	**440.8783**	**8.4500e-003**	**8.0900e-003**	**443.5614**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
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
University/College (4Yr)	2.55398	0.0275	0.2504	0.2103	1.5000e-003		0.0190	0.0190		0.0190	0.0190		300.4680	300.4680	5.7600e-003	5.5100e-003	302.2966
Medical Office Building	0.07	7.5000e-004	6.8600e-003	5.7600e-003	4.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004		8.2353	8.2353	1.6000e-004	1.5000e-004	8.2854
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0283**	**0.2573**	**0.2161**	**1.5400e-003**		**0.0196**	**0.0196**		**0.0196**	**0.0196**		**308.7033**	**308.7033**	**5.9200e-003**	**5.6600e-003**	**310.5820**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.2396	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Unmitigated	13.0960	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967

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	1.1418					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.9413					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0129	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Total	**13.0960**	**1.2600e-003**	**0.1332**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2803**	**0.2803**	**7.8000e-004**		**0.2967**

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	0.2855					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.9413					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0129	1.2600e-003	0.1332	1.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.2803	0.2803	7.8000e-004		0.2967
Total	**12.2396**	**1.2600e-003**	**0.1332**	**1.0000e-005**		**4.8000e-004**	**4.8000e-004**		**4.8000e-004**	**4.8000e-004**		**0.2803**	**0.2803**	**7.8000e-004**		**0.2967**

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 Vegetation

APPENDIX C

CalEEMod Model Annual Emissions Printouts

6160b California University of Science and Medicine

San Bernardino-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Medical Office Building	20.00	1000sqft	0.46	10,000.00	0
University/College (4Yr)	240.00	Student	1.01	91,500.00	0
Other Asphalt Surfaces	1.55	Acre	1.55	67,518.00	0
Other Non-Asphalt Surfaces	44.08	1000sqft	1.01	44,076.00	0
Parking Lot	975.00	Space	8.77	390,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	32
Climate Zone	10			**Operational Year**	2017
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	1001.57	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - City of Colton Utility provides electricity to the project.

Land Use - 975 Parking spaces = 635 sp in PA-21, 100 sp Ancillary parking, 42 sp PC-UC & 198 sp for med schl. Med schl = 240 stdents in 91,500 SF bldg w/ 44,076 SF of landscpg. PC-UC = 20,000 SF (10,000 SF ftprint). ~1.55 acres on-site rds.

Construction Phase - Timing from developer.

Trips and VMT -

Grading - Site for Alt B is approximately 12.8 acres

Architectural Coating - SCAQMD Rule 1113 limits paints to 50g/L VOC

Vehicle Trips - TIA gives a daily trip rate of 1.71 trips/student for the school and 36.13 trips per TSF for the PC-UC.

Area Coating - SCAQMD Rule 1113 limits paints to 50g/L VOC

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - SCAQMD Rule 1113 limits paints to 50g/L VOC

Energy Mitigation - 2013 Title 24 commercial standards are approximately 30% mroe efficient than 2008 Title 24 commercial standards. Energy Star appliances used on-site where applicable.

Water Mitigation - CalGreen requires a 20% reduction in indoor water usage.

Waste Mitigation - AB 931

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblConstructionPhase	NumDays	20.00	25.00
tblConstructionPhase	NumDays	300.00	100.00
tblGrading	AcresOfGrading	75.00	12.80
tblLandUse	LandUseSquareFeet	20,000.00	10,000.00
tblLandUse	LandUseSquareFeet	44,111.39	91,500.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblVehicleTrips	WD_TR	2.38	1.71

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.4599	3.3037	3.1935	5.2700e-003	0.2716	0.1733	0.4450	0.0974	0.1614	0.2588	0.0000	455.9487	455.9487	0.0704	0.0000	457.4264
2017	0.4640	0.0269	0.0507	1.0000e-004	6.0300e-003	1.9500e-003	7.9800e-003	1.6000e-003	1.9500e-003	3.5500e-003	0.0000	7.9861	7.9861	5.6000e-004	0.0000	7.9979
Total	**0.9238**	**3.3306**	**3.2442**	**5.3700e-003**	**0.2777**	**0.1753**	**0.4529**	**0.0990**	**0.1633**	**0.2623**	**0.0000**	**463.9348**	**463.9348**	**0.0709**	**0.0000**	**465.4243**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.4599	3.3037	3.1935	5.2700e-003	0.2124	0.1733	0.3857	0.0666	0.1614	0.2280	0.0000	455.9484	455.9484	0.0704	0.0000	457.4261
2017	0.4640	0.0269	0.0507	1.0000e-004	6.0300e-003	1.9500e-003	7.9800e-003	1.6000e-003	1.9500e-003	3.5500e-003	0.0000	7.9861	7.9861	5.6000e-004	0.0000	7.9979
Total	**0.9238**	**3.3306**	**3.2442**	**5.3700e-003**	**0.2184**	**0.1753**	**0.3937**	**0.0682**	**0.1633**	**0.2316**	**0.0000**	**463.9345**	**463.9345**	**0.0709**	**0.0000**	**465.4240**

	ROG	NOx	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**	**21.34**	**0.00**	**13.08**	**31.05**	**0.00**	**11.72**	**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	tons/yr										MT/yr					
Area	2.3893	1.6000e-004	0.0167	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0318	0.0318	9.0000e-005	0.0000	0.0336
Energy	7.3800e-003	0.0671	0.0563	4.0000e-004		5.1000e-003	5.1000e-003		5.1000e-003	5.1000e-003	0.0000	645.7749	645.7749	0.0180	4.7700e-003	647.6311
Mobile	0.5356	1.7096	6.0697	0.0136	0.9210	0.0217	0.9426	0.2464	0.0200	0.2663	0.0000	1,056.5638	1,056.5638	0.0403	0.0000	1,057.4097
Waste						0.0000	0.0000		0.0000	0.0000	52.7371	0.0000	52.7371	3.1167	0.0000	118.1871
Water						0.0000	0.0000		0.0000	0.0000	0.9592	24.3548	25.3140	0.0992	2.4700e-003	28.1641
Total	**2.9323**	**1.7768**	**6.1426**	**0.0140**	**0.9210**	**0.0268**	**0.9478**	**0.2464**	**0.0251**	**0.2715**	**53.6963**	**1,726.7253**	**1,780.4215**	**3.2743**	**7.2400e-003**	**1,851.4257**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.2330	1.6000e-004	0.0167	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0318	0.0318	9.0000e-005	0.0000	0.0336
Energy	5.1600e-003	0.0470	0.0394	2.8000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	586.6196	586.6196	0.0165	4.1500e-003	588.2507
Mobile	0.5324	1.6809	5.9890	0.0134	0.9025	0.0213	0.9238	0.2414	0.0196	0.2610	0.0000	1,036.1112	1,036.1112	0.0396	0.0000	1,036.9420
Waste						0.0000	0.0000		0.0000	0.0000	26.3685	0.0000	26.3685	1.5583	0.0000	59.0936
Water						0.0000	0.0000		0.0000	0.0000	0.7674	20.2811	21.0485	0.0794	1.9800e-003	23.3305
Total	**2.7705**	**1.7280**	**6.0451**	**0.0136**	**0.9025**	**0.0249**	**0.9274**	**0.2414**	**0.0232**	**0.2646**	**27.1359**	**1,643.0437**	**1,670.1796**	**1.6939**	**6.1300e-003**	**1,707.6505**

	ROG	NOx	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	**5.52**	**2.74**	**1.59**	**2.71**	**2.00**	**7.19**	**2.15**	**2.00**	**7.57**	**2.52**	**49.46**	**4.85**	**6.19**	**48.27**	**15.33**	**7.77**

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	6/1/2016	7/12/2016	5	30	
2	Building Construction	Building Construction	7/13/2016	11/29/2016	5	100	
3	Paving	Paving	11/30/2016	12/27/2016	5	20	
4	Architectural Coating	Architectural Coating	12/28/2016	1/31/2017	5	25	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 337,191; Non-Residential Outdoor: 112,397 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	252.00	99.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	50.00	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 - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0971	0.0000	0.0971	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2936	87.2936	0.0263	0.0000	87.8465
Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.0971**	**0.0538**	**0.1509**	**0.0504**	**0.0495**	**0.0999**	**0.0000**	**87.2936**	**87.2936**	**0.0263**	**0.0000**	**87.8465**

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	1.1500e-003	1.7400e-003	0.0183	4.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9397	2.9397	1.6000e-004	0.0000	2.9431
Total	**1.1500e-003**	**1.7400e-003**	**0.0183**	**4.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.9397**	**2.9397**	**1.6000e-004**	**0.0000**	**2.9431**

3.2 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0379	0.0000	0.0379	0.0197	0.0000	0.0197	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0972	1.1222	0.7371	9.3000e-004		0.0538	0.0538		0.0495	0.0495	0.0000	87.2935	87.2935	0.0263	0.0000	87.8464
Total	**0.0972**	**1.1222**	**0.7371**	**9.3000e-004**	**0.0379**	**0.0538**	**0.0916**	**0.0197**	**0.0495**	**0.0691**	**0.0000**	**87.2935**	**87.2935**	**0.0263**	**0.0000**	**87.8464**

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	1.1500e-003	1.7400e-003	0.0183	4.0000e-005	3.2900e-003	2.0000e-005	3.3100e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	2.9397	2.9397	1.6000e-004	0.0000	2.9431
Total	**1.1500e-003**	**1.7400e-003**	**0.0183**	**4.0000e-005**	**3.2900e-003**	**2.0000e-005**	**3.3100e-003**	**8.7000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.9397**	**2.9397**	**1.6000e-004**	**0.0000**	**2.9431**

3.3 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1703	1.4253	0.9253	1.3400e-003		0.0984	0.0984		0.0924	0.0924	0.0000	121.0768	121.0768	0.0300	0.0000	121.7074
Total	**0.1703**	**1.4253**	**0.9253**	**1.3400e-003**		**0.0984**	**0.0984**		**0.0924**	**0.0924**	**0.0000**	**121.0768**	**121.0768**	**0.0300**	**0.0000**	**121.7074**

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	0.0444	0.4525	0.5779	1.0700e-003	0.0306	7.1900e-003	0.0378	8.7600e-003	6.6100e-003	0.0154	0.0000	97.5680	97.5680	7.1000e-004	0.0000	97.5830
Worker	0.0485	0.0732	0.7702	1.6400e-003	0.1382	1.0500e-003	0.1392	0.0367	9.6000e-004	0.0377	0.0000	123.4690	123.4690	6.6300e-003	0.0000	123.6083
Total	**0.0929**	**0.5257**	**1.3481**	**2.7100e-003**	**0.1688**	**8.2400e-003**	**0.1770**	**0.0455**	**7.5700e-003**	**0.0530**	**0.0000**	**221.0370**	**221.0370**	**7.3400e-003**	**0.0000**	**221.1912**

3.3 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1703	1.4253	0.9253	1.3400e-003		0.0984	0.0984		0.0924	0.0924	0.0000	121.0767	121.0767	0.0300	0.0000	121.7073
Total	**0.1703**	**1.4253**	**0.9253**	**1.3400e-003**		**0.0984**	**0.0984**		**0.0924**	**0.0924**	**0.0000**	**121.0767**	**121.0767**	**0.0300**	**0.0000**	**121.7073**

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	0.0444	0.4525	0.5779	1.0700e-003	0.0306	7.1900e-003	0.0378	8.7600e-003	6.6100e-003	0.0154	0.0000	97.5680	97.5680	7.1000e-004	0.0000	97.5830
Worker	0.0485	0.0732	0.7702	1.6400e-003	0.1382	1.0500e-003	0.1392	0.0367	9.6000e-004	0.0377	0.0000	123.4690	123.4690	6.6300e-003	0.0000	123.6083
Total	**0.0929**	**0.5257**	**1.3481**	**2.7100e-003**	**0.1688**	**8.2400e-003**	**0.1770**	**0.0455**	**7.5700e-003**	**0.0530**	**0.0000**	**221.0370**	**221.0370**	**7.3400e-003**	**0.0000**	**221.1912**

3.4 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.2239	0.1482	2.2000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	21.0138	21.0138	6.3400e-003	0.0000	21.1469
Paving	0.0135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0344**	**0.2239**	**0.1482**	**2.2000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**21.0138**	**21.0138**	**6.3400e-003**	**0.0000**	**21.1469**

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	5.8000e-004	8.7000e-004	9.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4699	1.4699	8.0000e-005	0.0000	1.4715
Total	**5.8000e-004**	**8.7000e-004**	**9.1700e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4699**	**1.4699**	**8.0000e-005**	**0.0000**	**1.4715**

3.4 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0209	0.2239	0.1482	2.2000e-004		0.0126	0.0126		0.0116	0.0116	0.0000	21.0138	21.0138	6.3400e-003	0.0000	21.1469
Paving	0.0135					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0344**	**0.2239**	**0.1482**	**2.2000e-004**		**0.0126**	**0.0126**		**0.0116**	**0.0116**	**0.0000**	**21.0138**	**21.0138**	**6.3400e-003**	**0.0000**	**21.1469**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	8.7000e-004	9.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4699	1.4699	8.0000e-005	0.0000	1.4715
Total	**5.8000e-004**	**8.7000e-004**	**9.1700e-003**	**2.0000e-005**	**1.6400e-003**	**1.0000e-005**	**1.6600e-003**	**4.4000e-004**	**1.0000e-005**	**4.5000e-004**	**0.0000**	**1.4699**	**1.4699**	**8.0000e-005**	**0.0000**	**1.4715**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.5600e-003	2.8300e-003	0.0000		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.3830	0.3830	5.0000e-005	0.0000	0.3839
Total	**0.0631**	**3.5600e-003**	**2.8300e-003**	**0.0000**		**2.9000e-004**	**2.9000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.3830**	**0.3830**	**5.0000e-005**	**0.0000**	**0.3839**

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	2.9000e-004	4.4000e-004	4.5800e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7349	0.7349	4.0000e-005	0.0000	0.7358
Total	**2.9000e-004**	**4.4000e-004**	**4.5800e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7349**	**0.7349**	**4.0000e-005**	**0.0000**	**0.7358**

3.5 Architectural Coating - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.5600e-003	2.8300e-003	0.0000		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.3830	0.3830	5.0000e-005	0.0000	0.3839
Total	**0.0631**	**3.5600e-003**	**2.8300e-003**	**0.0000**		**2.9000e-004**	**2.9000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.3830**	**0.3830**	**5.0000e-005**	**0.0000**	**0.3839**

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	2.9000e-004	4.4000e-004	4.5800e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7349	0.7349	4.0000e-005	0.0000	0.7358
Total	**2.9000e-004**	**4.4000e-004**	**4.5800e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7349**	**0.7349**	**4.0000e-005**	**0.0000**	**0.7358**

3.5 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4584					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6600e-003	0.0240	0.0206	3.0000e-005		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003	0.0000	2.8086	2.8086	3.0000e-004	0.0000	2.8148
Total	**0.4621**	**0.0240**	**0.0206**	**3.0000e-005**		**1.9100e-003**	**1.9100e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**2.8086**	**2.8086**	**3.0000e-004**	**0.0000**	**2.8148**

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	1.8700e-003	2.8600e-003	0.0301	7.0000e-005	6.0300e-003	4.0000e-005	6.0700e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.1775	5.1775	2.7000e-004	0.0000	5.1831
Total	**1.8700e-003**	**2.8600e-003**	**0.0301**	**7.0000e-005**	**6.0300e-003**	**4.0000e-005**	**6.0700e-003**	**1.6000e-003**	**4.0000e-005**	**1.6400e-003**	**0.0000**	**5.1775**	**5.1775**	**2.7000e-004**	**0.0000**	**5.1831**

3.5 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4584					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6600e-003	0.0240	0.0206	3.0000e-005		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003	0.0000	2.8086	2.8086	3.0000e-004	0.0000	2.8148
Total	**0.4621**	**0.0240**	**0.0206**	**3.0000e-005**		**1.9100e-003**	**1.9100e-003**		**1.9100e-003**	**1.9100e-003**	**0.0000**	**2.8086**	**2.8086**	**3.0000e-004**	**0.0000**	**2.8148**

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	1.8700e-003	2.8600e-003	0.0301	7.0000e-005	6.0300e-003	4.0000e-005	6.0700e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.1775	5.1775	2.7000e-004	0.0000	5.1831
Total	**1.8700e-003**	**2.8600e-003**	**0.0301**	**7.0000e-005**	**6.0300e-003**	**4.0000e-005**	**6.0700e-003**	**1.6000e-003**	**4.0000e-005**	**1.6400e-003**	**0.0000**	**5.1775**	**5.1775**	**2.7000e-004**	**0.0000**	**5.1831**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	0.5324	1.6809	5.9890	0.0134	0.9025	0.0213	0.9238	0.2414	0.0196	0.2610	0.0000	1,036.1112	1,036.1112	0.0396	0.0000	1,036.9420
Unmitigated	0.5356	1.7096	6.0697	0.0136	0.9210	0.0217	0.9426	0.2464	0.0200	0.2663	0.0000	1,056.5638	1,056.5638	0.0403	0.0000	1,057.4097

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Medical Office Building	722.60	179.20	31.00	1,416,691	1,388,358
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
University/College (4Yr)	410.40	312.00	0.00	1,014,456	994,167
Total	1,133.00	491.20	31.00	2,431,147	2,382,524

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
Medical Office Building	16.60	8.40	6.90	29.60	51.40	19.00	60	30	10
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
University/College (4Yr)	16.60	8.40	6.90	6.40	88.60	5.00	91	9	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.471808	0.065740	0.172776	0.155900	0.055970	0.009039	0.016651	0.041094	0.001122	0.001334	0.004921	0.000712	0.002932

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive 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	535.5103	535.5103	0.0155	3.2100e-003	536.8304
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	572.7826	572.7826	0.0166	3.4300e-003	574.1946
NaturalGas Mitigated	5.1600e-003	0.0470	0.0394	2.8000e-004		3.5700e-003	3.5700e-003		3.5700e-003	3.5700e-003	0.0000	51.1093	51.1093	9.8000e-004	9.4000e-004	51.4203
NaturalGas Unmitigated	7.3800e-003	0.0671	0.0563	4.0000e-004		5.1000e-003	5.1000e-003		5.1000e-003	5.1000e-003	0.0000	72.9924	72.9924	1.4000e-003	1.3400e-003	73.4366

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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
University/College (4Yr)	1.33133e+006	7.1800e-003	0.0653	0.0548	3.9000e-004		4.9600e-003	4.9600e-003		4.9600e-003	4.9600e-003	0.0000	71.0446	71.0446	1.3600e-003	1.3000e-003	71.4769
Medical Office Building	36500	2.0000e-004	1.7900e-003	1.5000e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9478	1.9478	4.0000e-005	4.0000e-005	1.9596
Total		**7.3800e-003**	**0.0671**	**0.0563**	**4.0000e-004**		**5.1000e-003**	**5.1000e-003**		**5.1000e-003**	**5.1000e-003**	**0.0000**	**72.9924**	**72.9924**	**1.4000e-003**	**1.3400e-003**	**73.4366**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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
University/College (4Yr)	932202	5.0300e-003	0.0457	0.0384	2.7000e-004		3.4700e-003	3.4700e-003		3.4700e-003	3.4700e-003	0.0000	49.7459	49.7459	9.5000e-004	9.1000e-004	50.0486
Medical Office Building	25550	1.4000e-004	1.2500e-003	1.0500e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3635	1.3635	3.0000e-005	2.0000e-005	1.3717
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**5.1700e-003**	**0.0470**	**0.0394**	**2.8000e-004**		**3.5700e-003**	**3.5700e-003**		**3.5700e-003**	**3.5700e-003**	**0.0000**	**51.1093**	**51.1093**	**9.8000e-004**	**9.3000e-004**	**51.4203**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	106900	48.5652	1.4100e-003	2.9000e-004	48.6849
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	343200	155.9173	4.5100e-003	9.3000e-004	156.3017
University/College (4Yr)	810690	368.3001	0.0107	2.2100e-003	369.2080
Total		**572.7826**	**0.0166**	**3.4300e-003**	**574.1946**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Medical Office Building	94855	43.0931	1.2500e-003	2.6000e-004	43.1993
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	343200	155.9173	4.5100e-003	9.3000e-004	156.3017
University/College (4Yr)	740693	336.4999	9.7400e-003	2.0200e-003	337.3295
Total		**535.5103**	**0.0155**	**3.2100e-003**	**536.8304**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.2330	1.6000e-004	0.0167	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0318	0.0318	9.0000e-005	0.0000	0.0336
Unmitigated	2.3893	1.6000e-004	0.0167	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0318	0.0318	9.0000e-005	0.0000	0.0336

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	0.2084					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1793					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6100e-003	1.6000e-004	0.0167	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0318	0.0318	9.0000e-005	0.0000	0.0336
Total	**2.3893**	**1.6000e-004**	**0.0167**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0318**	**0.0318**	**9.0000e-005**	**0.0000**	**0.0336**

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	0.0521					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.1793					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6100e-003	1.6000e-004	0.0167	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.0318	0.0318	9.0000e-005	0.0000	0.0336
Total	**2.2330**	**1.6000e-004**	**0.0167**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.0318**	**0.0318**	**9.0000e-005**	**0.0000**	**0.0336**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.0485	0.0794	1.9800e-003	23.3305
Unmitigated	25.3140	0.0992	2.4700e-003	28.1641

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	2.50961 / 0.478021	18.0545	0.0823	2.0300e-003	20.4129
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
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
University/College (4Yr)	0.513864 / 0.803736	7.2595	0.0170	4.4000e-004	7.7512
Total		**25.3140**	**0.0992**	**2.4700e-003**	**28.1641**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Medical Office Building	2.00769 / 0.478021	14.5139	0.0658	1.6300e-003	16.4009
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
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
University/College (4Yr)	0.411091 / 0.803736	6.5345	0.0136	3.5000e-004	6.9297
Total		**21.0485**	**0.0794**	**1.9800e-003**	**23.3305**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.3685	1.5583	0.0000	59.0936
Unmitigated	52.7371	3.1167	0.0000	118.1871

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	216	43.8461	2.5912	0.0000	98.2618
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	43.8	8.8910	0.5254	0.0000	19.9253
Total		**52.7371**	**3.1167**	**0.0000**	**118.1871**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Medical Office Building	108	21.9230	1.2956	0.0000	49.1309
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
University/College (4Yr)	21.9	4.4455	0.2627	0.0000	9.9627
Total		**26.3685**	**1.5583**	**0.0000**	**59.0936**

9.0 Operational Offroad

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

10.0 Vegetation

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