AIR QUALITY & GREENHOUSE GAS EMISSIONS IMPACT ASSESSMENT

FOR

HIGH PLAINS SHOOTING SPORTS CENTER PROJECT

SHASTA COUNTY, CA

MARCH 2016

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INTRODUCTION

The purpose of this report is to evaluate air quality and greenhouse gas (GHG) impacts associated with the proposed High Plains Shooting Sport Center project (proposed project). The proposed project consists of public skeet, trap, pistol, and long-rifle ranges with a 5,000 square foot main clubhouse and a separate law-enforcement range and clubhouse. The proposed project is located within the County of Shasta, which is located in the Northern Sacramento Valley Air Basin (NSVAB) and within the jurisdiction of the Shasta County Air Quality Management District (AQMD).

AIR QUALITY

This section describes the existing setting related to air quality, provides a summary of the regulatory framework, and evaluates potential air quality impacts associated with the proposed project.

EXISTING SETTING

Northern Sacramento Valley Air Basin

The NSVAB consists of a total of seven counties, including Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta counties. The NSVAB is bounded on the north and west by the Coastal Mountain Range and on the east by the southern portion of the Cascade Mountain Range and the northern portion of the Sierra Nevada Mountains. These mountain ranges reach heights in excess of 6,000 feet with peaks rising much higher. This provides a substantial physical barrier to locally created pollution as well as that transported northward on prevailing winds from the Sacramento Metropolitan area (NSVPA 2009).

The valley is often subjected to inversion layers that, coupled with geographic barriers and high summer temperatures, create a high potential for air pollution problems. Generally, Shasta County experiences moderate to very poor capability to disperse pollutants nearly 80 percent of the time. This is, in large measure, due to relatively stable atmospheric conditions which acts to suppress vertical air movement. Extremely stable atmospheric conditions referred to as "inversions" act as barriers to pollutants. In valley locations under 1,000 feet elevation, such as the Redding Metropolitan area, they create a "lid" under which pollutants are trapped. Dust and other pollutants can be trapped within these inversion layers and will not disperse until atmospheric conditions become unstable. This situation creates concentrations of pollutants at or near the ground surface and as a result poses significant health risks for plants, animals, and people (NSVPA 2009).

Regional Climate and Atmospheric Conditions

The climate of the NSVAB, as with all of Central California, is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Climate is also affected by the temperature moderating effects of the nearby oceanic heat reservoir. Warm summers, cool winters, rainfall, daytime onshore breezes, and moderate humidity characterize regional climatic conditions. In summer when the high-pressure cell is strongest, temperatures are very warm and humidity is low. The daily incursion of the sea breeze into the Central Valley, however, creates persistent breezes that moderate the summer heat. In winter, when the high-pressure cell is weakest, conditions are characterized by occasional rainstorms interspersed with stagnant conditions and sometimes heavy fog. Airflow patterns in the basin can be characterized by one of eight directional types, the most frequent being northwesterly. Northwest winds are predominant in spring and summer, but seasonal variations do occur. Calm conditions dominate the winter months.

Terrain features create various microclimates. The pattern of mountains and hills within the basin is primarily responsible for the wide variations of rainfall, temperatures, and localized winds that occur throughout the region. Temperature variations have an important influence on basin wind flow, dispersion along mountain ridges, vertical mixing and photochemistry. Because the temperature moderating marine influence decreases with distance, monthly and annual temperature variations are greater inland than along the coast.

Precipitation is highly variable seasonally. Summer months are often dry, averaging less than one inch in total precipitation per month. Rainfall is most abundant during the winter months and increases with elevation. Annual rainfall is lowest in the inland valleys, higher in the coastal and inland foothills, and highest in the mountains (NSVPA 2009).

Air Pollutants and Ambient Air Quality Standards

Criteria Pollutants

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

The following provides a summary discussion of the primary and secondary criteria air pollutants of primary concern. In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere.

Ozone (O_3) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_x and volatile organic compounds (VOC) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health affects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas (ROG) is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Volatile Organic Compounds (VOC) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

Nitrogen Dioxide (NO_2) is one of a group of highly reactive gasses known as "oxides of nitrogen," or "nitrogen oxides" (NO_x). Other nitrogen oxides include nitrous acid and nitric acid. NO_2 is used as the indicator for the larger group of NO_x. NO_2 forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone, and fine particle pollution, NO_2 is a reddish-brown gas that is toxic at high concentrations. Sources of NO_2, as well as NO_x, result primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution 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. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those 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. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5}$- PM_{10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposures to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, ARB and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM_{10}. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_X, suspended SO_X particles contribute to the poor visibility. These SO_X particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). OSHA regulates workplace exposure to H_2S.

Ambient Air Quality Standards

Both the U.S. EPA and California Air Resources Board (ARB) established ambient air quality standards for common air pollutants. These ambient air quality standards are levels of contaminants that represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, federal and state standards differ in some cases. In general, California standards are more stringent. This is particularly true for NO_2 and PM_{10}. The federal and state standards for the criteria pollutants and other state regulated air pollutants are shown in Table 1.

Table 1
Summary of Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard	Federal Primary Standard
Ozone (O_3)	1-Hour 8-Hour	0.09 ppm 0.07 ppm	– 0.075 ppm
Carbon Monoxide (CO)	1-Hour 8-Hour	20 ppm 9.0 ppm	35 ppm 9 ppm
Nitrogen Dioxide (NO_2)	Annual Average 1-Hour	0.030 ppm 0.18 ppm	0.053 ppm 0.100 ppm
Sulfur Dioxide (SO_2)	Annual Average 24-Hour 3-Hour 1-Hour	– 0.04 ppm — 0.25 ppm	0.030 ppm 0.14 ppm – 75 ppb
Respirable Particulate Matter (PM_{10})	Annual Average 24-Hour	20 µg/m³ 50 µg/m³	— 150 µg/m³
Fine Particulate Matter ($PM_{2.5}$)	Annual Average 24-Hour	12 µg/m³ —	12.0 µg/m³ 35 µg/m³
Lead	30-day Average Calendar Quarter Rolling 3-Month Avg.	1.5 µg/m³ –	– 1.5 µg/m³ 0.15 µg/m³
Sulfates	24-Hour	25 µg/m³	No National Standards
Hydrogen Sulfide	1-hour	0.03 ppm	
Vinyl Chloride	24-hour	0.01 ppm	
Visibility Reducing Particulate Matter	8-hour	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more	

Notes: ppm = parts per million, µg/m³ = micrograms per cubic meter, ppb = parts per billion.
Source: ARB 2016

Ambient Air Quality Attainment Designations

Both the ARB and the U.S. EPA designate areas based on the ability to achieve and maintain applicable ambient air quality standards for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and, thereby, initiate planning efforts for improvements. The three basic designation categories are non-attainment, attainment, and unclassified. Unclassified is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the non-attainment designation, called non-attainment-transitional. The non-attainment-transitional designation is given to non-attainment areas that are progressing and nearing attainment.

As noted earlier in this report, the proposed project site is located in Shasta County. Shasta County is currently designated nonattainment for the state ozone and PM_{10} standards. Shasta County is designated either attainment or unclassified for all remaining state ambient air quality standards, as well as all national ambient air quality standards.

Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA), and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively). Instead, the U.S. EPA and the ARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects:

Diesel Particulate Matter

Diesel particulate matter (DPM) was identified as a TAC by the ARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40% of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3 percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities.

In October 2000, the ARB issued a report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles", which is commonly referred to as the Diesel Risk Reduction Plan (DRRP). The DRRP provides a mechanism for combating the DPM problem. The goal of the DRRP is to reduce concentrations of DPM by 85 percent by the year 2020, in comparison to year 2000 baseline emissions. The key elements of the DRRP are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices

on diesel engines. When fully implemented, the DRPP will significantly reduce emissions from both old and new diesel fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, DPM concentrations and associated health risks in future years are projected to decline (ARB 2013).

Exposure to DPM can have immediate health effects. DPM can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, DPM has been identified as a carcinogen.

Asbestos

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Naturally occurring asbestos (NOA), which was identified as a TAC in 1986 by CARB, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located near any areas that are likely to contain ultramafic rock.

Odors

Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

REGULATORY FRAMEWORK

Air quality in the NSVAB is addressed through the efforts of various 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 primarily responsible for improving the air quality in the NSVAB are discussed below along with their individual responsibilities.

Federal

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 2.

Toxic Substances Control Act

The Toxic Substances Control Act first authorized the U.S. EPA to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies to inspect their schools for asbestos-containing building materials (ACBM) and to prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAPs). These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include ACBM. NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBM associated with the demolition and renovation of structures.

State

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing CAAQS, which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 2. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Local

Shasta County Air Quality Management District

The project site is located in the jurisdiction of the Shasta County AQMD. The Shasta County AQMD is one of seven air pollution control districts that make up the NSVAB. The NSVAB consists of Shasta, Tehama, Glenn, Butte, Colusa, Yuba and Sutter air pollution control districts.

The Shasta County AQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The Shasta County AQMD, along with other air districts in the NSVAB, have committed to jointly prepare the *NSVAB Air Quality Attainment Plan* for the purpose of achieving and maintaining healthful air quality throughout the air basin. The Plan was initially adopted in 1994 and updated on a triennial basis. The most recent update occurred in 2012. The triennial updates of the *NSVAB Air Quality Attainment Plan* address the progress made in implementing the plan and propose modifications to the strategies necessary to attain the California ambient air quality standard for the 1-hour ozone standard at the earliest practicable date. Like previous updates of the *NSVAB Air Quality Attainment Plan*, the 2012 update focuses on adoption and implementation of control measures for stationary sources, area wide sources, indirect sources, and addresses public education and information programs. The 2012 update also addresses the effect that pollutant transport has on the NSVAB's ability to meet and attain the State standards (NSVPA 2012).

Shasta County General Plan

The Shasta County General Plan includes various air quality related goals and policies stated under the Air Quality Element. These goals and policies are intended to help protect and improve the County's air quality and to help the region attain and maintain federal and state ambient air quality standards (Shasta County 2004).

IMPACT ASSESSMENT

Methodology

Short-term construction and long-term operational emissions were calculated using the California Emissions Estimator Model (CalEEMod) computer program. Construction-generated emissions were calculated based on the default assumptions contained in the model for Shasta County and estimated construction schedule information provided by the project proponent. Based on the information provided, grading activities for the proposed project are anticipated to occur over an approximate two month period. No demolition of existing structures or the import/export of soil is not anticipated to be required for this project. Emissions modeling assumptions and results are included in Appendix A of this report.

Operational emissions were quantified based on vehicle trip-generation rates obtained from the traffic analysis prepared for this project and the default modeling parameters identified in the model. The estimated peak-hour trip-generation rates and traffic volumes for the proposed project, as identified in the traffic analysis prepared for this project, are summarized in Table 2. The traffic analysis did not, however, provide estimated average-daily trip-generation rates for the proposed project. To be conservative, the average-daily trip-generation rate was calculated based on the peak-hour trip-generation rates/traffic volumes applied over an estimated 8-hour daily operational period for weekday, Saturday, and Sunday

operational conditions. The calculated average-daily trip-generation rates are summarized in Table 2. Emissions modeling assumptions and results are included in Appendix A of this report.

Table 2
Project Trip-Generation Rates

	Weekday	Saturday	Sunday
Peak-hour Trip-Generation Rate	0.02 trips/lf	0.02 trips/lf	0.02 trips/lf
Peak-Hour Traffic Volume	30	60	30
Average-Daily Traffic Volume	240	480	240
Average-Daily Trip-Generation Rate	42.9/ksf	85.8/ksf	42.9/ksf

lf = linear feet of shooting positions

ksf = 1,000 square feet (sq.ft.) of building floor area

1. *Based on information obtained from the traffic analysis prepared for the proposed project (Omni-Means, 2015).*
2. *To be conservative, average-hourly traffic volumes were based on peak-hour traffic volumes applied over an 8-hour period.*
3. *Calculated based on an estimated 5,575 total sq.ft. of onsite building area. Includes an estimated 5,000 sq.ft. main clubhouse and an approximate 600 sq.ft. law enforcement clubhouse.*

Significance Criteria

To assist local jurisdictions in the evaluation of air quality impacts associated with development projects subject to CEQA review, the Shasta County AQMD has adopted recommended air quality thresholds for determination of impact significance. These thresholds are included in the Shasta County General Plan. The thresholds of significance for determination of regional air quality impacts are summarized in **Table 3**.

Table 3
Shasta County AQMD Thresholds of Significance

Project-Level Significance Threshold	Emissions (lbs/Day)		
	NO_X	ROG	PM_{10}
Level "A" Thresholds	25	25	80
Level "B" Thresholds	137	137	137

Apply Standard Mitigation Measures (SMM) to all projects based on potential air quality impacts.

Apply SMM and appropriate Best Available Mitigation Measures (BAMM) when a project exceeds Level "A" thresholds. The appropriate type and number of BAMM applied to a project will be based on the unique characteristics of the project. BAMM will be selected from a list of measures kept updated by the Shasta County AQMD.

Apply SMM, BAMM, and special BAMM (when project exceeds Level "B" thresholds) based on their emission reduction potential to lower project emissions below Level "B" thresholds. If project emissions cannot be reduced to below Level "B" thresholds, emission offsets will be required.

Impact Summary

Air quality impacts were evaluated based on the environmental checklist questions identified in Appendix G of the *CEQA Guidelines*. Project impacts are summarized in Table 4.

Table 4
Summary of Project-Related Air Quality Impacts

Impact		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AQ-1:	Would the project conflict with or obstruct implementation of the applicable air quality plan?	☐	■	☐	☐
AQ-2:	Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	■	☐	☐
AQ-3:	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	■	☐	☐
AQ-4:	Would the project expose sensitive receptors to substantial pollutant concentrations?	☐	■	☐	☐
AQ-5:	Would the project create objectionable odors affecting a substantial number of people?	☐	☐	■	☐

Impact Discussions and Mitigation Measures

IMPACT AQ-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

As discussed earlier in this report, the 2009 NSVAB *Air Quality Attainment Plan* was developed to address non-attainment of the state ozone ambient air quality standard. No PM_{10} plans have been prepared or are required under State air quality planning law.

The proposed project would not result in the installation of any major stationary sources of emissions. However, implementation of the proposed project would result in short-term construction emissions that would exceed Shasta County AQMD's significance threshold for ROG, which is considered an ozone-precursor pollutant. Therefore, construction-generated emissions of ROG could contribute to a cumulatively considerable net increase of regional emissions of ozone for which the region is designated nonattainment. As a result, this impact is considered potentially significant, subject to mitigation. Refer to *Impact AQ-2* for additional discussion of short-term construction and long-term operational emissions.

Mitigation Measure

Implement Mitigation Measure AQ-1 (refer to Impact AQ-2).

Significance After Mitigation

Proposed mitigation measures would require implementation of Shasta County AQMD-recommended measures for the control of construction-generated emissions, which would include measures for the control of mobile source emissions generated during construction. An additional mitigation measure has also been included to require the use of low-VOC architectural paints and recycling of construction waste materials, which would further reduce project-generated emissions of ROG. With mitigation, this impact would be considered less than significant.

IMPACT AQ-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Implementation of the proposed project would result in increased short-term construction and long-operational emissions. Short-term construction and long-operational emissions are discussed in more detail, as follows:

Short-term Construction

Construction of the proposed project would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the project area include ozone-precursor pollutants (i.e., ROG and NO_x) and particulate matter (i.e., PM_{10} and $PM_{2.5}$).

Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but possess the potential to represent a significant air quality impact. Construction-related activities would result in the temporary generation of emissions resulting from onsite grading, excavation, landscaping, the application of pavement coatings, motor vehicle exhaust associated with construction equipment and worker trips. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities. Estimated maximum daily construction-generated emissions are summarized in Table 5.

Table 5
Construction-Generated Emissions without Mitigation

Construction Phase	Maximum Daily Emissions (lbs/day)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Site Preparation	1.5	13.7	1.5	0.8
Grading	1.4	11.3	1.7	1.3
Building Construction	1.5	13.9	1.0	0.9
Architectural Coatings	61.1	2.4	0.2	0.2
Asphalt Paving	1.3	10.8	0.9	0.7
Maximum Daily Emissions[1]*:*	*63.9*	*13.9*	*1.7*	*1.3*
AQMD Significance Thresholds (Level A/B):	*25/137*	*25/137*	*80/137*	*--*
Maximum Daily Emissions Exceeds Thresholds?	***Yes***/*No*	*No/No*	*No/No*	*--*

Maximum construction phase emissions assume that building construction, architectural coatings, and asphalt paving could occur on the same day. Does not reflect the sum of all construction phases.

Refer to Appendix A of this report for construction modeling assumptions and results.

Based on the modeling conducted, maximum unmitigated construction-generated emissions would total approximately 63.9 pounds per day (lbs/day) of ROG, 13.9 lbs/day of NOx, 1.7 lbs/day of PM_{10} and 1.3 lbs/day of $PM_{2.5}$. Construction-generated emissions of NOx and PM_{10} would not exceed Shasta County AQMD's significance thresholds. However, emissions of ROG would exceed Shasta County AQMD's "Level A" significance threshold of 25 lbs/day, primarily associated with evaporative emissions occurring during

the architectural coating application phase. Although construction-generated emissions of PM_{10} would not exceed applicable thresholds, localized concentrations of uncontrolled PM could result in a potential nuisance to nearby receptors. As a result, construction-generated emissions of ROG and PM would be considered to have a potentially significant impact.

Mitigation Measures

Mitigation Measure AQ-1: The proposed project shall implement the following mitigation measures, which include Standard Mitigation Measures recommended by the Shasta County AQMD. Other comparable mitigation measures may be used in lieu of or in conjunction with the measures listed below. Where additional measures are contemplated, they must be reviewed and approved for use by Shasta County AQMD. Where questions arise as to the suitability of any proposed mitigation measures, they shall be referred to the Shasta County AQMD for determination of acceptability:

a. Alternatives to open burning of vegetative material on the project site shall be used by the project applicant unless otherwise deemed infeasible by the Shasta County AQMD. Among suitable alternatives are chipping, mulching, or conversion to biomass fuel.

b. All material excavated, stockpiled, or graded shall be sufficiently watered to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering shall occur at least twice daily with complete site coverage, preferably in the mid-morning and after work is completed each day.

c. All areas (including unpaved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.

d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.

e. All land clearing, grading, earth moving or excavation activities on the project shall be suspended when winds are expected to exceed 20 miles per hour.

f. All inactive portions of the development site shall be seeded and watered until a suitable grass cover is established.

g. Apply approved non-toxic soil stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with Shasta County grading ordinance.

h. All trucks hauling dirt, sand, soil or other loose material shall be covered or shall maintain at least two feet of freeboard (i.e., minimum vertical distance between top of load and trailer) in accordance with the requirements of California Vehicle Code, Section 23114. This provision shall be enforced by local law enforcement agencies.

i. During initial grading, earth moving, or site preparation, the project shall be required to construct a paved (or dust palliative treated) apron, at least 100 feet in length, onto the project site from the adjacent existing paved road(s).

j. Existing paved streets adjacent to the development site shall be swept or washed (recommend water sweeper with reclaimed water) at the end of each day if substantial volumes of soil material have been carried onto adjacent public paved roads from the project site.

k. Wheel washers shall be installed where project vehicles and/or equipment enter and/or exit onto existing paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip.

l. Prior to final occupancy, the applicant shall reestablish ground cover on the construction site through seeding and watering.

m. To reduce emissions of fugitive dust during construction associated with equipment traveling on unpaved surfaces, the paving of road surfaces shall be completed as early in the construction process as possible.

n. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement at the entrances to the site.

o. Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

p. To the extent available, alternatively-fueled or electrified construction equipment shall be used.

In addition to the above Shasta County AQMD-recommended standard mitigation measures, the following additional measures are recommended to further reduce emissions associated with construction activities.

q. Exterior and interior architectural paints used during the construction of the proposed clubhouse and associated structures shall not exceed a VOC content of 50 grams per liter. To the extent available, the use of prefinished construction materials is recommended.

r. Recycle or salvage non-hazardous construction debris. A recycling goal of at least 75% by weight is recommended.

Significance After Mitigation

To reduce potential nuisance impacts, *Mitigation Measure AQ-1,a-p* would require implementation of Shasta County AQMD-recommended mitigation measures for the control of construction-generated emissions of fugitive dust. Mitigation measures would also be required to reduce mobile-source emissions from construction vehicles and equipment (refer to Mitigation Measure AQ-1,n, o and p). *Mitigation Measure AQ-1,q* would require the use of low-VOC content (50 g/L, or less) exterior and interior paints during the building architectural coating phase.

With mitigation, emissions of ROG associated with the architectural coating phase would be reduced to approximately 12.5 lbs/day. Assuming that architectural coating application were to occur concurrent with onsite paving and building construction activities, maximum daily emissions of ROG would be reduced to approximately 15.3 lbs/day. With mitigation, maximum daily emissions of ROG would not exceed Shasta County AQMD's "Level A" significance threshold of 25 lbs/day. With mitigation, this impact would be considered less than significant.

Long-Term Operation

Long-term operation of the proposed project would generate emissions of ozone-precursor pollutants (i.e., ROG and NOx) and PM_{10}. Predicted maximum daily emissions for weekday, Saturday and Sunday operational conditions are summarized in Table 6. As indicated, estimated daily operational emission would not exceed corresponding Shasta County AQMD significance thresholds. This impact would be considered less than significant.

Table 6
Operational Emissions at Buildout without Mitigation

Source	Maximum Daily Emissions (lbs/day)					
	Summer Conditions			Winter Conditions		
	ROG	NO_X	PM_{10}	ROG	NO_X	PM_{10}
Area	0.36	0.00	0.00	0.37	0.00	0.00
Energy Use	0.00	0.03	0.00	0.00	0.03	0.00
Mobile	2.40	1.67	1.73	1.94	2.00	1.73
Maximum Daily Emissions:	*2.76*	*1.71*	*1.73*	*2.31*	*2.03*	*1.73*
AQMD Thresholds (Level A/B):	*25/137*	*25/137*	*80/137*	*25/137*	*25/137*	*80/137*
Exceeds Thresholds?	*No/No*	*No/No*	*No/No*	*No/No*	*No/No*	*No/No*

Operational emissions were calculated using the CalEEMod computer program. Totals may not sum due to rounding. Refer to Appendix A for emissions modeling.

IMPACT AQ-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

The NSVAB is currently designated non-attainment for the state ambient air quality standards (AAQS) for ozone and PM_{10}. As discussed in *Impact AQ-2*, short-term construction-generated emissions of ROG would exceed Shasta County AQMD "Level A" significance threshold and emissions of uncontrolled airborne-particulate matter could result in an increased nuisance to nearby receptors. In addition, uncontrolled increases PM could contribute, on a cumulative basis, to existing non-attainment conditions. As a result, this impact is considered potentially significant, subject to mitigation.

Mitigation Measures

Implement Mitigation Measure AQ-1.

Significance After Mitigation

Proposed mitigation measures would require implementation of Shasta County AQMD-recommended measures for the control of construction-generated emissions. Additional mitigation has also been included to further reduce project-generated emissions of ROG. With mitigation, this impact would be considered less than significant.

IMPACT AQ-4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Implementation of the proposed project would not result in the long-term operation of any stationary emission sources of localized pollutants. However, short-term construction activities may result in temporary increases of TACs and fugitive dust. Short-term increases of pollutants potentially associated with construction activities are discussed, as follows:

Naturally Occurring Asbestos

Naturally-occurring asbestos, which was identified by ARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. However, the project site is not located near areas that are likely to contain ultramafic rock (DOC 2009). It is also important to note that construction of the proposed project would be required to comply with the California Code of Regulations, Title 17, Section

93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM). The ATCM requirements are applicable within Shasta County. Compliance with ATCM requirements would include implementation of measures for the control of airborne emissions generated during construction in the event that asbestos-containing soils were identified during the construction process. For these reasons, potential for exposure to naturally-occurring asbestos would be considered less than significant.

Diesel-Exhaust Emissions

Implementation of the proposed project would result in emissions of diesel-exhaust particulate matter (DPM) during construction associated with the use of off-road diesel equipment for site grading and excavation, paving and other construction activities. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. As such, the calculation of cancer risk associated with exposure to TACs are typically calculated based on a long-term (e.g., 70-year) period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic, would occur over a relatively large area, and would constitute approximately one percent, or less, of the typical 70-year exposure period. As a result, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e., incremental increase in cancer risk of 10 in one million). For these reasons and given the rural location of the proposed project, potential exposure to DPM would be considered less than significant.

Fugitive Dust

As previously discussed, construction of the proposed project would result in the temporary generation of fugitive dust emissions associated with site preparation and grading activities. Emissions of airborne PM are largely dependent on the amount of ground disturbance. Although emissions of PM would not exceed recommended thresholds of significance, uncontrolled activities could result in localized concentrations of PM, which could result in increased nuisance to nearby individuals. As a result, localized increases in airborne PM would be considered a potentially significant impact. With implementation of recommended mitigation measures, this impact would be considered less than significant. Refer to *Impact AQ-2* for additional discussion of short-term air quality impacts and recommended mitigation measures.

IMPACT AQ-5: Would the project create objectionable odors affecting a substantial number of people?

Implementation of the proposed project would not result in long-term emissions of odors. However, construction of the proposed project would involve the use of a variety of gasoline or diesel-powered equipment that would emit exhaust fumes. Exhaust fumes, particularly diesel-exhaust, may be considered objectionable by some people. In addition pavement coatings used during project construction would also emit temporary odors. However, construction-generated emissions would occur intermittently throughout the workday and would dissipate rapidly within increasing distance from the source. As a result, short-term construction activities would not expose a substantial number of people to frequent odorous emissions. For these reasons, potential short-term exposure of sensitive receptors to odorous emissions would be considered less than significant.

GREENHOUSE GASES AND CLIMATE CHANGE

This section describes the existing setting related to climate change, provides a summary of the regulatory framework, and evaluates potential greenhouse gas (GHG) impacts associated with the proposed project.

EXISTING SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the GHGs that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and black carbon. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide.** Carbon dioxide (CO_2) is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2008a).

- **Methane.** Methane (CH_4) is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87% by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2006a).

- **Nitrous Oxide.** Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years (U.S. EPA 2006b).

- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2006c).

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane

(C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F_{14}). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively (U.S. EPA 2006a).

- **Nitrogen Trifluoride.** Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. In 2009, NF_3 was listed by California as a potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).

- **Sulfur Hexafluoride.** Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80% of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (U.S. EPA 2008b).

- **Black Carbon.** Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (ARB 2014).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Table 7 shows the GWP for the GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As indicated, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHG with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

Table 7
Global Warming Potential for Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100-year)
Carbon Dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous Dioxide (N_2O)	298

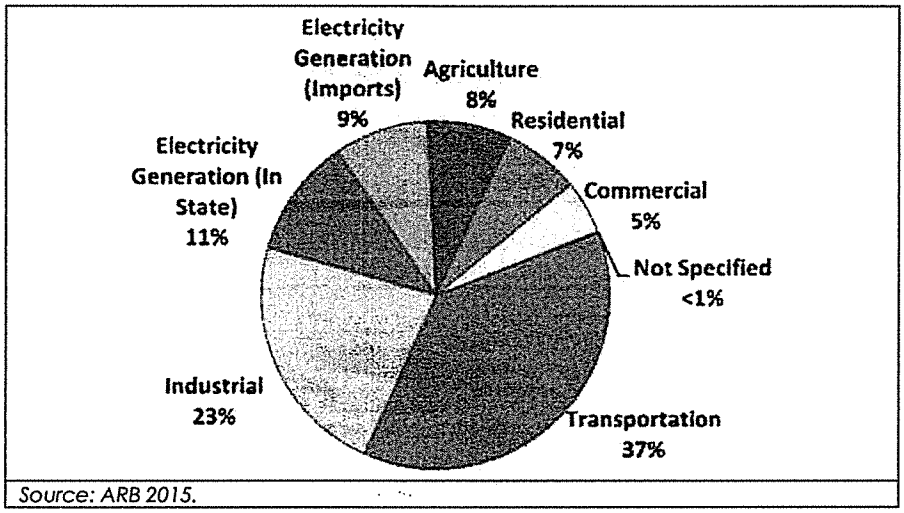
**Based on IPCC GWP values for 100-year time horizon*

Sources of GHG Emissions

On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions (U.S. EPA 2014).

In 2013, GHG emissions within California totaled 459 million metric tons (MMT) of carbon dioxide equivalents (CO_2e). Within California, the transportation sector is the largest contributor, accounting for approximately 37 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23 percent. Electricity generation totaled roughly 20 percent (ARB 2014).

Figure 1
California Greenhouse Gases Inventory



Source: ARB 2015.

Effects of Global Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snow pack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from hydropower. An early exhaustion of the Sierra snowpack, may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry (ARB 2015, CEC 2003).

REGULATORY FRAMEWORK

Federal

International Regulation and the Kyoto Protocol

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the greenhouse gas intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012.

As part of the commitments to the UNFCCC, the US Environmental Protection Agency (U.S. EPA) has developed an inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases. This inventory is periodically updated, with the latest update in 2010 (U.S. EPA 2010a). The U.S. EPA reports that total US emissions rose by 14 percent from 1990 to 2007, while the US gross domestic product increased by 59 percent over the same period (U.S. EPA 2010a). A 2.9 percent decrease in emissions was noted from 2007 to 2008, which is reported to be attributable to climate conditions, reduced use of petroleum products for transportation, and increased use of natural gas over other fuel sources (U.S. EPA 2010a). The inventory notes that the transportation sector emits about 32 percent of CO2 emissions, with 53 percent of those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 21 percent of CO_2 emissions (U.S. EPA 2010a).

As a part of the U.S. EPA's responsibility to develop and update an inventory of US greenhouse gas emissions and sinks, the U.S. EPA compared trends of other various US data. Over the period between 1990 and 2008, GHG emissions grew at an average rate of about 0.7 percent per year. Population growth was slightly higher at 1.1 percent, while energy and fossil fuel consumption grew at 0.9 and 0.8 percent, respectively. Gross domestic product and energy generation grew at much higher rates.

Executive Order 13514

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in Massachusetts v. U.S. EPA, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty

Vehicles, which was published on September 15, 2009. On May 7, 2010 the final Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles.

State

Assembly Bill 1493

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the Clean Air Act, to allow the State to require reduced tailpipe emissions of CO_2. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

In January 2009, President Obama instructed the U.S. EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the U.S. EPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons of CO_2e, or approximately 30 percent from the state's projected 2020 emissions level of 596 $MMTCO_2e$ under a business-as-usual scenario (this is a reduction of 42 $MMTCO_2e$, or almost 10 percent, from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2e$), implementation of the Low Carbon Fuel Standard (15.0 $MMTCO_2e$) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and a renewable portfolio standard for electricity production (21.3 $MMTCO_2e$). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

Key components of the Scoping Plan focus on energy efficiency, conservation, and use of renewable energy. For instance, the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33 percent by year 2020, would result in a reduction of 21.3 $MMTCO_2e$. Sources of renewable energy include, but are not limited to, biomass, wind, solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewables will decrease California's reliance on fossil fuels, thus reducing GHG emissions. The Scoping Plan also recognizes that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The first update of the Scoping Plan was approved by ARB on May 22, 2014, which looked past 2020 to set mid-term goals to reach post 2020 emission-reduction targets.

Executive Order B-30-15

On April 29, 2015, the Governor issued Executive Order B-30-15 establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. All state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to achieve continue reductions in GHG emissions.

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a GHG emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed the ARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. This Executive Order was superseded by statute SB X1-2 in 2011, which obligates all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020, with interim targets of 20 percent by 2013 and 25 percent by 2016.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

Mandatory Reporting of Greenhouse Gas Emissions

Reporting of greenhouse gases by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total greenhouse gas emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions, and are free to buy and sell allowances on the open market. California held its first auction of greenhouse gas allowances on November 14, 2012. California's GHG cap-and-trade system will reduce GHG emissions from regulated entities by approximately 16 percent, or more, by 2020.

Shasta County

Draft Shasta Regional Climate Action Plan

The Draft Shasta Regional Climate Action Plan (RCAP) was released for public review in September 2012, but has not yet been adopted. The RCAP includes various programs, policies and measures intended to achieve GHG-reduction goals in support of the state-wide GHG-reduction targets, as specified in AB 32. The Draft CAP includes an inventory of County-wide GHG emissions, identifies necessary GHG-reduction targets, as well as, GHG-reduction measures to be implemented to achieve the specified emission reduction targets. For development projects, the Draft RCAP measures are intended to reduce emissions primarily associated with energy use, waste generation, transportation, and carbon sequestration.

IMPACT ASSESSMENT

Methodology

Short-term construction and long-term operational emissions were calculated using the CalEEMod computer program. Construction-generated emissions were calculated based on the default assumptions contained in the model for Shasta County and estimated construction schedule information provided by the project proponent. Based on the information provided, grading activities for the proposed project are anticipated to occur over an approximate two month period. No demolition of existing structures or the import/export of soil is not anticipated to be required for this project. Emissions modeling assumptions and results are included in Appendix A of this report.

Operational emissions were quantified based on vehicle trip-generation rates obtained from the traffic analysis prepared for this project and the default modeling parameters identified in the model. The estimated peak-hour trip-generation rates and traffic volumes for the proposed project, as identified in the traffic analysis prepared for this project, are summarized in Table 2. The traffic analysis did not, however, provide estimated average-daily trip-generation rates for the proposed project. To be conservative, the average-daily trip-generation rate was calculated based on the peak-hour trip-generation rates/traffic volumes applied over an estimated 8-hour daily operational period for weekday, Saturday, and Sunday operational conditions. Annual GHG emissions were quantified for project operational conditions assuming a buildout year of 2017. Future years, post year 2017, would be less. Emissions modeling assumptions and results are included in Appendix A of this report.

Significance Criteria

Neither the State of California nor the Shasta County AQMD have identified quantitative thresholds of significance for the evaluation of project-generated GHGs. In addition, it is important to note that neither AB 32, SB 375 nor SB 97 establish a statutory mandate that requires local air pollution control districts to establish GHG significance thresholds for CEQA purposes. However, to date, several air districts have identified GHG significance thresholds. Most recently, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has identified recommended GHG thresholds of significance to be used for the analysis of project-related impacts. For construction and operational activities, the SMAQMD recommends a GHG mass-emissions threshold of 1,100 $MTCO_2e$/year to be applied for the assessment of short-term construction and long-term operational impacts. The SMAQMD's recommended GHG significance threshold is generally consistent with mass-emissions thresholds recommended by other air districts for the evaluation of GHG impacts. For instance, the San Luis Obispo County Air Pollution Control District (SLOAPCD) has identified a recommended GHG significance threshold of 1,150 $MTCO_2e$/year and the Bay Area Air Quality Management District (BAAQMD) has identified a recommended GHG mass-emissions threshold of 1,100 $MTCO_2e$/year.

Unlike criteria air pollutants that primarily affect the local or regional environment within which they are emitted, GHG emissions are evaluated based on potential impacts to the global environment and, hence, are inherently a cumulative impact. For this reason, some air districts have advocated for consideration of more regional GHG emission thresholds that are not necessarily limited to air district boundaries or air basins. For instance, the Ventura County Air Pollution Control District is coordinating with the South Coast Air Quality Management District to identify GHG emission thresholds that would help to streamline CEQA project-level analysis and be consistent with those applied within other areas of Southern California (VCAPCD 2011). Similarly, the Monterey Bay Unified Air Pollution Control District (MBUAPCD) worked with SLOAPCD on a work plan for development of a regional CEQA GHG threshold, which was the basis for the GHG thresholds currently adopted by SLOAPCD. The MBUAPCD currently considers the use of the neighboring SLOAPCD- or BAAQMD-recommended GHG significance thresholds to be adequate for the analysis of CEQA GHG impacts.

For purposes of this analysis, the SMAQMD-recommended mass-emissions threshold of 1,100 $MTCO_2e$/year was relied upon for assessment of short-term construction and long-term operational impacts associated with the proposed project. Project-generated GHG emissions that do not exceed 1,100 $MTCO_2e$/year would not be considered to have a significant impact on the environment and could conflict applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions. This threshold is considered adequate for the analysis of project-level GHG impacts within Shasta County and was approved for use by the Shasta County AQMD (Bell 2015).

Impact Summary

GHG impacts were evaluated based on the environmental checklist questions identified in Appendix G of the *CEQA Guidelines*. GHG impacts are summarized in Table 8.

Table 8
Summary of Project-Related Greenhouse Gas Impacts

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
A) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
B) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Impact Discussions and Mitigation Measures

IMPACT A/B: **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? or, Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

Implementation of the proposed project would result in increased GHG emissions associated with short-term construction and long-operation of the proposed project. Short-term construction and long-operational emissions are discussed in more detail, as follows:

Short-term Construction

Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions associated with construction of the proposed project would be primarily associated with increases of CO_2 from mobile sources. To a lesser extent, other GHG pollutants, such as CH_4 and N_2O would also be generated. Based on the modeling conducted, the proposed project would generate a maximum of approximately 87 $MTCO_2e$/year. Construction-generated GHG emissions would not exceed the significance threshold of 1,100 $MTCO_2e$/year. As a result, short-term construction-generated GHG emissions would be considered to have a less than significant impact.

It is also important to note that the proposed project would be required to incorporate Shasta County AQMD-recommended "Standard Mitigation Measures" for the control of construction-generated emissions (refer to *Impact AQ-2, Mitigation Measure 1*). Included in Mitigation Measure AQ-1 are measures that would reduce emissions associated with the open burning of vegetative material and emissions from diesel-fueled vehicles and equipment. As discussed earlier in this report, the burning of vegetative material and diesel fuels are sources of black carbon, which is considered a GHG. As a result, implementation of Mitigation Measure AQ-1 would result in reductions of short-term GHs emissions.

Long-term Operation

Increases of GHG emissions attributable to the proposed project would consist primarily of CO_2. To a lesser extent, emissions of CH_4 and N_2O would also contribute to overall increases in GHG emissions. Estimated increases of GHG emissions associated with implementation of the proposed project are summarized in Table 9. As depicted, operational emissions would total approximately 206 $MTCO_2e$/year. It is also important to note that the proposed project would result in the removal of approximately 60 acres of grassland, which would result in an overall reduction in carbon sequestration. This reduction in carbon sequestration would be partially offset with the proposed planting of approximately 147 additional trees. In total the proposed project would result in an overall net reduction in carbon sequestration of approximately 150 $MTCO_2e$, which would equate to roughly 5.0 $MTCO_2e$/year when amortized over an estimated 30-year life of the project. With the inclusion of amortized changes in onsite carbon sequestration, project-generated GHG emissions would total approximately 210.7 $MTCO_2e$/year. Estimated operational emissions would not exceed the significance threshold of 1,100 $MTCO_2e$/year.

It is also important to note that the proposed project would be subject to current 2013 Title 24 standards, which are approximately 30% more energy efficient than previous 2008 Title 24 standards. For nonresidential construction, the 2013 Title 24 standards include requirements pertaining to the installation of energy-efficient building components (e.g., windows, sensors, controls, exterior/interior lighting) building mechanical systems and process equipment (e.g., heating, ventilation, and air conditioning systems, water heating). The 2013 standards also address requirements pertaining to the installation of solar-ready roofs and cool-roof technologies, as well as, measures to improve water efficiency and conservation. The project would also include the planting of approximately 150 trees. Mitigation measure AQ-1,r would also require the recycling of non-hazardous construction debris.

Table 9
Long-Term Operational GHG Emissions without Mitigation

Source	$MTCO_2e$/Year[1]
Area Sources	Negligible
Energy Use	20.0
Motor Vehicles[2]	170.2
Waste Generation	14.5
Water Use & Conveyance	1.0
Changes in Onsite Carbon Sequestration[3]	5.0
Total:	210.7
Significance Threshold:	1,100
Exceeds Significance Threshold?:	No

1. *Assumes year 2017 buildout conditions. Emissions during subsequent years are anticipated to be less.*
2. *Annual emissions are conservatively based on the peak-hour trip-generation rates for weekday, Saturday, and Sunday operational conditions.*
3. *Based on a net change in overall carbon sequestration of -150.7 $MTCO_2e$ amortized over a 30-year project life.*

Refer to Appendix A for emissions modeling assumptions and results.

Because GHG emissions would not exceed applicable thresholds, operational GHG emissions would not be considered to have a significant impact on the environment, nor result in increased GHG emissions that would conflict with the implementation of applicable GHG-reduction plans. Although the Draft RCAP has not yet been adopted, the proposed project would be considered consistent with GHG-reduction measures currently identified in the Draft RCAP (refer to Table 10). The project would also comply with current regulatory requirements intended to support state-wide efforts to reduce GHG emissions, including 2013 Title 24 building standards, which are roughly 30 percent more energy efficient than the previous building standards. This impact would be considered *less than significant*.

Table 10
Project Consistency with Draft Regional Climate Action Plan

Action/Progress Indicator	Project Consistency
Measure BE-2: New Construction *Actions*: Develop a priority permitting program for new residential projects that demonstrate 15% higher efficiency than Title 24 requirements *Target Year 2020 Progress Indicator*: 50% of new residential (i.e., single-family and multi-family) and non-residential construction achieves 25% reduction in energy use above 2008 Title-24 *Target Year 2035 Progress Indicator*: 75% of new residential (i.e., single-family and multi-family) and non-residential construction achieves 25% reduction in energy use above 2008 Title-24	**Consistent.** The project would be subject to current 2013 Title 24 standards, which are approximately 30% more energy efficient than previous 2008 Title 24 standards. For nonresidential construction, the 2013 Title 24 standards include requirements pertaining to the installation of energy-efficient building components (e.g., windows, sensors, controls, exterior/interior lighting), as well as, energy-efficiency improvements associated with building mechanical systems and process equipment (e.g., heating, ventilation, and air conditioning systems, water heating). The 2013 standards also include requirements for the

Table 10
Project Consistency with Draft Regional Climate Action Plan

Action/Progress Indicator	Project Consistency
	installation of solar-ready roofs and cool-roof technologies.
Measure BE-3: Commercial Indoor Lighting *Actions*: Discuss applicable rebates and incentive programs with building developers during the building permit phase. Provided targeted outreach to building owners/managers of large non-residential buildings *Target Year 2020 Progress Indicator*:10% of non-residential buildings reduce indoor lighting load by 40% *Target Year 2035 Progress Indicator*: 22.5% of non-residential buildings reduce indoor lighting load by 40%	**Consistent.** The project would comply with 2013 Title 24 requirements to provide increased energy efficiency associated with interior/ exterior lighting. Refer to project consistency discussion for Measure BE-2, above.
Measure BE-4: Energy-Efficient Appliances *Actions*: Collaborate with PG&E to promote existing financial incentives programs to encourage voluntary replacement of inefficient appliances with new ENERGY STAR appliances. Advertise energy-efficient appliance rebates at community events. *Target Year 2020 Progress Indicator*: New homes install ENERGY STAR appliances at the following rates: 40% refrigerators, 40% clothes washers, and 70% dishwashers *Target Year 2035 Progress Indicator*: New homes install ENERGY STAR appliances at the following rates: 90% refrigerators, 90% clothes washers, and 90% dishwashers	**Consistent.** The project is a non-residential project. However, the project would include the installation of energy-efficient building components and process equipment, per 2013 Title 24 requirements. Refer to project consistency discussion for Measure BE-2, above.
Measure BE-5: Smart Grid Integration *Action*: Develop an outreach program with PG&E that informs property owners and businesses about smart grid and smart appliance technologies, as well as energy conservation opportunities using smart meter technology. *Target Year 2020 Progress Indicator*:30% of new residential and commercial customers adopt smart-grid technology *Target Year 2035 Progress Indicator*: 67.5% of new residential and commercial customers adopt smart-grid technology	**Consistent.** The project will be designed for the installation of solar PV. PG&E installs "Smart Meter" technology for facilities that utilize renewable energy (e.g., solar photovoltaic). Refer to project consistency discussion for Measure BE-2, above.
Measure BE-6: Solar Water Heaters *Actions*: Work with PG&E and California Solar Initiative to develop an outreach program to maximize installation of solar hot water systems in residential and commercial buildings. Encourage the use of California Solar Initiative, US EPA, PG&E, and other rebates for solar hot water heaters. Streamline permitting (e.g., building, electric, plumbing) for solar hot water system installation. Reduce or waive fees associated with installation of solar water heaters. *Target Year 2020 Progress Indicator*: 5% each of single-family residential buildings, multi-family residential buildings, and non-residential buildings install a solar hot water system *Target Year 2035 Progress Indicator*: 11.3% each of single-family residential buildings, multi-family residential buildings, and non-residential buildings install a solar hot water system	**Consistent.** The project would comply with 2013 Title 24 requirements to provide increased energy efficiency associated with water heating, which may include solar water heating. Refer to project consistency discussion for Measure BE-2, above.
Measure BE-7: Solar Photovoltaic Systems *Actions*: Remove regulatory barriers to installation of PV systems. Provide streamlined permitting and reduce permitting fees related to installation of PV systems. Develop public outreach	**Consistent.** Refer to project consistency discussion for Measure BE-2, above.

Table 10
Project Consistency with Draft Regional Climate Action Plan

Action/Progress Indicator	Project Consistency
campaign that explains benefits of PV systems, highlights available rebates/incentives, explains PPAs and identifies solar service providers in the area. *Target Year 2020 Progress Indicator*: 10% of single-family residential units install a rooftop PV system. County government installs 6.5 MW of solar power. *Target Year 2035 Progress Indicator*: 22.5% of single-family residential units install a rooftop PV system. County government installs 15 MW of solar power.	
Measure W-1: Residential Fixture and Fittings Retrofit *Actions*: Develop informational materials that describe benefits of installing high-efficiency water fixtures/appliances. Identify water efficiency rebates or incentives applicable to unincorporated Shasta County residents. *Target Year 2020 Progress Indicator*:5% of residential households install high-efficiency toilets, showerheads, faucets, dishwashers, and clothes washers *Target Year 2035 Progress Indicator*: 11.3% of residential households install high-efficiency toilets, showerheads, faucets, dishwashers, and clothes washers	**Consistent.** The project is a non-residential project. However, the project would include the installation of building components that would increase water efficiency and conservation, per 2013 Title 24 requirements, including the use of low-flow water fixtures.
Measure SW-1: Lumber Waste Diversion Ordinance *Action*: Adopt 75% lumber diversion ordinance applicable to residential and commercial construction and renovation projects *Target Year 2020 Progress Indicator*:100% of residential and commercial projects participate in 75% lumber waste diversion *Target Year 2035 Progress Indicator*: 100% of residential and commercial projects participate in 75% lumber waste diversion	**Consistent.** Mitigation measure AQ-1,r. would require the recycling of non-hazardous construction debris with a target recycling rate of 75 percent.
Measure GI-1: Urban Forest *Action*: Work with PG&E to advertise the benefits of planting shade trees around buildings and parking lots *Target Year 2020 Progress Indicator*: 400 shade trees are planted (region wide). *Target Year 2035 Progress Indicator*: 900 shade trees are planted (region wide).	**Consistent.** The project would include the planting of roughly 150 trees.
The RCAP has not yet been adopted was released for public review in September 2012, but has not yet been adopted. This table reflects action items most applicable to the proposed project.	

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APPENDIX A

EMISSIONS MODELING

SUMMARY OF EMISSIONS MODELING ASSUMPTIONS

Total Building Floor Area: 5,595 sq.ft. (0.3 ac)
Paved Surface Area: 7.5 ksf
Trees Planted: 147
Construction Year: 2016
Construction Phasing: Model Defaults; Grading Increased to 2 months (40 days) per project applicant to account for increased grading for construction of the firing lanes.
Construction Equipment: Unknown at this time. Based on model defaults for Shasta County
Construction Vehicle Trips: Unknown at this time. Based on model defaults for Shasta County
Energy Intensity Factors Adjustment for Renewable Portfolio Standards Included.
Vehicle Fleet Mix Adjustment: 96% LDA/T, 4% MDV, RV & OBUS. Based on data obtained from similar uses (AMBIENT 2016, Omni Means 2016).
Operational Trip-Generation Rates: Weekdays: 42.9/ksf; Saturdays: 85.8/ksf; Sundays: 42.9/ksf
Construction Architectural Coating. Interior/Exterior Paint VOC Content Unmitigated: 250 g/L ; Mitigated: 50 g/L

SUMMARY OF CONSTRUCTION-GENERATED EMISSIONS

	DAILY EMISSIONS - UNCONTROLLED					
	ROG	NOX	CO	SO2	PM10	PM2.5
SITE PREPARATION						
ONSITE	1.40	13.60	7.30	0.01	1.40	0.80
OFFSITE	0.04	0.05	0.50	0.00	0.06	0.02
TOTAL	**1.44**	**13.65**	**7.80**	**0.01**	**1.46**	**0.82**
GRADING						
ONSITE	1.30	11.20	8.70	0.01	1.60	1.20
OFFSITE	0.07	0.10	1.00	0.00	0.13	0.04
TOTAL	**1.37**	**11.30**	**9.70**	**0.01**	**1.73**	**1.24**
BUILDING						
ONSITE	1.40	13.70	8.20	0.01	0.90	0.90
OFFSITE	0.07	0.24	0.80	0.00	0.09	0.03
TOTAL	**1.47**	**13.94**	**9.00**	**0.01**	**0.99**	**0.93**
ARCH COATING						
ONSITE	61.10	2.40	1.90	0.00	0.20	0.20
OFFSITE	0.01	0.01	0.10	0.00	0.01	0.00
TOTAL	**61.11**	**2.41**	**2.00**	**0.00**	**0.21**	**0.20**
PAVING						
ONSITE	1.20	10.60	7.30	0.01	0.70	0.60
OFFSITE	0.13	0.18	1.80	0.00	0.20	0.06
TOTAL	**1.33**	**10.78**	**9.10**	**0.01**	**0.90**	**0.66**

**Based on the highest estimated daily emissions for summer or winter conditions.*

MITIGATED ARCHITECTURAL COATING EMISSIONS

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	12.1255															
Off-Road	0.3555															
Total	12.5080															

Operational Emissions at Buildout without Mitigation

Source	Maximum Daily Emissions (lbs/day)					
	Summer Conditions			Winter Conditions		
	ROG	NO_X	PM_{10}	ROG	NO_X	PM_{10}
Area	0.36	0.00	0.00	0.37	0.00	0.00
Energy Use	0.00	0.03	0.00	0.00	0.03	0.00
Mobile	2.40	1.67	1.73	1.94	2.00	1.73
Maximum Daily Emissions:	*2.76*	*1.71*	*1.73*	*2.31*	*2.03*	*1.73*

Operational emissions were calculated using the CalEEMod computer program. Totals may not sum due to rounding. Refer to Appendix A for emissions modeling.

Long-Term Operational GHG Emissions without Mitigation

Source	$MTCO_2e$/Year[1]
Area Sources	0.00
Energy Use	20.0
Motor Vehicles[2]	170.2
Waste Generation	14.5
Water Use & Conveyance	1.0
Changes in Onsite Carbon Sequestration[3]	5.0

4. *Assumes year 2017 buildout conditions. Emissions during subsequent years are anticipated to be less.*
5. *Annual emissions are conservatively based on the peak-hour trip-generation rates for weekday, Saturday, and Sunday operational conditions.*
6. *Based on a net change in overall carbon sequestration of -150.7 $MTCO_2e$ amortized over a 30-year project life.*

Refer to Appendix A for emissions modeling assumptions and results.

High Plains Shooting Sports Complex

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.50	1000sqft	0.17	7,500.00	0
Racquet Club	5.59	1000sqft	0.13	5,595.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	546.6	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy use intensity factors include RPS adjustment.

Land Use - Includes 5ksf main clubhouse and 595sf law enforcement clubhouse, 7.5ksf paved surface.

Construction Phase - Const requirements based on model defaults. Grading increased to an estimated 2 months (40 days) based on project information. All material balanced onsite.

Vehicle Trips - Conservatively based on pkhr trip gen rates applied over an 8-hr period. (42.9/ksf weekdays/Sundays; 85.8/ksf Saturdays). Trip lengths based on model defaults for Shasta County.

Vechicle Emission Factors - Project site is not serviced by public transit. Fleet mix based on traffic surveys conducted at San Luis Obispo's Sportsman Association's range Sat., Feb 6, 2016 (96%LDV; 4%MDV&OBUS)

Vechicle Emission Factors - .

Vechicle Emission Factors - .

Energy Use - .

Land Use Change - Estimated 60 acres grassland removed.

Sequestration - Estimated 147 trees planted.

Construction Off-road Equipment Mitigation - Watering CE 61% exposed area, 50% unpaved roads; 15 mph speed limit for onroad vehicles traveling on unpaved surfaces. Offroad equipment T3.

Area Mitigation - Includes use of low VOC paint (50 g/L max)

Energy Mitigation - Compliance with current T24 30% more efficient than previous standards (CEC 2015); 50% electrical demand provided by onsite renewable sources.

Water Mitigation - Includes installation of low-flow fixtures, water efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	2.00	40.00
tblLandUse	LandUseSquareFeet	5,590.00	5,595.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	546.6
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSequestration	NumberOfNewTrees	0.00	147.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	LDA	0.37	0.32
tblVehicleEF	LDA	0.37	0.32

tblVehicleEF	LDA	0.37	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5900e-003	0.01
tblVehicleEF	OBUS	1.5900e-003	0.01
tblVehicleEF	OBUS	1.5900e-003	0.01

tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleTrips	ST_TR	20.87	85.80
tblVehicleTrips	SU_TR	26.73	42.90
tblVehicleTrips	WD_TR	32.93	42.90

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	0.2565	0.9632	0.6737	9.5000e-004	0.0226	0.0658	0.0884	0.0103	0.0612	0.0714	0.0000	86.8373	86.8373	0.0217	0.0000	87.2935
Total	**0.2565**	**0.9632**	**0.6737**	**9.5000e-004**	**0.0226**	**0.0658**	**0.0884**	**0.0103**	**0.0612**	**0.0714**	**0.0000**	**86.8373**	**86.8373**	**0.0217**	**0.0000**	**87.2935**

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	0.1768	0.4559	0.6430	9.5000e-004	0.0132	0.0286	0.0418	5.1800e-003	0.0285	0.0337	0.0000	86.8372	86.8372	0.0217	0.0000	87.2934
Total	**0.1768**	**0.4559**	**0.6430**	**9.5000e-004**	**0.0132**	**0.0286**	**0.0418**	**5.1800e-003**	**0.0285**	**0.0337**	**0.0000**	**86.8372**	**86.8372**	**0.0217**	**0.0000**	**87.2934**

	ROG	NOx	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	**31.08**	**52.67**	**4.56**	**0.00**	**41.41**	**56.63**	**52.73**	**49.46**	**53.36**	**52.78**	**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	0.0663	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Energy	6.6000e-004	5.9700e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	19.8971	19.8971	7.4000e-004	2.4000e-004	19.9875
Mobile	0.1956	0.1907	1.4929	2.3200e-003	0.1685	2.3500e-003	0.1708	0.0449	2.1400e-003	0.0470	0.0000	169.9471	169.9471	0.0100	0.0000	170.1574
Waste						0.0000	0.0000		0.0000	0.0000	6.4673	0.0000	6.4673	0.3822	0.0000	14.4936
Water						0.0000	0.0000		0.0000	0.0000	0.1049	0.6194	0.7243	0.0108	2.6000e-004	1.0317
Total	**0.2626**	**0.1966**	**1.4980**	**2.3600e-003**	**0.1685**	**2.8000e-003**	**0.1713**	**0.0449**	**2.5900e-003**	**0.0475**	**6.5722**	**190.4639**	**197.0360**	**0.4038**	**5.0000e-004**	**205.6706**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0542	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Energy	4.9000e-004	4.4900e-003	3.7700e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	11.0946	11.0946	3.8000e-004	1.5000e-004	11.1479
Mobile	0.1956	0.1907	1.4929	2.3200e-003	0.1685	2.3500e-003	0.1708	0.0449	2.1400e-003	0.0470	0.0000	169.9471	169.9471	0.0100	0.0000	170.1574
Waste						0.0000	0.0000		0.0000	0.0000	6.4673	0.0000	6.4673	0.3822	0.0000	14.4936
Water						0.0000	0.0000		0.0000	0.0000	0.0839	0.5199	0.6039	8.6400e-003	2.1000e-004	0.8498
Total	**0.2503**	**0.1952**	**1.4968**	**2.3500e-003**	**0.1685**	**2.6900e-003**	**0.1711**	**0.0449**	**2.4800e-003**	**0.0474**	**6.5512**	**181.5619**	**188.1131**	**0.4013**	**3.6000e-004**	**196.6490**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	4.69	0.75	0.08	0.42	0.00	3.93	0.06	0.00	4.25	0.23	0.32	4.67	4.53	0.62	28.00	4.39

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	107.8980
Vegetation Land Change	-258.6000
Total	**-150.7020**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2016	6/1/2016	5	1	
2	Grading	Grading	6/2/2016	7/27/2016	5	40	
3	Building Construction	Building Construction	7/28/2016	12/14/2016	5	100	
4	Paving	Paving	12/15/2016	12/21/2016	5	5	
5	Architectural Coating	Architectural Coating	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,643; Non-Residential Outdoor: 6,548 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.8200e-003	3.6700e-003	0.0000		4.2000e-004	4.2000e-004		3.8000e-004	3.8000e-004	0.0000	0.4414	0.4414	1.3000e-004	0.0000	0.4442
Total	**6.8000e-004**	**6.8200e-003**	**3.6700e-003**	**0.0000**	**2.7000e-004**	**4.2000e-004**	**6.9000e-004**	**3.0000e-005**	**3.8000e-004**	**4.1000e-004**	**0.0000**	**0.4414**	**0.4414**	**1.3000e-004**	**0.0000**	**0.4442**

3.2 Site Preparation - 2016

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	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0282	0.0282	0.0000	0.0000	0.0283
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0282**	**0.0282**	**0.0000**	**0.0000**	**0.0283**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1000e-004	2.3300e-003	3.5000e-003	0.0000		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.4414	0.4414	1.3000e-004	0.0000	0.4442
Total	**1.1000e-004**	**2.3300e-003**	**3.5000e-003**	**0.0000**	**1.0000e-004**	**1.3000e-004**	**2.3000e-004**	**1.0000e-005**	**1.3000e-004**	**1.4000e-004**	**0.0000**	**0.4414**	**0.4414**	**1.3000e-004**	**0.0000**	**0.4442**

3.2 Site Preparation - 2016

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	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0282	0.0282	0.0000	0.0000	0.0283
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0282**	**0.0282**	**0.0000**	**0.0000**	**0.0283**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0151	0.0000	0.0151	8.2800e-003	0.0000	8.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0262	0.2248	0.1741	2.4000e-004		0.0161	0.0161		0.0154	0.0154	0.0000	21.6565	21.6565	4.3300e-003	0.0000	21.7474
Total	**0.0262**	**0.2248**	**0.1741**	**2.4000e-004**	**0.0151**	**0.0161**	**0.0311**	**8.2800e-003**	**0.0154**	**0.0236**	**0.0000**	**21.6565**	**21.6565**	**4.3300e-003**	**0.0000**	**21.7474**

3.3 Grading - 2016

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	1.2300e-003	1.7900e-003	0.0174	3.0000e-005	2.4300e-003	2.0000e-005	2.4500e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2578	2.2578	1.4000e-004	0.0000	2.2606
Total	**1.2300e-003**	**1.7900e-003**	**0.0174**	**3.0000e-005**	**2.4300e-003**	**2.0000e-005**	**2.4500e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2578**	**2.2578**	**1.4000e-004**	**0.0000**	**2.2606**

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					5.8700e-003	0.0000	5.8700e-003	3.2300e-003	0.0000	3.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3200e-003	0.1196	0.1591	2.4000e-004		8.0500e-003	8.0500e-003		8.0500e-003	8.0500e-003	0.0000	21.6565	21.6565	4.3300e-003	0.0000	21.7474
Total	**5.3200e-003**	**0.1196**	**0.1591**	**2.4000e-004**	**5.8700e-003**	**8.0500e-003**	**0.0139**	**3.2300e-003**	**8.0500e-003**	**0.0113**	**0.0000**	**21.6565**	**21.6565**	**4.3300e-003**	**0.0000**	**21.7474**

3.3 Grading - 2016

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	1.2300e-003	1.7900e-003	0.0174	3.0000e-005	2.4300e-003	2.0000e-005	2.4500e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.2578	2.2578	1.4000e-004	0.0000	2.2606
Total	**1.2300e-003**	**1.7900e-003**	**0.0174**	**3.0000e-005**	**2.4300e-003**	**2.0000e-005**	**2.4500e-003**	**6.5000e-004**	**2.0000e-005**	**6.7000e-004**	**0.0000**	**2.2578**	**2.2578**	**1.4000e-004**	**0.0000**	**2.2606**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0691	0.6853	0.4106	5.7000e-004		0.0470	0.0470		0.0432	0.0432	0.0000	53.4584	53.4584	0.0161	0.0000	53.7970
Total	**0.0691**	**0.6853**	**0.4106**	**5.7000e-004**		**0.0470**	**0.0470**		**0.0432**	**0.0432**	**0.0000**	**53.4584**	**53.4584**	**0.0161**	**0.0000**	**53.7970**

3.4 Building Construction - 2016

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	1.3800e-003	8.9100e-003	0.0145	2.0000e-005	5.8000e-004	1.4000e-004	7.2000e-004	1.7000e-004	1.3000e-004	3.0000e-004	0.0000	1.9764	1.9764	2.0000e-005	0.0000	1.9768
Worker	1.8400e-003	2.6800e-003	0.0261	5.0000e-005	3.6400e-003	3.0000e-005	3.6800e-003	9.7000e-004	3.0000e-005	1.0000e-003	0.0000	3.3866	3.3866	2.0000e-004	0.0000	3.3909
Total	**3.2200e-003**	**0.0116**	**0.0406**	**7.0000e-005**	**4.2200e-003**	**1.7000e-004**	**4.4000e-003**	**1.1400e-003**	**1.6000e-004**	**1.3000e-003**	**0.0000**	**5.3631**	**5.3631**	**2.2000e-004**	**0.0000**	**5.3676**

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	0.0139	0.3050	0.3965	5.7000e-004		0.0192	0.0192		0.0192	0.0192	0.0000	53.4583	53.4583	0.0161	0.0000	53.7969
Total	**0.0139**	**0.3050**	**0.3965**	**5.7000e-004**		**0.0192**	**0.0192**		**0.0192**	**0.0192**	**0.0000**	**53.4583**	**53.4583**	**0.0161**	**0.0000**	**53.7969**

3.4 Building Construction - 2016

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	1.3800e-003	8.9100e-003	0.0145	2.0000e-005	5.8000e-004	1.4000e-004	7.2000e-004	1.7000e-004	1.3000e-004	3.0000e-004	0.0000	1.9764	1.9764	2.0000e-005	0.0000	1.9768
Worker	1.8400e-003	2.6800e-003	0.0261	5.0000e-005	3.6400e-003	3.0000e-005	3.6800e-003	9.7000e-004	3.0000e-005	1.0000e-003	0.0000	3.3866	3.3866	2.0000e-004	0.0000	3.3909
Total	**3.2200e-003**	**0.0116**	**0.0406**	**7.0000e-005**	**4.2200e-003**	**1.7000e-004**	**4.4000e-003**	**1.1400e-003**	**1.6000e-004**	**1.3000e-003**	**0.0000**	**5.3631**	**5.3631**	**2.2000e-004**	**0.0000**	**5.3676**

3.5 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	2.8000e-003	0.0266	0.0182	3.0000e-005		1.6500e-003	1.6500e-003		1.5300e-003	1.5300e-003	0.0000	2.4575	2.4575	6.7000e-004	0.0000	2.4717
Paving	2.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0200e-003**	**0.0266**	**0.0182**	**3.0000e-005**		**1.6500e-003**	**1.6500e-003**		**1.5300e-003**	**1.5300e-003**	**0.0000**	**2.4575**	**2.4575**	**6.7000e-004**	**0.0000**	**2.4717**

3.5 Paving - 2016

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	2.8000e-004	4.0000e-004	3.9100e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5080	0.5080	3.0000e-005	0.0000	0.5086
Total	**2.8000e-004**	**4.0000e-004**	**3.9100e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5080**	**0.5080**	**3.0000e-005**	**0.0000**	**0.5086**

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	5.5000e-004	0.0117	0.0170	3.0000e-005		7.2000e-004	7.2000e-004		7.2000e-004	7.2000e-004	0.0000	2.4575	2.4575	6.7000e-004	0.0000	2.4717
Paving	2.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.7000e-004**	**0.0117**	**0.0170**	**3.0000e-005**		**7.2000e-004**	**7.2000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**2.4575**	**2.4575**	**6.7000e-004**	**0.0000**	**2.4717**

3.5 Paving - 2016

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	2.8000e-004	4.0000e-004	3.9100e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5080	0.5080	3.0000e-005	0.0000	0.5086
Total	**2.8000e-004**	**4.0000e-004**	**3.9100e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5080**	**0.5080**	**3.0000e-005**	**0.0000**	**0.5086**

3.6 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	0.1517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-004	5.9300e-003	4.7100e-003	1.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6399
Total	**0.1527**	**5.9300e-003**	**4.7100e-003**	**1.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6399**

3.6 Architectural Coating - 2016

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	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0282	0.0282	0.0000	0.0000	0.0283
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0282**	**0.0282**	**0.0000**	**0.0000**	**0.0283**

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	0.1517					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	3.3900e-003	4.5800e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6399
Total	**0.1519**	**3.3900e-003**	**4.5800e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6399**

3.6 Architectural Coating - 2016

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	2.0000e-005	2.0000e-005	2.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0282	0.0282	0.0000	0.0000	0.0283
Total	**2.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0282**	**0.0282**	**0.0000**	**0.0000**	**0.0283**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1956	0.1907	1.4929	2.3200e-003	0.1685	2.3500e-003	0.1708	0.0449	2.1400e-003	0.0470	0.0000	169.9471	169.9471	0.0100	0.0000	170.1574
Unmitigated	0.1956	0.1907	1.4929	2.3200e-003	0.1685	2.3500e-003	0.1708	0.0449	2.1400e-003	0.0470	0.0000	169.9471	169.9471	0.0100	0.0000	170.1574

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Racquet Club	239.81	479.62	239.81	464,858	464,858
Total	239.81	479.62	239.81	464,858	464,858

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
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Racquet Club	14.70	6.60	6.60	11.50	69.50	19.00	52	39	9

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.320000	0.320000	0.320000	0.010000	0.000000	0.000000	0.000000	0.000000	0.010000	0.000000	0.000000	0.000000	0.020000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.2028	6.2028	2.8000e-004	6.0000e-005	6.2264
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13.4002	13.4002	6.1000e-004	1.2000e-004	13.4511
NaturalGas Mitigated	4.9000e-004	4.4900e-003	3.7700e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.8918	4.8918	9.0000e-005	9.0000e-005	4.9216
NaturalGas Unmitigated	6.6000e-004	5.9700e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4969	6.4969	1.2000e-004	1.2000e-004	6.5364

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
Racquet Club	121747	6.6000e-004	5.9700e-003	5.0100e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4969	6.4969	1.2000e-004	1.2000e-004	6.5364
Total		**6.6000e-004**	**5.9700e-003**	**5.0100e-003**	**4.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**6.4969**	**6.4969**	**1.2000e-004**	**1.2000e-004**	**6.5364**

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 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
Racquet Club	91668.5	4.9000e-004	4.4900e-003	3.7700e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.8918	4.8918	9.0000e-005	9.0000e-005	4.9216
Total		**4.9000e-004**	**4.4900e-003**	**3.7700e-003**	**3.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**	**0.0000**	**4.8918**	**4.8918**	**9.0000e-005**	**9.0000e-005**	**4.9216**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Racquet Club	54047.7	13.4002	6.1000e-004	1.2000e-004	13.4511
Total		**13.4002**	**6.1000e-004**	**1.2000e-004**	**13.4511**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Racquet Club	25018	6.2028	2.8000e-004	6.0000e-005	6.2264
Total		**6.2028**	**2.8000e-004**	**6.0000e-005**	**6.2264**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

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	0.0542	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Unmitigated	0.0663	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0152					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0663**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-004**	**2.3000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0511					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0542**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-004**	**2.3000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.6039	8.6400e-003	2.1000e-004	0.8498
Unmitigated	0.7243	0.0108	2.6000e-004	1.0317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Racquet Club	0.33061 / 0.202632	0.7243	0.0108	2.6000e-004	1.0317
Total		**0.7243**	**0.0108**	**2.6000e-004**	**1.0317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Racquet Club	0.264488 / 0.190271	0.6039	8.6400e-003	2.1000e-004	0.8498
Total		**0.6039**	**8.6400e-003**	**2.1000e-004**	**0.8498**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.4673	0.3822	0.0000	14.4936
Unmitigated	6.4673	0.3822	0.0000	14.4936

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Racquet Club	31.86	6.4673	0.3822	0.0000	14.4936
Total		**6.4673**	**0.3822**	**0.0000**	**14.4936**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Racquet Club	31.86	6.4673	0.3822	0.0000	14.4936
Total		**6.4673**	**0.3822**	**0.0000**	**14.4936**

9.0 Operational Offroad

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

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-150.7020	0.0000	0.0000	-150.7020

10.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	60 / 0	-258.6000	0.0000	0.0000	-258.6000
Total		**-258.6000**	**0.0000**	**0.0000**	**-258.6000**

10.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	147	107.8980	0.0000	0.0000	107.8980
Total		**107.8980**	**0.0000**	**0.0000**	**107.8980**

High Plains Shooting Sports Complex

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.50	1000sqft	0.17	7,500.00	0
Racquet Club	5.59	1000sqft	0.13	5,595.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	546.6	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy use intensity factors include RPS adjustment.

Land Use - Includes 5ksf main clubhouse and 595sf law enforcement clubhouse, 7.5ksf paved surface.

Construction Phase - Const requirements based on model defaults. Grading increased to an estimated 2 months (40 days) based on project information. All material balanced onsite.

Vehicle Trips - Conservatively based on pkhr trip gen rates applied over an 8-hr period. (42.9/ksf weekdays/Sundays; 85.8/ksf Saturdays). Trip lengths based on model defaults for Shasta County.

Vechicle Emission Factors - Project site is not serviced by public transit. Fleet mix based on traffic surveys conducted at San Luis Obispo's Sportsman Association's range Sat., Feb 6, 2016 (96%LDV; 4%MDV&OBUS)

Vechicle Emission Factors - .

Vechicle Emission Factors - .

Energy Use - .

Land Use Change - Estimated 60 acres grassland removed.

Sequestration - Estimated 147 trees planted.

Construction Off-road Equipment Mitigation - Watering CE 61% exposed area, 50% unpaved roads; 15 mph speed limit for onroad vehicles traveling on unpaved surfaces. Offroad equipment T3.

Area Mitigation - Includes use of low VOC paint (50 g/L max)

Energy Mitigation - Compliance with current T24 30% more efficient than previous standards (CEC 2015); 50% electrical demand provided by onsite renewable sources.

Water Mitigation - Includes installation of low-flow fixtures, water efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	2.00	40.00
tblLandUse	LandUseSquareFeet	5,590.00	5,595.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	546.6
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSequestration	NumberOfNewTrees	0.00	147.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	LDA	0.37	0.32
tblVehicleEF	LDA	0.37	0.32

tblVehicleEF	LDA	0.37	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5900e-003	0.01
tblVehicleEF	OBUS	1.5900e-003	0.01
tblVehicleEF	OBUS	1.5900e-003	0.01

tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleTrips	ST_TR	20.87	85.80
tblVehicleTrips	SU_TR	26.73	42.90
tblVehicleTrips	WD_TR	32.93	42.90

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	61.0734	13.9243	9.6857	0.0140	0.8805	0.9433	1.6855	0.4477	0.8678	1.2160	0.0000	1,327.1703	1,327.1703	0.3603	0.0000	1,334.7368
Total	**61.0734**	**13.9243**	**9.6857**	**0.0140**	**0.8805**	**0.9433**	**1.6855**	**0.4477**	**0.8678**	**1.2160**	**0.0000**	**1,327.1703**	**1,327.1703**	**0.3603**	**0.0000**	**1,334.7368**

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	60.7644	6.3184	8.9373	0.0140	0.4213	0.4034	0.8247	0.1953	0.4033	0.5985	0.0000	1,327.1703	1,327.1703	0.3603	0.0000	1,334.7368
Total	**60.7644**	**6.3184**	**8.9373**	**0.0140**	**0.4213**	**0.4034**	**0.8247**	**0.1953**	**0.4033**	**0.5985**	**0.0000**	**1,327.1703**	**1,327.1703**	**0.3603**	**0.0000**	**1,334.7368**

	ROG	NOx	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	**0.51**	**54.62**	**7.73**	**0.00**	**52.15**	**57.23**	**51.07**	**56.38**	**53.53**	**50.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3635	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Energy	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2416	39.2416	7.5000e-004	7.2000e-004	39.4805
Mobile	2.3941	1.6723	14.8819	0.0238	1.7027	0.0226	1.7253	0.4521	0.0206	0.4727		1,921.6315	1,921.6315	0.1063		1,923.8631
Total	**2.7613**	**1.7050**	**14.9107**	**0.0240**	**1.7027**	**0.0251**	**1.7278**	**0.4521**	**0.0231**	**0.4752**		**1,960.8760**	**1,960.8760**	**0.1070**	**7.2000e-004**	**1,963.3466**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2970	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Energy	2.7100e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.5467	29.5467	5.7000e-004	5.4000e-004	29.7265
Mobile	2.3941	1.6723	14.8819	0.0238	1.7027	0.0226	1.7253	0.4521	0.0206	0.4727		1,921.6315	1,921.6315	0.1063		1,923.8631
Total	**2.6938**	**1.6969**	**14.9039**	**0.0240**	**1.7027**	**0.0244**	**1.7272**	**0.4521**	**0.0225**	**0.4746**		**1,951.1810**	**1,951.1810**	**0.1069**	**5.4000e-004**	**1,953.5926**

	ROG	NOx	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	2.44	0.47	0.05	0.21	0.00	2.47	0.04	0.00	2.69	0.13	0.00	0.49	0.49	0.17	25.00	0.50

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2016	6/1/2016	5	1	
2	Grading	Grading	6/2/2016	7/27/2016	5	40	
3	Building Construction	Building Construction	7/28/2016	12/14/2016	5	100	
4	Paving	Paving	12/15/2016	12/21/2016	5	5	
5	Architectural Coating	Architectural Coating	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,643; Non-Residential Outdoor: 6,548 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3593	13.6350	7.3401	9.3500e-003		0.8338	0.8338		0.7671	0.7671		973.0842	973.0842	0.2935		979.2481
Total	**1.3593**	**13.6350**	**7.3401**	**9.3500e-003**	**0.5303**	**0.8338**	**1.3640**	**0.0573**	**0.7671**	**0.8243**		**973.0842**	**973.0842**	**0.2935**		**979.2481**

3.2 Site Preparation - 2016

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	0.0364	0.0400	0.4905	8.1000e-004	0.0639	5.4000e-004	0.0644	0.0169	4.9000e-004	0.0174		66.7798	66.7798	3.7200e-003		66.8580
Total	**0.0364**	**0.0400**	**0.4905**	**8.1000e-004**	**0.0639**	**5.4000e-004**	**0.0644**	**0.0169**	**4.9000e-004**	**0.0174**		**66.7798**	**66.7798**	**3.7200e-003**		**66.8580**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	0.2270	4.6535	6.9975	9.3500e-003		0.2625	0.2625		0.2625	0.2625	0.0000	973.0842	973.0842	0.2935		979.2481
Total	**0.2270**	**4.6535**	**6.9975**	**9.3500e-003**	**0.2068**	**0.2625**	**0.4693**	**0.0223**	**0.2625**	**0.2848**	**0.0000**	**973.0842**	**973.0842**	**0.2935**		**979.2481**

3.2 Site Preparation - 2016

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	0.0364	0.0400	0.4905	8.1000e-004	0.0639	5.4000e-004	0.0644	0.0169	4.9000e-004	0.0174		66.7798	66.7798	3.7200e-003		66.8580
Total	**0.0364**	**0.0400**	**0.4905**	**8.1000e-004**	**0.0639**	**5.4000e-004**	**0.0644**	**0.0169**	**4.9000e-004**	**0.0174**		**66.7798**	**66.7798**	**3.7200e-003**		**66.8580**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.3122	11.2385	8.7048	0.0120		0.8039	0.8039		0.7674	0.7674		1,193.6106	1,193.6106	0.2386		1,198.6217
Total	**1.3122**	**11.2385**	**8.7048**	**0.0120**	**0.7528**	**0.8039**	**1.5566**	**0.4138**	**0.7674**	**1.1811**		**1,193.6106**	**1,193.6106**	**0.2386**		**1,198.6217**

3.3 Grading - 2016

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	0.0727	0.0801	0.9809	1.6300e-003	0.1277	1.0800e-003	0.1288	0.0339	9.7000e-004	0.0348		133.5597	133.5597	7.4500e-003		133.7161
Total	**0.0727**	**0.0801**	**0.9809**	**1.6300e-003**	**0.1277**	**1.0800e-003**	**0.1288**	**0.0339**	**9.7000e-004**	**0.0348**		**133.5597**	**133.5597**	**7.4500e-003**		**133.7161**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2936	0.0000	0.2936	0.1614	0.0000	0.1614			0.0000			0.0000
Off-Road	0.2661	5.9808	7.9564	0.0120		0.4023	0.4023		0.4023	0.4023	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
Total	**0.2661**	**5.9808**	**7.9564**	**0.0120**	**0.2936**	**0.4023**	**0.6959**	**0.1614**	**0.4023**	**0.5637**	**0.0000**	**1,193.6106**	**1,193.6106**	**0.2386**		**1,198.6217**

3.3 Grading - 2016

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	0.0727	0.0801	0.9809	1.6300e-003	0.1277	1.0800e-003	0.1288	0.0339	9.7000e-004	0.0348		133.5597	133.5597	7.4500e-003		133.7161
Total	**0.0727**	**0.0801**	**0.9809**	**1.6300e-003**	**0.1277**	**1.0800e-003**	**0.1288**	**0.0339**	**9.7000e-004**	**0.0348**		**133.5597**	**133.5597**	**7.4500e-003**		**133.7161**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	**1.3816**	**13.7058**	**8.2122**	**0.0113**		**0.9398**	**0.9398**		**0.8646**	**0.8646**		**1,178.5549**	**1,178.5549**	**0.3555**		**1,186.0202**

3.4 Building Construction - 2016

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	0.0250	0.1705	0.2324	4.4000e-004	0.0120	2.8300e-003	0.0149	3.4400e-003	2.6000e-003	6.0400e-003		43.7253	43.7253	3.5000e-004		43.7326
Worker	0.0436	0.0480	0.5886	9.8000e-004	0.0766	6.5000e-004	0.0773	0.0203	5.8000e-004	0.0209		80.1358	80.1358	4.4700e-003		80.2297
Total	**0.0686**	**0.2185**	**0.8210**	**1.4200e-003**	**0.0887**	**3.4800e-003**	**0.0922**	**0.0238**	**3.1800e-003**	**0.0270**		**123.8611**	**123.8611**	**4.8200e-003**		**123.9623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2778	6.1000	7.9292	0.0113		0.3843	0.3843		0.3843	0.3843	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202
Total	**0.2778**	**6.1000**	**7.9292**	**0.0113**		**0.3843**	**0.3843**		**0.3843**	**0.3843**	**0.0000**	**1,178.5549**	**1,178.5549**	**0.3555**		**1,186.0202**

3.4 Building Construction - 2016

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	0.0250	0.1705	0.2324	4.4000e-004	0.0120	2.8300e-003	0.0149	3.4400e-003	2.6000e-003	6.0400e-003		43.7253	43.7253	3.5000e-004		43.7326
Worker	0.0436	0.0480	0.5886	9.8000e-004	0.0766	6.5000e-004	0.0773	0.0203	5.8000e-004	0.0209		80.1358	80.1358	4.4700e-003		80.2297
Total	**0.0686**	**0.2185**	**0.8210**	**1.4200e-003**	**0.0887**	**3.4800e-003**	**0.0922**	**0.0238**	**3.1800e-003**	**0.0270**		**123.8611**	**123.8611**	**4.8200e-003**		**123.9623**

3.5 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	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2094**	**10.6282**	**7.2935**	**0.0111**		**0.6606**	**0.6606**		**0.6113**	**0.6113**		**1,083.5832**	**1,083.5832**	**0.2969**		**1,089.8175**

3.5 Paving - 2016

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	0.1309	0.1441	1.7657	2.9300e-003	0.2299	1.9400e-003	0.2319	0.0610	1.7500e-003	0.0627		240.4074	240.4074	0.0134		240.6889
Total	**0.1309**	**0.1441**	**1.7657**	**2.9300e-003**	**0.2299**	**1.9400e-003**	**0.2319**	**0.0610**	**1.7500e-003**	**0.0627**		**240.4074**	**240.4074**	**0.0134**		**240.6889**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2200	4.6827	6.7829	0.0111		0.2872	0.2872		0.2872	0.2872	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3091**	**4.6827**	**6.7829**	**0.0111**		**0.2872**	**0.2872**		**0.2872**	**0.2872**	**0.0000**	**1,083.5832**	**1,083.5832**	**0.2969**		**1,089.8175**

3.5 Paving - 2016

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	0.1309	0.1441	1.7657	2.9300e-003	0.2299	1.9400e-003	0.2319	0.0610	1.7500e-003	0.0627		240.4074	240.4074	0.0134		240.6889
Total	**0.1309**	**0.1441**	**1.7657**	**2.9300e-003**	**0.2299**	**1.9400e-003**	**0.2319**	**0.0610**	**1.7500e-003**	**0.0627**		**240.4074**	**240.4074**	**0.0134**		**240.6889**

3.6 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	60.6976					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	**61.0661**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.6 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000					0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	7.2700e-003	8.0000e-003	0.0981						1.0000e-004	3.4800e-003		13.3560	13.3560	7.4000e-004		13.3716
Total	**7.2700e-003**	**8.0000e-003**	**0.098**						**1.0000e-004**	**3.4800e-003**		**13.3560**	**13.3560**	**7.4000e-004**		**13.3716**

Mitigated Construction On-Site

	ROG	NOx	CO	SO				ugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/						lb/day					
Archit. Coating	60.6976					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**60.7571**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.6 Architectural Coating - 2016

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	7.2700e-003	8.0000e-003	0.0981	1.6000e-004	0.0128	1.1000e-004	0.0129	3.3900e-003	1.0000e-004	3.4800e-003		13.3560	13.3560	7.4000e-004		13.3716
Total	**7.2700e-003**	**8.0000e-003**	**0.0981**	**1.6000e-004**	**0.0128**	**1.1000e-004**	**0.0129**	**3.3900e-003**	**1.0000e-004**	**3.4800e-003**		**13.3560**	**13.3560**	**7.4000e-004**		**13.3716**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.3941	1.6723	14.8819	0.0238	1.7027	0.0226	1.7253	0.4521	0.0206	0.4727		1,921.6315	1,921.6315	0.1063		1,923.8631
Unmitigated	2.3941	1.6723	14.8819	0.0238	1.7027	0.0226	1.7253	0.4521	0.0206	0.4727		1,921.6315	1,921.6315	0.1063		1,923.8631

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Racquet Club	239.81	479.62	239.81	464,858	464,858
Total	239.81	479.62	239.81	464,858	464,858

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
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Racquet Club	14.70	6.60	6.60	11.50	69.50	19.00	52	39	9

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.320000	0.320000	0.320000	0.010000	0.000000	0.000000	0.000000	0.000000	0.010000	0.000000	0.000000	0.000000	0.020000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.7100e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.5467	29.5467	5.7000e-004	5.4000e-004	29.7265
NaturalGas Unmitigated	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2416	39.2416	7.5000e-004	7.2000e-004	39.4805

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
Racquet Club	333.554	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2416	39.2416	7.5000e-004	7.2000e-004	39.4805
Total		**3.6000e-003**	**0.0327**	**0.0275**	**2.0000e-004**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**		**39.2416**	**39.2416**	**7.5000e-004**	**7.2000e-004**	**39.4805**

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 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
Racquet Club	0.251147	2.7100e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.5467	29.5467	5.7000e-004	5.4000e-004	29.7265
Total		**2.7100e-003**	**0.0246**	**0.0207**	**1.5000e-004**		**1.8700e-003**	**1.8700e-003**		**1.8700e-003**	**1.8700e-003**		**29.5467**	**29.5467**	**5.7000e-004**	**5.4000e-004**	**29.7265**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

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	0.2970	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Unmitigated	0.3635	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0832					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2802					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Total	**0.3635**	**1.0000e-005**	**1.3600e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8600e-003**	**2.8600e-003**	**1.0000e-005**		**3.0300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0166					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2802					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Total	**0.2970**	**1.0000e-005**	**1.3600e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8600e-003**	**2.8600e-003**	**1.0000e-005**		**3.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

High Plains Shooting Sports Complex

Shasta County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	7.50	1000sqft	0.17	7,500.00	0
Racquet Club	5.59	1000sqft	0.13	5,595.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	546.6	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy use intensity factors include RPS adjustment.

Land Use - Includes 5ksf main clubhouse and 595sf law enforcement clubhouse, 7.5ksf paved surface.

Construction Phase - Const requirements based on model defaults. Grading increased to an estimated 2 months (40 days) based on project information. All material balanced onsite.

Vehicle Trips - Conservatively based on pkhr trip gen rates applied over an 8-hr period. (42.9/ksf weekdays/Sundays; 85.8/ksf Saturdays). Trip lengths based on model defaults for Shasta County.

Vechicle Emission Factors - Project site is not serviced by public transit. Fleet mix based on traffic surveys conducted at San Luis Obispo's Sportsman Association's range Sat., Feb 6, 2016 (96%LDV; 4%MDV&OBUS)

Vechicle Emission Factors - .

Vechicle Emission Factors - .

Energy Use - .

Land Use Change - Estimated 60 acres grassland removed.

Sequestration - Estimated 147 trees planted.

Construction Off-road Equipment Mitigation - Watering CE 61% exposed area, 50% unpaved roads; 15 mph speed limit for onroad vehicles traveling on unpaved surfaces. Offroad equipment T3.

Area Mitigation - Includes use of low VOC paint (50 g/L max)

Energy Mitigation - Compliance with current T24 30% more efficient than previous standards (CEC 2015); 50% electrical demand provided by onsite renewable sources.

Water Mitigation - Includes installation of low-flow fixtures, water efficient irrigation systems.

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	50
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	50
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	2.00	40.00
tblLandUse	LandUseSquareFeet	5,590.00	5,595.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	546.6
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSequestration	NumberOfNewTrees	0.00	147.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	HHD	0.11	0.00
tblVehicleEF	LDA	0.37	0.32
tblVehicleEF	LDA	0.37	0.32

tblVehicleEF	LDA	0.37	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT1	0.04	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LDT2	0.20	0.32
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD1	0.09	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MCY	9.1170e-003	0.00
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MDV	0.15	0.01
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MH	4.6700e-003	0.02
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5900e-003	0.01
tblVehicleEF	OBUS	1.5900e-003	0.01
tblVehicleEF	OBUS	1.5900e-003	0.01

tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	SBUS	1.4140e-003	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleEF	UBUS	8.1600e-004	0.00
tblVehicleTrips	ST_TR	20.87	85.80
tblVehicleTrips	SU_TR	26.73	42.90
tblVehicleTrips	WD_TR	32.93	42.90

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	61.0725	13.9467	9.5944	0.0137	0.8805	0.9433	1.6855	0.4477	0.8678	1.2160	0.0000	1,314.0542	1,314.0542	0.3603	0.0000	1,321.6209
Total	**61.0725**	**13.9467**	**9.5944**	**0.0137**	**0.8805**	**0.9433**	**1.6855**	**0.4477**	**0.8678**	**1.2160**	**0.0000**	**1,314.0542**	**1,314.0542**	**0.3603**	**0.0000**	**1,321.6209**

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	60.7635	6.3408	8.8461	0.0137	0.4213	0.4034	0.8247	0.1953	0.4033	0.5985	0.0000	1,314.0542	1,314.0542	0.3603	0.0000	1,321.6209
Total	**60.7635**	**6.3408**	**8.8461**	**0.0137**	**0.4213**	**0.4034**	**0.8247**	**0.1953**	**0.4033**	**0.5985**	**0.0000**	**1,314.0542**	**1,314.0542**	**0.3603**	**0.0000**	**1,321.6209**

	ROG	NOx	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	0.51	54.54	7.80	0.00	52.15	57.24	51.07	56.38	53.53	50.78	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3635	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Energy	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2416	39.2416	7.5000e-004	7.2000e-004	39.4805
Mobile	1.9381	2.0004	15.5928	0.0217	1.7027	0.0226	1.7253	0.4521	0.0206	0.4728		1,751.3627	1,751.3627	0.1063		1,753.5948
Total	**2.3052**	**2.0331**	**15.6217**	**0.0219**	**1.7027**	**0.0251**	**1.7278**	**0.4521**	**0.0231**	**0.4752**		**1,790.6072**	**1,790.6072**	**0.1071**	**7.2000e-004**	**1,793.0783**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2970	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Energy	2.7100e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.5467	29.5467	5.7000e-004	5.4000e-004	29.7265
Mobile	1.9381	2.0004	15.5928	0.0217	1.7027	0.0226	1.7253	0.4521	0.0206	0.4728		1,751.3627	1,751.3627	0.1063		1,753.5948
Total	**2.2378**	**2.0250**	**15.6149**	**0.0219**	**1.7027**	**0.0245**	**1.7272**	**0.4521**	**0.0225**	**0.4746**		**1,780.9122**	**1,780.9122**	**0.1069**	**5.4000e-004**	**1,783.3243**

	ROG	NOx	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	2.92	0.40	0.04	0.23	0.00	2.47	0.04	0.00	2.68	0.13	0.00	0.54	0.54	0.17	25.00	0.54

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	6/1/2016	6/1/2016	5	1	
2	Grading	Grading	6/2/2016	7/27/2016	5	40	
3	Building Construction	Building Construction	7/28/2016	12/14/2016	5	100	
4	Paving	Paving	12/15/2016	12/21/2016	5	5	
5	Architectural Coating	Architectural Coating	12/22/2016	12/28/2016	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,643; Non-Residential Outdoor: 6,548 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	6.00	2.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.3593	13.6350	7.3401	9.3500e-003		0.8338	0.8338		0.7671	0.7671		973.0842	973.0842	0.2935		979.2481
Total	1.3593	13.6350	7.3401	9.3500e-003	0.5303	0.8338	1.3640	0.0573	0.7671	0.8243		973.0842	973.0842	0.2935		979.2481

3.2 Site Preparation - 2016

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	0.0320	0.0497	0.4448	7.3000e-004	0.0639	5.4000e-004	0.0644	0.0169	4.9000e-004	0.0174		60.2218	60.2218	3.7200e-003		60.3000
Total	**0.0320**	**0.0497**	**0.4448**	**7.3000e-004**	**0.0639**	**5.4000e-004**	**0.0644**	**0.0169**	**4.9000e-004**	**0.0174**		**60.2218**	**60.2218**	**3.7200e-003**		**60.3000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2068	0.0000	0.2068	0.0223	0.0000	0.0223			0.0000			0.0000
Off-Road	0.2270	4.6535	6.9975	9.3500e-003		0.2625	0.2625		0.2625	0.2625	0.0000	973.0842	973.0842	0.2935		979.2481
Total	**0.2270**	**4.6535**	**6.9975**	**9.3500e-003**	**0.2068**	**0.2625**	**0.4693**	**0.0223**	**0.2625**	**0.2848**	**0.0000**	**973.0842**	**973.0842**	**0.2935**		**979.2481**

3.2 Site Preparation - 2016

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	0.0320	0.0497	0.4448	7.3000e-004	0.0639	5.4000e-004	0.0644	0.0169	4.9000e-004	0.0174		60.2218	60.2218	3.7200e-003		60.3000
Total	**0.0320**	**0.0497**	**0.4448**	**7.3000e-004**	**0.0639**	**5.4000e-004**	**0.0644**	**0.0169**	**4.9000e-004**	**0.0174**		**60.2218**	**60.2218**	**3.7200e-003**		**60.3000**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.3122	11.2385	8.7048	0.0120		0.8039	0.8039		0.7674	0.7674		1,193.6106	1,193.6106	0.2386		1,198.6217
Total	**1.3122**	**11.2385**	**8.7048**	**0.0120**	**0.7528**	**0.8039**	**1.5566**	**0.4138**	**0.7674**	**1.1811**		**1,193.6106**	**1,193.6106**	**0.2386**		**1,198.6217**

3.3 Grading - 2016

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	0.0639	0.0993	0.8897	1.4700e-003	0.1277	1.0800e-003	0.1288	0.0339	9.7000e-004	0.0348		120.4435	120.4435	7.4500e-003		120.6000
Total	**0.0639**	**0.0993**	**0.8897**	**1.4700e-003**	**0.1277**	**1.0800e-003**	**0.1288**	**0.0339**	**9.7000e-004**	**0.0348**		**120.4435**	**120.4435**	**7.4500e-003**		**120.6000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2936	0.0000	0.2936	0.1614	0.0000	0.1614			0.0000			0.0000
Off-Road	0.2661	5.9808	7.9564	0.0120		0.4023	0.4023		0.4023	0.4023	0.0000	1,193.6106	1,193.6106	0.2386		1,198.6217
Total	**0.2661**	**5.9808**	**7.9564**	**0.0120**	**0.2936**	**0.4023**	**0.6959**	**0.1614**	**0.4023**	**0.5637**	**0.0000**	**1,193.6106**	**1,193.6106**	**0.2386**		**1,198.6217**

3.3 Grading - 2016

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	0.0639	0.0993	0.8897	1.4700e-003	0.1277	1.0800e-003	0.1288	0.0339	9.7000e-004	0.0348		120.4435	120.4435	7.4500e-003		120.6000
Total	**0.0639**	**0.0993**	**0.8897**	**1.4700e-003**	**0.1277**	**1.0800e-003**	**0.1288**	**0.0339**	**9.7000e-004**	**0.0348**		**120.4435**	**120.4435**	**7.4500e-003**		**120.6000**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3816	13.7058	8.2122	0.0113		0.9398	0.9398		0.8646	0.8646		1,178.5549	1,178.5549	0.3555		1,186.0202
Total	**1.3816**	**13.7058**	**8.2122**	**0.0113**		**0.9398**	**0.9398**		**0.8646**	**0.8646**		**1,178.5549**	**1,178.5549**	**0.3555**		**1,186.0202**

3.4 Building Construction - 2016

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	0.0317	0.1813	0.3595	4.4000e-004	0.0120	2.8700e-003	0.0149	3.4400e-003	2.6400e-003	6.0800e-003		43.3615	43.3615	3.6000e-004		43.3690
Worker	0.0383	0.0596	0.5338	8.8000e-004	0.0766	6.5000e-004	0.0773	0.0203	5.8000e-004	0.0209		72.2661	72.2661	4.4700e-003		72.3600
Total	**0.0701**	**0.2409**	**0.8933**	**1.3200e-003**	**0.0887**	**3.5200e-003**	**0.0922**	**0.0238**	**3.2200e-003**	**0.0270**		**115.6276**	**115.6276**	**4.8300e-003**		**115.7290**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2778	6.1000	7.9292	0.0113		0.3843	0.3843		0.3843	0.3843	0.0000	1,178.5549	1,178.5549	0.3555		1,186.0202
Total	**0.2778**	**6.1000**	**7.9292**	**0.0113**		**0.3843**	**0.3843**		**0.3843**	**0.3843**	**0.0000**	**1,178.5549**	**1,178.5549**	**0.3555**		**1,186.0202**

3.4 Building Construction - 2016

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	0.0317	0.1813	0.3595	4.4000e-004	0.0120	2.8700e-003	0.0149	3.4400e-003	2.6400e-003	6.0800e-003		43.3615	43.3615	3.6000e-004		43.3690
Worker	0.0383	0.0596	0.5338	8.8000e-004	0.0766	6.5000e-004	0.0773	0.0203	5.8000e-004	0.0209		72.2661	72.2661	4.4700e-003		72.3600
Total	**0.0701**	**0.2409**	**0.8933**	**1.3200e-003**	**0.0887**	**3.5200e-003**	**0.0922**	**0.0238**	**3.2200e-003**	**0.0270**		**115.6276**	**115.6276**	**4.8300e-003**		**115.7290**

3.5 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	1.1203	10.6282	7.2935	0.0111		0.6606	0.6606		0.6113	0.6113		1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2094**	**10.6282**	**7.2935**	**0.0111**		**0.6606**	**0.6606**		**0.6113**	**0.6113**		**1,083.5832**	**1,083.5832**	**0.2969**		**1,089.8175**

3.5 Paving - 2016

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	0.1150	0.1788	1.6014	2.6400e-003	0.2299	1.9400e-003	0.2319	0.0610	1.7500e-003	0.0627		216.7984	216.7984	0.0134		217.0799
Total	**0.1150**	**0.1788**	**1.6014**	**2.6400e-003**	**0.2299**	**1.9400e-003**	**0.2319**	**0.0610**	**1.7500e-003**	**0.0627**		**216.7984**	**216.7984**	**0.0134**		**217.0799**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2200	4.6827	6.7829	0.0111		0.2872	0.2872		0.2872	0.2872	0.0000	1,083.5832	1,083.5832	0.2969		1,089.8175
Paving	0.0891					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3091**	**4.6827**	**6.7829**	**0.0111**		**0.2872**	**0.2872**		**0.2872**	**0.2872**	**0.0000**	**1,083.5832**	**1,083.5832**	**0.2969**		**1,089.8175**

3.5 Paving - 2016

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	0.1150	0.1788	1.6014	2.6400e-003	0.2299	1.9400e-003	0.2319	0.0610	1.7500e-003	0.0627		216.7984	216.7984	0.0134		217.0799
Total	**0.1150**	**0.1788**	**1.6014**	**2.6400e-003**	**0.2299**	**1.9400e-003**	**0.2319**	**0.0610**	**1.7500e-003**	**0.0627**		**216.7984**	**216.7984**	**0.0134**		**217.0799**

3.6 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	60.6976					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	**61.0661**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.6 Architectural Coating - 2016

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	6.3900e-003	9.9300e-003	0.0890	1.5000e-004	0.0128	1.1000e-004	0.0129	3.3900e-003	1.0000e-004	3.4800e-003		12.0444	12.0444	7.4000e-004		12.0600
Total	**6.3900e-003**	**9.9300e-003**	**0.0890**	**1.5000e-004**	**0.0128**	**1.1000e-004**	**0.0129**	**3.3900e-003**	**1.0000e-004**	**3.4800e-003**		**12.0444**	**12.0444**	**7.4000e-004**		**12.0600**

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	60.6976					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0594	1.3570	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**60.7571**	**1.3570**	**1.8324**	**2.9700e-003**		**0.0951**	**0.0951**		**0.0951**	**0.0951**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.6 Architectural Coating - 2016

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	6.3900e-003	9.9300e-003	0.0890	1.5000e-004	0.0128	1.1000e-004	0.0129	3.3900e-003	1.0000e-004	3.4800e-003		12.0444	12.0444	7.4000e-004		12.0600
Total	**6.3900e-003**	**9.9300e-003**	**0.0890**	**1.5000e-004**	**0.0128**	**1.1000e-004**	**0.0129**	**3.3900e-003**	**1.0000e-004**	**3.4800e-003**		**12.0444**	**12.0444**	**7.4000e-004**		**12.0600**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9381	2.0004	15.5928	0.0217	1.7027	0.0226	1.7253	0.4521	0.0206	0.4728		1,751.3627	1,751.3627	0.1063		1,753.5948
Unmitigated	1.9381	2.0004	15.5928	0.0217	1.7027	0.0226	1.7253	0.4521	0.0206	0.4728		1,751.3627	1,751.3627	0.1063		1,753.5948

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Racquet Club	239.81	479.62	239.81	464,858	464,858
Total	239.81	479.62	239.81	464,858	464,858

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
Other Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Racquet Club	14.70	6.60	6.60	11.50	69.50	19.00	52	39	9

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.320000	0.320000	0.320000	0.010000	0.000000	0.000000	0.000000	0.000000	0.010000	0.000000	0.000000	0.000000	0.020000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.7100e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.5467	29.5467	5.7000e-004	5.4000e-004	29.7265
NaturalGas Unmitigated	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2416	39.2416	7.5000e-004	7.2000e-004	39.4805

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					
Racquet Club	333.554	3.6000e-003	0.0327	0.0275	2.0000e-004		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003		39.2416	39.2416	7.5000e-004	7.2000e-004	39.4805
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		**3.6000e-003**	**0.0327**	**0.0275**	**2.0000e-004**		**2.4900e-003**	**2.4900e-003**		**2.4900e-003**	**2.4900e-003**		**39.2416**	**39.2416**	**7.5000e-004**	**7.2000e-004**	**39.4805**

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 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
Racquet Club	0.251147	2.7100e-003	0.0246	0.0207	1.5000e-004		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003		29.5467	29.5467	5.7000e-004	5.4000e-004	29.7265
Total		**2.7100e-003**	**0.0246**	**0.0207**	**1.5000e-004**		**1.8700e-003**	**1.8700e-003**		**1.8700e-003**	**1.8700e-003**		**29.5467**	**29.5467**	**5.7000e-004**	**5.4000e-004**	**29.7265**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

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	0.2970	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Unmitigated	0.3635	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0832					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2802					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Total	**0.3635**	**1.0000e-005**	**1.3600e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8600e-003**	**2.8600e-003**	**1.0000e-005**		**3.0300e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0166					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2802					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3600e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8600e-003	2.8600e-003	1.0000e-005		3.0300e-003
Total	**0.2970**	**1.0000e-005**	**1.3600e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8600e-003**	**2.8600e-003**	**1.0000e-005**		**3.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation