Air Quality/Greenhouse Gas Impact Analysis Report

Locan 35 – Tracts 6264 and 6239

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Abbreviations

$\mu g/m^3$	Micrograms Per Cubic Meter
AB	Assembly Bill
ACBMs	Asbestos-Containing Building Materials
ATCMs	Airborne Toxic Control Measures
AQGGP	Air Quality Guidelines for General Plans
AQI	Air Quality Index
AQP	Air Quality Plan
BACT	Best Available Control Technology
BAAQMD	Bay Area Air Quality Management District
BAU	Business-As-Usual
BPS	Best Performance Standards
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CF_4	Perfluoromethane
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
C_2F_6	Perfluoroethane
C_3F_8	Perfluoropropane
C_4F_{10}	Perfluorobutane
C_4F_8	Perfluorocyclobutane
C_5F_{12}	Perfluoropentane
C_6F_{14}	Perfluorohexane
DPM	Diesel Particulate Matter
DRRP	Diesel Risk Reduction Plan
EO	Executive Order
EPA	United States Environmental Protection Agency
FAR	Floor Area Ratio
FCAA	Federal Clean Air Act
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gases

GWP	Global Warming Potential
HAP	Hazardous Air Pollutants
HFC	Hydrofluorocarbons
H_2S	Hydrogen Sulfide
LCFS	Low Carbon Fuel Standard
LOS	Level of Service
MMT	Million Metric Tons
$MMTCO_2e$	Million Metric Tons of Carbon Dioxide Equivalents
$MTCO_2e$	Metric Tons of Carbon Dioxide Equivalents
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NF_3	Nitrogen Trifluoride
N_2O	Nitrous Oxide
NOA	Naturally Occurring Asbestos
NO_X	Oxides of Nitrogen
NO_2	Nitrogen Dioxide
O_3	Ozone
OAL	Office of Administrative Law
Pb	Lead
PEIR	Program Environmental Impact Report
PERP	Portable Equipment Registration Program
PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM	Particulate Matter
$PM_{2.5}$	Fine particulate matter; particulate matter 2.5 microns or smaller
PM_{10}	Particulate matter; particulate matter 10 microns or smaller
ppb	parts per billion
ppm	parts per million
ROG	Reactive Organic Gases
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SF_6	Sulfur Hexafluoride
SIL	Significant Impact Level
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District

SO_2	Sulfur Dioxide
SO_4	Sulfates
SO_X	Sulfur Oxides
TAC	Toxic Air Contaminants
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

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Executive Summary

The following air quality and greenhouse gas impact analysis was prepared to evaluate whether the estimated criteria pollutant and greenhouse gas emissions generated from the construction and operation of the Locan 35 – Tracts 6264 and 6239 Project (Project) in the City of Clovis, California would cause significant impacts to air resources in the Project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000, et seq.).

Project Summary

The Project is located in the City of Clovis. The Project includes the development of two (2) distinct areas – Project (West- Tract 6264) and Project (East- Tract 6239). Project (West) is located on the northwest corner of Locan Avenue and Cook Avenue and proposes to develop up to 37 single-family detached housing units. Project (East) is located on the northeast quadrant of Locan Avenue and Teague Avenue and proposes to develop up to 171 single-family detached housing units. The Project will undergo a General Plan Amendment through the City of Clovis to modify the existing land use designation from Low Density Residential to Medium Density Residential.

Summary of Analysis Results

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

Impact AIR-2: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. **Less Than Significant Impact.**

Impact AIR-3: The Project would not expose sensitive receptors to substantial pollutant concentrations. **Less Than Significant impact.**

Impact AIR-4: The Project would not result in other emissions (such as those leading to odors) affecting a substantial number of people. **Less Than Significant Impact.**

Impact GHG-1: The Project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less Than Significant Impact.**

Impact GHG-2: The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less Than Significant Impact.**

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1.0 INTRODUCTION

1.1 REPORT PURPOSE

The purpose of this Air Quality and Greenhouse Gas Impact Analysis Report (Report) is to analyze potential air quality and greenhouse gas (GHG) impacts that could occur with the construction and operation of the Locan 35 Project (Project or proposed Project) on the northwest corner of Locan Avenue and the northeast quadrant of Locan Avenue and Teague Avenue in the City of Clovis, California. This assessment was conducted within the context of the California Environmental Quality Act (CEQA).

1.2 PROJECT DESCRIPTION

The Project is located in the City of Clovis. The Project includes the development of two (2) distinct areas – Project (West- Tract 6264) and Project (East- Tract 6239). Project (West) is located on the northwest corner of Locan Avenue and Cook Avenue and proposes to develop up to 37 single-family detached housing units. Project (East) is located on the northeast quadrant of Locan Avenue and Teague Avenue and proposes to develop up to 171 single-family detached housing units. The Project will undergo a General Plan Amendment through the City of Clovis to modify the existing land use designation from Low Density Residential to Medium Density Residential.

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2.0 AIR QUALITY

2.1 ENVIRONMENTAL SETTING

The proposed project is located within the San Joaquin Valley Air Basin (SJVAB). The San Joaquin Valley Air Pollution Control District (SJVAPCD) regulates air quality in eight counties including: Fresno, Kern, (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare.

Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that produce emissions. Air pollution from significant anthropogenic activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources.

Activities that tend to increase mobile activity include increases in population, increases in general traffic activity (including automobiles, trucks, aircraft, and rail), urban sprawl (which will increase commuter driving distances), and general local land management practices as they pertain to modes of commuter transportation. These sources, coupled with geographical and meteorological conditions unique to the area, stimulate the formation of unhealthy air.

2.1.1 Climate and Topography

The following information is excerpted from the most recent version of the SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) adopted in March 2015 (SJVAPCD 2015).

The SJVAB has an “inland Mediterranean” climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Basin averages over 260 sunny days per year. The SJVAB is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the SJVAB form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Southeast Desert Air Basin portion of Kern County. As the wind moves through the Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur

throughout the SJVAB in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which in addition to moisture may include suspended dust, a variety of chemical aerosols emitted from vehicles, particulates from wood stoves, and other pollutants. In the winter, these conditions can lead to carbon monoxide “hotspots” along heavily traveled roads and at busy intersections. During summer’s longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NOx), which results in the formation of ozone.

Because of the prevailing daytime winds and time-delayed nature of ozone, concentrations are highest in the southern portion of the Basin. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be localized and can consist of (but are not exclusive to) odors from agricultural operations; soot or smoke around residential, agricultural, and hazard-reduction wood burning; or dust near mineral resource recovery operations.

2.1.2 Criteria Air Pollutants

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the 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.

2.1.2.1 Ozone

Ozone (O_3) is a reactive gas consisting of three atoms of oxygen. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth’s surface is the troposphere. The troposphere extends to a level about 10 miles up where it meets the second layer, the stratosphere. While Ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O_3 can adversely affect the human respiratory system.

Ozone, a colorless gas which is odorless at ambient levels, is the chief component of urban smog. Ozone is not directly emitted as a pollutant but is formed in the atmosphere when hydrocarbon and NOx precursor emissions react in the presence of sunlight. Meteorology and terrain play major roles in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and cloudless skies provide the optimum conditions for ozone formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often impacts a large area (California Air Resources Board [CARB] 2001, 2010).

Sources of precursor gases number in the thousands and include common sources such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Emissions of the ozone precursors ROG and NO_X most commonly originate from motor vehicles, as well as commercial and industrial uses.

Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Long-term exposure to ozone is linked to aggravation of asthma and is likely to be one of many causes of asthma development. Long-term exposures to higher concentrations of ozone may also be linked to permanent lung damage, such as abnormal lung development in children. People most at risk from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. In addition, people with certain genetic characteristics, and people with reduced intake of certain nutrients, such as vitamins C and E, are at greater risk from ozone exposure (EPA 2019a).

2.1.2.2 Reactive Organic Gases and Volatile Organic Compounds

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases, including Volatile Organic Compounds (VOCs) and ROGs. ROGs include all hydrocarbons except those exempted by CARB. Therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they include all organic gases except those exempted by federal law.

Both VOCs and ROGs are emitted from incomplete combustion of hydrocarbons or other carbon- based fuels. Combustion engine exhaust, oil refineries, and oil-fueled power plants are the primary sources of hydrocarbons. Another source of hydrocarbons is evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects related to hydrocarbons stem from ozone (see discussion above). High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. There are no separate national or California ambient air quality standards for ROG. Carcinogenic forms of ROG, such as benzene, are also considered toxic air contaminants (TACs).

2.1.2.3 Nitrogen Dioxide and Nitrogen Oxides

Nitrogen dioxide (NO_2) is one of a group of highly reactive gases known as "oxides of nitrogen (NO_X)." NO_2 is the component of greatest interest and the indicator for the larger group of NO_X. It forms quickly from emissions from cars, trucks and buses, powerplants, and off-road equipment. NO_X is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates.

NO_X is emitted from solvents and combustion processes in which fuel is burned at high temperatures. Mobile sources (including on-road and off-road vehicles) and stationary sources such as electric utilities and industrial boilers, constitute a majority of the statewide NO_X emissions. To a lesser extent, area-wide sources, such as residential heaters, gas stoves, and managed burning and disposal, also contribute to total state-wide NO_X emissions (CARB 2010). NO_X is also linked to the formation of ground-level ozone and fine particle pollution (see discussion above for ozone and particulate pollution for additional discussion of health-related impacts).

Direct inhalation of NO_X can cause a wide range of health effects. NO_X can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of NO_2 may lead to changes in airway responsiveness and lung function in individuals with pre-existing respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible lung damage. Other health effects are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to the production of particulate nitrates. Airborne NO_X can also impair visibility.

NO_X also contributes to a wide range of environmental effects both directly and indirectly when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication (a condition that promotes excessive algae growth, which can lead to a severe depletion of dissolved oxygen and increased levels of toxins that are harmful to aquatic life).

Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates low pH conditions and levels of aluminum that are toxic to fish and other aquatic organisms. NO_X also contributes to haze and visibility impairment (EPA 2019a, CARB 2016a).

2.1.2.4 Particulate Matter

Particulate matter (PM) is a mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, sulfates, and organic compounds; and complex mixtures such as diesel exhaust and soil. $PM_{2.5}$ includes fine particles with a diameter of 2.5 microns or smaller and is a subset of

PM_{10}. These particles come in many sizes and shapes and can be made up of hundreds of different chemicals. Some particles, known as primary particles are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires. Others form in complicated reactions in the atmosphere of chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industries and automobiles. These particles, known as secondary particles, make up most of the fine particle pollution in the country (EPA 2019a, CARB 2016a).

Area-wide sources account for about 65 and 83% of the statewide emissions of directly emitted $PM_{2.5}$ and PM_{10}, respectively. The major area-wide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially dust from unpaved and paved roads, agricultural operations, and construction and demolition. Sources of PM_{10} include crushing or grinding operations, and dust stirred up by vehicles traveling on roads. Sources of $PM_{2.5}$ include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes.

Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions but are a major source of the VOC and NO_X that form secondary particles (CARB 2013).

$PM_{2.5}$ and PM_{10} particles are small enough to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases; heart and lung disease; and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. $PM_{2.5}$ and PM_{10} can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Sensitive populations, including children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis are especially vulnerable to the effect of PM_{10}. Non-health-related effects include reduced visibility and soiling of buildings.

2.1.2.5 Carbon Monoxide

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive.

CO enters the bloodstream and binds more readily to hemoglobin, the oxygen-carrying protein in blood, than oxygen, thereby reducing the oxygen-carrying capacity of blood and reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. Exposure to CO can cause chest pain in heart patients, headaches, and reduced mental alertness. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and, with prolonged enclosed exposure, death.

Very high levels of CO are not likely to occur outdoors. However, when CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability for getting oxygenated blood to their hearts in situations where the heart needs more oxygen than usual. They are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (EPA 2019a).

2.1.2.6 Sulfur Dioxide

Sulfur Dioxide (SO_2) is one of a group of highly reactive gases known as "oxides of sulfur (SO_X)." It is a colorless, irritating gas with a "rotten egg" smell that is formed primarily by the combustion of sulfur-containing fossil fuels. The largest source of SO_2 in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities. Smaller sources of SO_2 emissions include: industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content. State and national ambient air quality standards for SO_2 are designed to protect against exposure to the entire group of sulfur oxides (SO_X). SO_2 is the component of greatest concern and is used as the indicator for the larger group of gaseous sulfur oxides.

High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer term exposures to high concentrations of SO_2 in conjunction with high levels of particulate matter include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. The subgroups of the population that may be affected under these conditions include individuals with heart or lung disease, as well as the elderly and children.

Together, SO_2 and NO_X are the major precursors to acidic deposition (acid rain), which is associated with the acidification of soils, lakes, and streams and accelerated corrosion of buildings and monuments. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern, and a main contributor to poor visibility.

2.1.2.7 Lead

Lead (Pb) is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities including burning fossil fuels, mining, and manufacturing. Lead has many different uses. It is used in the production of batteries, ammunition, metal products (solder and pipes), and devices to shield X-rays. Because of health concerns, lead from paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years. The use of lead as an additive to gasoline was banned in 1996 in the United States.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. The effects of lead are the same regardless of the path of exposure. Lead can affect almost every organ and system in your body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It may also cause weakness in fingers, wrists, or ankles.

Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High level exposure in men can damage the organs responsible for sperm production.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common if the mother or baby was exposed to high levels of lead. Some of these effects may persist beyond childhood (Agency for Toxic Substances & Disease Registry [ATSDR] 2007a).

2.1.2.8 Hydrogen Sulfide

Hydrogen Sulfide (H_2S) is a colorless gas with the odor of rotten eggs. H_2S occurs naturally and is also produced by human activities. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. It can also result during bacterial decomposition of sulfur-containing organic substances. Emissions of H_2S associated with human activities including various industrial activities, such as oil and gas production, refining, sewage treatment plants, food processing, and confined animal feeding operations.

Studies in humans suggest that the respiratory tract and nervous system are the most sensitive targets of H_2S toxicity. Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Respiratory distress or arrest has been observed in people exposed to very high concentrations of H_2S. Exposure to low concentrations of H_2S may cause headaches, poor memory, tiredness, and balance problems. Brief exposures to high concentrations of H_2S can cause loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. H_2S is extremely hazardous in high concentrations; especially in enclosed spaces. In some instances, exposure to high concentrations can cause death (ATSDR 2007b)

2.1.2.9 Other Pollutants

The State of California has established air quality standards for some pollutants not addressed by Federal standards. The CARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. Below is a summary of these pollutants and a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

Sulfates

Sulfates (SO_4) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The CARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Visibility Reducing Particles

Visibility Reducing Particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Vinyl Chloride

Vinyl Chloride is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

2.1.3 Odors

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

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very 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 and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also 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.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The SJVAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to SJVAPCD Rule 4102, Nuisance. Any actions related to odors would be based on citizen complaints to local governments and the SJVAPCD.

2.1.4 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 EPA and the CARB 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 (BACT) 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 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 (Assembly Bill [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 CARB 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:

2.1.4.1 Diesel Particulate Matter

Diesel Particulate Matter (DPM) was identified as a TAC by the CARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 42% of the statewide total, with an additional 55% attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary

sources, contributing about 3% 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 (CARB 2013).

In October 2000, the CARB 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% 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 CARB 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 (CARB 2013). In comparison to year 2010 inventory of statewide DPM emissions, CARB estimates that emissions of DPM in 2035 will be reduced by more than 50%.

DPM is typically composed of carbon particles (“soot”, also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NO_x. NO_x emissions from diesel engines are important because they can undergo chemical reactions in the atmosphere leading to formation of $PM_{2.5}$ and ozone.

In California, diesel exhaust particles have been identified as a carcinogen accounting for an estimated 70% of the total known cancer risks in California. DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over an estimated 70-year lifetime. Non- cancer health effects associated with exposure to DPM include premature death, exacerbated chronic heart and lung disease, including asthma, and decreased lung function in children. Short-term exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks (CARB 2016b).

Individuals most vulnerable to non-cancer health effects of DPM are children whose lungs are still developing and the elderly who often have chronic health problems. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to DPM (CARB 2016b). In addition to its health effects, DPM significantly contributes to haze and reduced visibility.

2.1.4.2 Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings constructed prior to its ban for use in buildings in 1977. Exposure to naturally occurring asbestos can occur during soil disturbing activities in areas with deposits present.

2.1.4.3 Valley Fever

Valley Fever is an infection caused by a fungus that lives in the soil. About 10,000 U.S. cases are reported each year, mostly from Arizona and California. Valley fever can be misdiagnosed because its symptoms are similar to those of other illnesses.

The fungus that causes Valley fever, *Coccidioides*, is found in the southwestern United States, parts of Mexico and Central America, and parts of South America. The fungus grows naturally and is endemic in many areas along the western region of Fresno County. People can get this infection by breathing in fungal spores from the air, especially when the wind blows the soil with the fungal spores into the air or the dirt is moved by human activity. About 40% of the people who come into contact with the fungal spores will develop symptoms that may require medical treatment and the symptoms will not go away on their own. Some people may develop a more severe infection, especially those with compromised immune systems (Centers for Disease Control and Prevention [CDC] 2018).

2.1.5 Attainment Status

The United States EPA and CARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or “form” of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual standard for $PM_{2.5}$ is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the SJVAB are shown in Table 1. The SJVAB is designated as nonattainment for ozone, PM_{10}, and $PM_{2.5}$.

Table 1 San Joaquin Valley Air Basin Attainment Status

Pollutant	Designation/Classification	
	Federal Standards[a]	State Standards[b]
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight Hour	Nonattainment/Extreme[e]	Nonattainment
PM_{10}	Attainment[c]	Nonattainment
$PM_{2.5}$	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Notes:

a See 40 CFR Part 81

b See CCR Title 17 Sections 60200-60210

c On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.

d The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

e Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

f Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Source: SJVAPCD 2019

2.1.6 Ambient Air Quality

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project. Table 2 summarizes published monitoring data from 2015 through 2017, the most recent 3-year period available for the nearest monitoring station is in Clovis (at 908 N. Villa Avenue), located approximately 1.85 miles northeast from the project site. The data shows that during the past few years, the SJVAB has exceeded the ozone, PM_{10}, and $PM_{2.5}$ standards.

Table 2 Ambient Air Quality Summary

Air Pollutant	Averaging Time	Item	2015	2016	2017
Ozone	1 Hour[a]	Max 1 Hour (ppm)	0.116	0.113	0.138
		Days > State Standard (0.09 ppm)	18	26	13
	8 Hour	Max 8 Hour (ppm)	0.099	0.096	0.101
		Days > State Standard (0.070 ppm)	51	63	50
		Days > National Standard (0.070 ppm)	50	62	47
		Days > National Standard (0.075 ppm)	28	46	23
Carbon Monoxide	8 Hour	Max 8 Hour (ppm)	xx	xx	xx
		Days > State Standard (9.0 ppm)	xx	xx	xx
		Days > National Standard (9.0 ppm)	xx	xx	xx
Nitrogen dioxide	Annual	Annual Average (ppm)	xx	xx	xx
	1 Hour	Max 1 Hour (ppm)	xx	xx	xx
		Days > State Standard (0.18 ppm)	xx	xx	xx
Sulfur dioxide	Annual	Annual Average (ppm)	xx	xx	xx
	24 Hour	Max 24 Hour (ppm)	xx	xx	xx
		Days > State Standard (0.04 ppm)	xx	xx	xx
Inhalable coarse particles (PM_{10})	Annual (National)	Annual Average (µg/m^3)	33.9	32.8	36.2
	Annual (State)	Annual Average (µg/m^3)	33.7	32.7	ID
	24 hour	24 Hour (µg/m^3)	105.3	76.2	103.2
		Days > State Standard (50 µg/m^3)	50.3	61.3	ID
		Days > National Standard (150 µg/m^3)	0	0	0
Fine particulate matter ($PM_{2.5}$)	Annual (National)	Annual Average (µg/m^3)	14.9	12.5	13.2
	Annual (State)	Annual Average (µg/m^3)	12.9	11.5	13.5
	24 Hour	24 Hour (µg/m^3)	80.7	50.4	69.5
		Days > National Standard (35 µg/m^3)	80.7	50.4	69.5

Notes:
> = exceed
ppm = parts per million
g/m3 = micrograms per cubic meter
a = The Federal 1 hour Ozone Standard was revoked in June 2005; California retained a 1 hour Ozone Standard
ID = insufficient data
max = maximum
Bold = exceedance

State Standard = CAAQS
National Standard = NAAQS
Sulfur dioxide is reported on a statewide basis as it is no longer monitored locally
Sources: CARB 2018a

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest in comparison is to the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy to understand measure of health impact compared to concentrations in the air. Table 3 provides a description of the health impacts ozone at different concentrations.

Table 3 Air Quality Index and Health Effects

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
AQI – 51-100 – Moderate Concentration 12.1-35.4 µg/m^3	Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier.
	Everyone else: It's a good day to be active outside.
AQI – 101-150 – Unhealthy for Sensitive Groups Concentration 35.5-55.4 µg/m^3	Sensitive groups: Reduce prolonged or heavy exertion. It's OK to be active outside but take more breaks and do less intense activities. Watch for symptoms such as coughing or shortness of breath.
	People with asthma: Should follow their asthma action plans and keep quick relief medicine handy.
	If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider.
AQI – 151-200 – Unhealthy Concentration 55.5-150.4 µg/m^3	Sensitive groups: Avoid prolonged or heavy exertion. Move activities indoors or reschedule to a time when the air quality is better.
	Everyone else: Reduce prolonged or heavy exertion. Take more breaks during all outdoor activities.
AQI – 201-300 – Very Unhealthy Concentration 150.5-250.4 µg/m^3	Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better.
	Everyone else: Avoid prolonged or heavy exertion. Consider activities indoors or rescheduling to a time when air quality is better.
AQI – 301-500 – Hazardous	Everyone: Avoid all physical activity outdoors.
	Sensitive groups: Remain indoors and keep activity levels low. Follow tips for keeping particle levels low indoors.
Source: EPA 2017	

Based on the AQI scale for the 8-hour ozone standard, Clovis experienced no days in the last 3 years that would be categorized as unhealthful (AQI 200), and as many as 56 days that were unhealthful for sensitive groups (AQI 150) or moderate (AQI 100) as measured at the Clovis monitoring station. The highest reading was 95 parts per billion (ppb) in 2014 compared with the 95-ppb cutoff point for unhealthful for sensitive groups (AQI 150), but lower than the 115-ppb cutoff point for unhealthy (AQI 200).

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 35.4 µg/m^3, which is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the project exceeded the standard on 40 days in 2014. People with respiratory or heart disease, the elderly and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 150 or less is classified as unhealthy for sensitive groups with a $PM_{2.5}$ concentration of 55.4 µg/m^3. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. AQI 151-200—unhealthful with a concentration of 55.5-150.4 µg/m^3—was also exceeded on at least 13 days in the last 3 years. The highest concentration recorded in Clovis was 80.7 µg/m^3 in 2015. At this concentration, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly and increased respiratory effects in general population would occur. People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level.

2.1.7 Local Sources of Air Pollution

The Project's site is located in a predominately residential setting, where the main sources of air pollution are mobile sources traveling along the nearby roadways that surround the Project site. Nearby sources of air pollution include emissions from vehicles on Locan Avenue and Teague Avenue.

2.1.8 Sensitive Receptors

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. For purposes of CEQA, the SJVAPCD considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The following sensitive receptors have been identified (all distances are approximate):

- **Residences** (north of the Project West- Tract 6264): 50 feet north of the project site, 871 feet south of the Project site, and 2,475 east of the Project site

- **Schools:**
  - Bud Rank Elementary: 2,700 feet east of the Project East- Tract 6239

2.2 REGULATORY SETTING

Air quality within the project area is regulated by several jurisdictions including the EPA, ARB, and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

2.2.1 Federal

2.2.1.1 U.S. Environmental Protection Agency

At the federal level, the EPA has been charged with implementing national air quality programs. The 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 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 4.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the EPA established the NESHAPs. These are technology-based source-specific regulations that limit allowable emissions of HAPs. Among these sources include asbestos-containing building materials (ACBMs). NESHAPs include requirements pertaining to the inspection, notification, handling, and disposal of ACBMs associated with the demolition and renovation of structures.

2.2.2 State

2.2.2.1 California Air Resources Board

The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. 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. The CAAQS are summarized in Table 4.

Table 4 National and State Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS
Ozone	1 hour	0.09 ppm	-
	8 hours	0.070 ppm	0.070 ppm
CO	1 hour	20 ppm	35 ppm
	8 hours	9.0 ppm	9 ppm
NO_2	1 hour	0.18 ppm	0.100 ppm
	Annual Arithmetic Mean	0.030 ppm	0.053 ppm
SO_2	1 hour	0.25 ppm	0.075 ppm
	3 hours	-	-
	24 hours	0.040 ppm	0.014 ppm
	Annual Arithmetic Mean	-	0.030 ppm
PM_{10}	24 hours	50 µg/m^3	150 µg/m^3
	Annual Arithmetic Mean	20 µg/m^3	-
$PM_{2.5}$	24 hours	-	35 µg/m^3
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
Lead	30-day Average	1.5 µg/m^3	-
	Calendar Quarter	-	1.5 µg/m^3
	Rolling 3-month Average	-	0.15 µg/m^3
Visibility reducing particles (VRP)	8 hours	-	-
Sulfates	24 hours	25 µg/m^3	-
H_2S	1 hour	0.03 ppm (42 µg/m^3)	-
Vinyl chloride	24 hours	0.01 ppm 0.02 (26 µg/m^3)	-

Notes:
ppm = parts per million (concentration)
µg/m3 = micrograms per cubic meter
Annual = Annual Arithmetic Mean
30-day = 30-day average
Quarter = Calendar quarter
Source: CARB 2016c

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus 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% 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 CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB 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.

Assembly Bill 617

In response to AB 617 (C. Garcia, Chapter 136, Statutes of 2017), the CARB established the Community Air Protection Program. The Community Air Protection Program includes community air monitoring and community emissions reduction program's focus is to reduce exposure in communities most impacted by air pollution. The Legislature has appropriated funding to support early actions to address localized air pollution through targeted incentive funding to deploy cleaner technologies in these communities, as well as grants to support community participation in the AB 617 process. AB 617 also includes new requirements for accelerated retrofit of pollution controls on industrial sources, increased penalty fees, and greater transparency and availability of air quality and emissions data, which will help advance air pollution control efforts throughout the State.

Portable Equipment Registration Program

Owners or operators of portable engines and certain other types of equipment can register their units under the CARB's Statewide Portable Equipment Registration Program (PERP). PERP allows registered equipment to be operated throughout California without having to obtain individual permits from local air districts. To qualify, equipment must meet eligibility requirements, including applicable emissions standards.

Naturally-Occurring Asbestos Regulations

CARB has adopted two Airborne Toxic Control Measures (ATCMs) which regulates the control of Naturally Occurring Asbestos (NOA) associated with construction, surfacing, grading, mining, and quarrying activities. The NCUAQMD is responsible for enforcing Asbestos ATCMs. There are no known likely areas of NOA in the Project area (USGS 2011).

Regulatory Attainment Designations

Under the CCAA, CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The EPA designates areas for O_3, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

As discussed previously, the SJVAB is designated as nonattainment for the federal ozone and $PM_{2.5}$ standards. The SJVAB is nonattainment for State ozone, PM10, and $PM_{2.5}$ standards.

2.2.3 San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the proposed project is located. Responsibilities of the SJVAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA.

2.2.3.1 SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include but are not limited to the following:

Rule 4102 – Nuisance. The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials.

Rule 4601 – Architectural Coatings. The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling.

Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

Rule 4901 – Wood burning Fireplaces and Wood burning Heaters. The purpose of this rule is to limit emissions of carbon monoxide and particulate matter from wood burning fireplaces, wood burning heaters, and outdoor wood burning devices.

Regulation VIII – Fugitive PM10 Prohibitions. Rule 8011-8081 are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

Rule 9510 – Indirect Source Review. This rule reduces the impact of NOx and PM10 emissions from growth on the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through onsite mitigation, offsite District -administered projects, or a combination of the two. This project must comply with Rule 9510 because it would develop more than 50 residential units.

2.2.3.2 CEQA

The SJVAPCD has three roles under CEQA:

Lead Agency: responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.

Responsible Agency: The discretionary authority of a Responsible Agency is more limited than a Lead Agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the Lead Agency for preparation of environmental documents for land use projects that also have discretionary air quality permits unless no document is prepared by the Lead Agency and potentially significant impacts related to the permit are possible. The District comments on documents prepared by Lead Agencies to ensure that District concerns are addressed.

Commenting Agency: The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The SJVAPCD also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance as well as state regulations to control air pollution is an overall improvement in the Air Basin. In particular, the SJVAPCD's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.

2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

2.2.4 City of Clovis

The City of Clovis adopted its 2014 General Plan on August 25, 2014 (City of Clovis 2014). The City's applicable air quality goals and policies from the Air Quality Element and Circulation Element are listed below.

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
- **Policy 1.1: Land use and transportation.** Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
- **Policy 1.2: Sensitive land uses.** Prohibit the future siting of sensitive land uses within the distances of emission sources as defined by the California Air Resources Board, without sufficient mitigation.
- **Policy 1.3: Construction activities**. Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.

- **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
- **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
- **Policy 2.6: Innovative mitigation.** Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Circulation Element

- **Goal 1:** A context-sensitive and "complete streets" transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.
- **Policy 1.1: Multimodal network.** The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
- **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.
- **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
- **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
- **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
- **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
- **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in Urban Centers and new development 10 acres or larger.

- **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.

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3.0 GREENHOUSE GASES

3.1 ENVIRONMENTAL 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. GHGs, 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.

3.1.1 Greenhouse Gases

Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Primary GHGs attributed to global climate change, are discussed in the following subsections.

3.1.1.1 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 (EPA 2019b).

3.1.1.2 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. CH_4 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. The atmospheric lifetime of CH_4 is about 12 years (EPA 2019b).

3.1.1.3 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 (EPA 2017b).

3.1.1.4 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) (EPA 2017b).

3.1.1.5 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 (EPA 2017b).

3.1.1.6 Nitrogen Trifluoride

Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. NF_3 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 AB 32 (Section 38505 Health and Safety Code).

3.1.1.7 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 (EPA 2017b).

3.1.1.8 Black Carbon

Black carbon is the most strongly light-absorbing component of 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, including programs that target reducing PM from diesel engines and burning activities (CARB 2013).

3.1.2 Global Warming Potential

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).

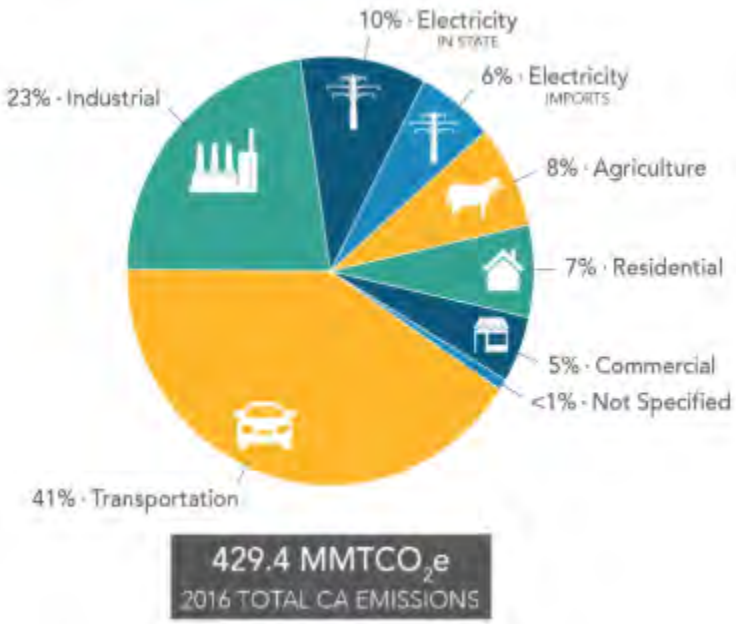
Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Based on a 100-year time horizon, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHGs with high GWP include NF_3, SF_6, PFCs, and black carbon.

3.1.3 Sources of Greenhouse Gas 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.

California's GHG emissions inventory is depicted in Figure 1.

Figure 1 GHG Emissions by Economic Sector



Source: CARB 2018b

In 2015, GHG emissions within California totaled 429.4 million metric tons (MMT) of CO_2e. Within California, the transportation sector is the largest contributor, accounting for approximately 41% of the total statewide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23%. Electricity generation totaled roughly 16% (CARB 2018b).

3.1.4 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% 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. 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.

3.2 REGULATORY SETTING

3.2.1 Federal

3.2.1.1 U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

The U.S. Supreme Court has held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al*., twelve states and cities, including California, together with several environmental organizations sued to require the EPA to regulate GHGs as pollutants under the FCAA (127 S. Ct. 1438 (2007)). The Supreme Court ruled that GHGs fit within the FCAA's definition of a pollutant and the EPA had the authority to regulate GHGs.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the FCAA:

- **Endangerment Finding:** The current and projected concentrations of the six key GHGs - 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 combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

In collaboration with the National Highway Traffic Safety Administration, the EPA adopted GHG emission standards for light-duty vehicles in May 2010 and for heavy-duty vehicles in August of 2011. In 2012, the agencies jointly adopted more stringent Phase 2 standards for light duty cars and trucks, which would cover model years 2017 through 2025. In August of 2016, the agencies adopted more stringent Phase 2 standards for medium- and heavy-duty vehicles, which would cover model years 2018 through 2027 for certain trailers and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

President Obama and the EPA announced the Clean Power Plan in August of 2015. In 2030, the Clean Power Plan would cut carbon pollution from power plants by 32 percent below 2005 levels and increase renewable energy generation percent to nearly 20 percent of all power supplied. By comparison, in 2015, renewable energy accounted for about 13% of electricity generation. However, on February 9, 2016, the U.S. Supreme Court stayed implementation of the Clean Power Plan pending judicial review and on

March 28, 2017, the Executive Order on Energy Independence (EO 13783) was signed and called for a review of the Clean Power Plan (USEPA 2018).

3.2.1.2 Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, the EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), that required the EPA to develop "…mandatory reporting of GHGs above appropriate thresholds in all sectors of the economy…." The Reporting Rule applies to most entities that emit 25,000 metric tons of CO_2e ($MTCO_2e$) or more per year. Since 2010, facility owners must submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also mandates recordkeeping and administrative requirements in order for the EPA to verify annual GHG emissions reports.

3.2.2 State

3.2.2.1 Assembly Bill 1493 (Pavley)

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the CARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley Standards. 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 CCAA, to allow the state to require reduced tailpipe emissions of CO_2. In late 2007, the 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 EPA related to this denial.

In January 2009, President Obama instructed the 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 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.

3.2.2.2 Senate Bills 1078 and 107 and Executive Orders S-14-08 and S-21-09 (California Renewables Portfolio Standard)

Senate Bill (SB) 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

In November 2008, then-Governor Schwarzenegger signed Executive Order (EO) S-14-08, which expanded the state's Renewable Portfolio Standard to 33% renewable power by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing E.O. S-21-09, which directs the CARB under its AB 32 authority to enact regulations to help the state meet its Renewable Portfolio Standard goal of 33% renewable energy by 2020.

The 33% by 2020 goal was codified in April 2011 with SB X1-2, which was signed by Governor Edmund G. Brown, Jr. This new Renewable Portfolio Standard (RPS) preempts the CARB 33% Renewable Electricity Standard and applies to all electricity retailers in the state, including publicly owned utilities (POUs), investor-owned utilities, electricity service providers, and community choice aggregators. Consequently, Pacific Gas & Electric (PG&E), who would be the electricity provider for the proposed projects, must meet the 33% goal by 2020. All of these entities must adopt the new RPS goals of 20% of retail sales from renewables by the end of 2013 and 25% by the end of 2016, with the 33% requirement being met by the end of 2020.

3.2.2.3 Executive Order No. S-3-05

EO 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 EO established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80% below the 1990 level by 2050.

The EO directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG 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 EO, 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.

3.2.2.4 Executive Order No. B-30-15

On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050 and directs the CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other

provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the Executive Order.

3.2.2.5 Executive Order No. S-01-07

The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels and was submitted to CARB for consideration as an "early action" item under AB 32. The CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015 (CARB 2015).

3.2.2.6 Executive Order No. S-13-08

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

3.2.2.7 Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 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, N_2O, HFCs, perfluorocarbons, NF_3, 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 CARB 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 CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB 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 (CARB 2017b).

3.2.2.8 Climate Change Scoping Plan

In October 2008, CARB 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 $MTCO_2e$, or approximately 30% from the state's projected 2020 emissions level of 596 $MMTCO_2e$ (million metric tons of carbon dioxide equivalents) under a business-as-usual scenario (this is a reduction of 42 $MMTCO_2e$, or almost 10%, from 2002– 2004 average emissions). The Scoping Plan also includes CARB-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% reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

A key component of the Scoping Plan is the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33% by year 2020, resulting 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 states 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. Meanwhile, CARB is also developing an additional protocol for community emissions. CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 $MMTCO_2e$ will be achieved associated with implementation of Senate Bill 375,

which is discussed further below. The Climate Change Proposed Scoping Plan was approved by CARB on December 11, 2008.

The First Update to the Climate Change Scoping Plan was approved by CARB on May 22, 2014. CARB adopted the 2017 Climate Change Scoping Plan Update in November 2017 to meet the GHG reduction requirement set forth in SB 32. On December 14, 2017, CARB approved the Second Update to the Climate Change Scoping Plan, the 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target.

3.2.2.9 Senate Bill 32

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from year 2020 to year 2030. This new emission-reduction target of 40% below 1990 levels by 2030 is intended to promote further GHG-reductions in support of the state's ultimate goal of reducing GHG emissions by 80% below 1990 levels by 2050. SB 32 also directs the CARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target.

3.2.2.10 Senate Bill 375 (Sustainable Communities and Climate Protection Act)

SB 375 supports the state's climate action goals to reduce GHG emissions through coordinated transportation and land use planning with the goal of developing more sustainable communities. Under SB 375, CARB sets regional targets for GHG emissions reductions associated with passenger vehicle use. Each of California's metropolitan planning organizations must prepare a "sustainable communities strategy" (SCS) as an integral part of its regional transportation plan (RTP). The SCS contains land use, housing, and transportation strategies that, if implemented, would allow the region to meet its GHG emission reduction targets. The Sustainable Communities Act also establishes incentives to encourage local governments and developers to implement the identified GHG- reduction strategies.

3.2.2.11 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% 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.

3.2.2.12 Assembly Bill 398

The Governor signed AB 398 on July 25, 2017 to extend the Cap and Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap and Trade Program.

3.2.2.13 California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 24. California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Title 20. California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

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

3.2.3 San Joaquin Valley Air Pollution Control District

3.2.3.1 Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal, called the Climate Change Action Plan, to begin a public process to bring together stakeholders, land use agencies, environmental groups, and business groups, and to conduct public workshops to develop comprehensive policies for

CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Governing Board's consideration. The Climate Change Action Plan contained the following goals and actions:

Goals

1. Assist local land-use agencies with California Environmental Quality Act (CEQA) issues relative to projects with greenhouse gas emissions increases.

2. Assist Valley businesses in complying with mandates of AB 32 (Global Warming Solutions Act of 2006).

3. Ensure that climate protection measures do not cause increases in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions

1. Authorize the Air Pollution Control Officer to develop greenhouse gas significance threshold(s) or other mechanisms to address CEQA projects with greenhouse gas emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.

2. Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary greenhouse gas reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.

3. Authorize the Air Pollution Control Officer to enhance the District's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB 32 emission reporting requirements to submit simultaneous streamlined reports to the District and the state of California with minimal duplication.

4. Authorize the Air Pollution Control Officer to develop and administer voluntary greenhouse gas emission reduction agreements to mitigate proposed greenhouse gas increases from new projects.

5. Direct the Air Pollution Control Officer to support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

3.2.3.2 SJVAPCD CEQA GHG Guidance

On December 17, 2009, the SJVAPCD Governing Board adopted: "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" and the policy: "District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving

as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found that the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified Final CEQA document.

For non-exempt projects, those projects for which there is not applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency would evaluate the project against performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce GHG emissions. The Best Performance Standards have not yet fully been established, though they must be designed to effect a 29-percent reduction when compared with the "business-as-usual" projections identified in ARB's AB 32 Scoping Plan.

"Business-as-usual" is the emissions occurring in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. These standards thus would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating Best Performance Standards would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, Best Performance Standards means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified Best Performance Standards for the following sources: boilers; dryers and dehydrators; oil and gas extraction, storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

3.2.4 City of Clovis

The City of Clovis does not currently have formal greenhouse gas emissions reduction plans or recommended emissions thresholds for determining significance associated with greenhouse gas emissions from development projects.

City of Clovis General Plan

The 2014 General Plan includes the following applicable goals and policies related to improving air quality that may also co-benefit climate change impacts (City of Clovis 2014) :

Air Quality Element

- **Goal 1:** A local environment that is protected from air pollution and emissions.
- **Policy 1.1: Land use and transportation.** Reduce greenhouse gas and other local pollutant emissions through mixed use and transit-oriented development and well-designed transit, pedestrian, and bicycle systems.
- **Policy 1.3: Construction activities.** Encourage the use of best management practices during construction activities to reduce emissions of criteria pollutants as outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD).
- **Policy 1.8: Trees.** Maintain or plant trees where appropriate to provide shade, absorb carbon, improve oxygenation, slow stormwater runoff, and reduce the heat island effect.
- **Goal 2:** A region with healthy air quality and lower greenhouse gas emissions.
- **Policy 2.1: Regional coordination.** Support regional efforts to reduce air pollution (criteria air pollutants and greenhouse gas emissions) and collaborate with other agencies to improve air quality at the emission source and reduce vehicle miles traveled.
- **Policy 2.2: Cross-jurisdictional issues.** Collaborate with regional agencies and surrounding jurisdictions to address cross-jurisdictional transportation and air quality issues.
- **Policy 2.6: Innovative mitigation**. Encourage innovative mitigation measures to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.

Open Space and Conservation Element

- **Policy 3.5: Energy and water conservation.** Encourage new development and substantial rehabilitation projects to exceed energy and water conservation and reduction standards set in the California Building Code.
- **Policy 3.6: Renewable Energy.** Promote the use of renewable and sustainable energy sources to serve public and private sector development.
- **Policy 3.7: Construction and design.** Encourage new construction to incorporate energy efficient building and site design strategies.

Circulation Element

- **Goal 1:** A context-sensitive and “complete streets” transportation network that prioritizes effective connectivity and accommodates a comprehensive range of mobility needs.

- **Policy 1.1: Multimodal network**. The City shall plan, design, and maintain the transportation network to promote safe and convenient travel for all users: pedestrian, bicyclists, transit riders, freight, and motorists.
- **Policy 1.2: Transportation decisions.** Decisions should balance the comfort, convenience, and safety of pedestrian, bicyclists, and motorists.
- **Policy 1.4: Jobs and housing.** Encourage infill development that would provide jobs and services closer to housing, and vice versa, to reduce citywide vehicle miles traveled and effectively utilize the existing transportation infrastructure.
- **Policy 1.5: Neighborhood connectivity.** The transportation network shall provide multimodal access between neighborhoods and neighborhood-serving uses (educational, recreational, or neighborhood commercial uses).
- **Goal 3:** A multimodal transportation network that is safe and comfortable in the context of adjacent neighborhoods.
- **Policy 3.11: Right-of-way design.** Design landscaped parkways, medians, and right-of-ways as aesthetic buffers to improve the community's appearance and encourage non-motorized transportation.
- **Goal 5:** A complete system of trails and pathways accessible to all residents.
- **Policy 5.1: Complete street amenities.** Upgrade existing streets and design new streets to include complete street amenities, prioritizing improvements to bicycle and pedestrian connectivity or safety (consistent with the Bicycle Transportation Master Plan and other master plans).
- **Policy 5.3: Pathways.** Encourage pathways and other pedestrian amenities in Urban Centers and new development 10 acres or larger.
- **Policy 5.5: Pedestrian access.** Require sidewalks, paths, and crosswalks to provide access to schools, parks, and other activity centers to provide general pedestrian connectivity throughout the city.

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4.0 MODELING PARAMETERS AND ASSUMPTIONS

4.1 MODEL SELECTION

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, CalEEMod identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

CalEEMod was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

CalEEMod is a comprehensive tool for quantifying air quality impacts from land use projects located throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as preparing CEQA or National Environmental Policy Act documents, conducting pre-project planning, and, verifying compliance with local air quality rules and regulations, etc.

CalEEMod version 2016.3.2 was used to estimate construction and operational impacts of the Project.

4.2 AIR POLLUTANTS AND GHGS ASSESSED

4.2.1 Criteria Air Pollutants Assessed

The following criteria air pollutants are assessed in this analysis: ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$.

Note that the proposed Project would emit ozone precursors ROG and NO_X. However, the proposed Project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors.

4.2.2 GHGs Assessed

This analysis is restricted to GHGs identified by AB 32, which include CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and NF_3. The proposed Project would generate a variety of GHGs, including several defined by AB 32 such as CO_2, CH_4 and N_2O.

Certain GHGs defined by AB 32 would not be emitted by the project. PFCs, SF_6, and NF_3 are typically used in industrial applications, none of which would be used by the proposed Project. Therefore, it is not anticipated that the proposed Project would emit those GHGs.

GHG emissions associated with the proposed Project construction, and future operations were estimated using CO_2e emissions as a proxy for all GHG emissions. In order to obtain the CO_2e, an individual GHG is multiplied by its GWP. The GWP designates on a pound for pound basis the potency of the GHG compared to CO_2.

4.3 ASSUMPTIONS

4.3.1 Construction Modeling Assumptions

4.3.1.1 Construction Schedule

Phase 1 of Project East- Tract 6239 (68 dwelling units) would begin in September 2019 and be completed by March 2020. Phase 2 of Project East- Tract 6239 (94 dwelling units) would begin in April 2020 and be completed in March 2021. Project West- Tract 6264 would begin construction in June 2020 and be completed by January 2021. Table 5 provides the anticipated construction schedule and represents a "worst-case" analysis scenario. Construction occurring any time after September 2020 would result in decreased emissions since emission factors for construction equipment decrease as the analysis year is pushed out due to increasing regulation, such as the CARB In-Use Off-Road Diesel-Fueled Fleets regulation requiring the use of cleaner construction equipment fleets. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required per CEQA guidelines.

Table 5 Construction Schedule

Project	Phase	Anticipated Phase Start Date	Anticipated Phase End Date	Total Number of Days
Project East – Phase 1 Tract 6239	Site Preparation	9/23/2019	10/4/2019	10
	Site Grading	10/5/2019	11/15/2019	30
	Building Construction	11/16/2019	2/28/2020	75
	Paving	2/29/2020	3/13/2020	10
	Architectural Coating	3/14/2020	3/27/2020	10
Project East – Phase 2 Tract 6239	Site Preparation	4/6/2020	5/1/2020	20
	Site Grading	5/2/2020	7/3/2020	45
	Building Construction	7/4/2020	12/11/2020	115
	Paving	12/12/2020	1/29/2021	35
	Architectural Coating	1/30/2021	3/19/2021	35
Project West –Tract 6264	Site Preparation	6/1/2020	6/5/2020	5
	Site Grading	6/6/2020	6/17/2020	8
	Building Construction	6/18/2020	11/25/2020	115

	Paving	11/26/2020	12/21/2020	18
	Architectural Coating	12/22/2020	1/14/2021	18
Source: Granville Homes 2019, personal communication.				

4.3.1.2 Construction Off-Road Equipment

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil.

The CalEEMod default estimated equipment was used. The estimate is based on the proposed project size. The off-road construction equipment list is shown in Table 6. The activity for construction equipment is based on the horsepower and load factors of the equipment. In general, the horsepower is the power of an engine—the greater the horsepower, the greater the power. The load factor is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity.

Table 6 Off-Road Construction Equipment

Project	Phase	Equipment	Unit Amount	Hours Per Day	Horsepower	Load Factor
Project East – Phase 1 Tract 6239	Site Preparation	Rubber Tired Dozers	3	8	247	0.40
		Tractors/Loaders/Backhoes	4	8	97	0.37
	Site Grading	Excavators	2	8	158	0.38
		Graders	1	8	187	0.41
		Rubber Tired Dozers	1	8	247	0.40
		Scrapers	2	8	367	0.48
		Tractors/Loaders/Backhoes	2	8	97	0.37
	Building Construction	Cranes	1	7	231	0.29
		Forklifts	12	8	89	0.20
		Generator Sets	1	8	84	0.74
		Tractors/Loaders/Backhoes	12	7	97	0.37
		Welders	4	8	46	0.45
	Paving	Pavers	4	8	130	0.42
		Paving Equipment	4	8	132	0.36
		Rollers	4	8	80	0.38
	Architectural Coating	Air Compressors	2	8	78	0.48
		Rubber Tired Dozers	3	8	247	0.40

Project East – Phase 2 Tract 6239	Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
	Site Grading	Excavators	2	8	158	0.38
		Graders	1	8	187	0.41
		Rubber Tired Dozers	1	8	247	0.40
		Scrapers	2	8	367	0.48
		Tractors/Loaders/Backhoes	2	8	97	0.37
	Building Construction	Cranes	1	7	231	0.29
		Forklifts	12	8	89	0.20
		Generator Sets	1	8	84	0.74
		Tractors/Loaders/Backhoes	12	7	97	0.37
		Welders	4	8	46	0.45
	Paving	Pavers	2	8	130	0.42
		Paving Equipment	2	8	132	0.36
		Rollers	2	8	80	0.38
	Architectural Coating	Air Compressors	1	6	78	0.48
Project West – Tract 6264	Site Preparation	Rubber Tired Dozers	3	8	247	0.40
		Tractors/Loaders/Backhoes	4	8	97	0.37
	Grading	Excavators	1	8	158	0.38
		Graders	1	8	187	0.41
		Rubber Tired Dozers	1	8	247	0.40
		Tractors/Loaders/Backhoes	3	8	97	0.37
	Building Construction	Cranes	1	7	231	0.29
		Forklifts	6	8	89	0.20
		Generator Sets	1	8	84	0.74
		Tractors/Loaders/Backhoes	6	7	97	0.37
		Welders	2	8	46	0.45
	Paving	Pavers	2	8	130	0.42
		Paving Equipment	2	8	132	0.36
		Rollers	2	8	80	0.38
	Architectural Coating	Air Compressors	1	6	78	0.48

Source: Stantec Consulting Services Inc. CalEEMod 2016.3.2

4.3.1.3 On-Road Construction-Related Vehicle Trips

Off-site construction emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$). Table 7 provides a summary of the construction-related vehicle trips. CalEEMod default values were used to estimate the number of construction-related vehicle trips.

CalEEMod quantifies the number of construction workers by multiplying 1.25 times the number of pieces of equipment for all phases (except Building Construction and Architectural Coating). For the Building Construction, the number of workers is derived from a study conducted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) which determined the number of workers needed for various types of land uses and corresponding project size. The number of vendor trips during the Building Construction phase is also derived from a study conducted by the SMAQMD. The SMAQMD trip survey during construction counted cement and water trucks as vendor trips (instead of counting them as off-road vehicle trips) and these trip rates were incorporated into the calculations for the Building Construction phase. The default values for hauling trips are based on the assumption that a truck can haul 20 tons (or 16 cubic yards) of material per load. If one load of material is delivered, CalEEMod assumes that one haul truck importing material will also have a return trip with an empty truck (e.g., 2 one-way trips).

The fleet mix for worker trips is light-duty passenger vehicles to light-duty trucks. The vendor trips fleet mix is composed of a mixture of medium and heavy-duty diesel trucks. The hauling trips are assumed to be 100% heavy-duty diesel truck trips.

CalEEMod default trip lengths were used for the worker (10.8 miles), vendor (7.3 miles), and hauling trips (20 miles).

Table 7 Construction-Related Vehicle Trips

Project	Phase Name	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Project East-Phase 1 Tract 6239	Site Preparation	18	0	0	10.8	7.3	20
	Grading	20	0	0	10.8	7.3	20
	Building Construction	24	7	0	10.8	7.3	20
	Paving	15	0	0	10.8	7.3	20
	Architectural Coating	5	0	0	10.8	7.3	20
Project East-Phase 2 Tract 6239	Site Preparation	18	0	0	10.8	7.3	20
	Grading	20	0	0	10.8	7.3	20
	Building Construction	34	10	0	10.8	7.3	20
	Paving	15	0	0	10.8	7.3	20
	Architectural Coating	7	0	0	10.8	7.3	20
Project West – Tract 6264	Site Preparation	18	0	0	10.8	7.3	20
	Grading	15	0	0	10.8	7.3	20

	Building Construction	13	4	0	10.8	7.3	20
	Paving	15	0	0	10.8	7.3	20
	Architectural Coating	3	0	0	10.8	7.3	20
Source: Stantec Consulting Services Inc., CalEEMod 2016.3.2							

4.3.2 Operational Modeling Assumptions

Operational emissions are those emissions that occur during operation of the proposed Project. The sources are summarized below.

4.3.2.1 Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the proposed project site. The trip generation rate from the Traffic Study was used for the project.

Table 8 Trip Generation Rates

Land Use Type	Size Dwelling Unit (du)	Weekday Rate/du	Saturday Rate/du	Sunday Rate/du
Single-Family Detached Housing (ITE 210)	199	9.44	9.54	8.55

Types of Vehicle Trips

Primary trips are trips are specifically made to the Project site and represent new vehicle trips to the area. A pass-by trip accounts for vehicles already on the roadway network that stop at the Project site as they pass-by; the pass-by trips are existing vehicle trips in the community. Diverted trips represent new trips to the site and adjacent streets, but not to the area. CalEEMod default trip type percentages were used – 86 percent primary, 11 percent diverted, and 3 percent pass-by.

Trip Lengths

The CalEEMod default trip lengths for an urban setting in Fresno County were used in this analysis. Residentiall trip types are defined as home to work (H-W), home to shopping (H-S), and home to other (H-O). The CalEEMod default trip lengths of 10.8 miles for H-W, 7.3 for H-S, and 7.5 for H-O were used.
Vehicle Fleet Mix

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed Project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline- and diesel-powered vehicles). The SJVAPCD default residential fleet mix for the operational years were used.

Area Sources

Area sources consist of hearths, consumer products, area architectural coatings, and landscaping emissions.

Consumer Products

Consumer products are various solvents used in non-industrial applications that emit ROGs during their product use. These typically include cleaning supplies, kitchen aerosols, cosmetics and toiletries. The default CalEEMod value was used for this Project.

Architectural Coatings (Painting)

Paints release VOC emissions. The homes would be repainted on occasion. CalEEMod defaults were used for this purpose.

Landscaping Emissions

CalEEMod estimated a total of 180 days for which landscaping equipment would be used to estimate potential emissions for the proposed Project.

4.3.2.2 Energy Use

The emissions associated with the home electricity and natural gas usage are estimated based on the land use type and size. The electricity energy use is in units of kilowatt hours per size metric for each land use type. Natural gas use is in units of a thousand British Thermal Units per size metric for each land use type. CalEEMod default values for single family homes were used.

4.3.2.3 Water and Wastewater Use

Supplying and treating water for the homes generates GHG emissions. Depending on the specific water supply used or treatment method used these numbers can vary over a wide range. Supplying water is bringing the water from its primary source such as the ground, river, or snowpack to the treatment plant. Distributing the water is bringing the water from the treatment plant to the end users. The electricity intensity factors are multiplied by the utility GHG emissions intensity factors for the GHGs and are classified as indirect emissions.

Wastewater may also have direct emissions of GHGs. These depend on the type of wastewater treatment system (e.g., septic, aerobic or lagoons) used and therefore the wastewater treatment type percentages are variables.

4.3.2.4 CalEEMod default values for single family homes were used. Solid Waste

GHG emissions are associated with the disposal of solid waste generated by the proposed Project into landfills. The CalEEMod default value for single family homes was used.

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5.0 AIR QUALITY IMPACT ANALYSIS

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

5.1 CEQA GUIDELINES

According to the CEQA Guidelines' Appendix G Environmental Checklist, the following questions are analyzed and evaluated to determine whether impacts to air quality are significant environmental effects.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the Project:

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

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?

5.1.1 Thresholds of Significance

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, the SJVAPCD recommends that its quantitative air pollution thresholds (shown in Table 9) be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

Table 9 SJVAPCD Significance Thresholds

Pollutant	Significance Threshold	
	Construction Emissions (tons/year)	Operational Emission (tons/year)
CO	100	100
NO_X	10	10
ROGs	10	10
SO_X	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15
Source: SJVAPCD 2015		

5.2 AIR IMPACT ANALYSIS

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the Project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI does not provide specific guidance on analyzing conformity with the Air Quality Plan (AQP). Therefore, this document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.

2. Will the project conform to the assumptions in the AQPs?

3. Will the project comply with applicable control measures in the AQPs?

The use of the criteria listed above is a standard approach for CEQA analysis of projects in the SJVAPCD's jurisdiction, as well as within other air districts, for the following reasons:

- Significant contribution to existing or new exceedances of the air quality standards would be inconsistent with the goal of attaining the air quality standards.

- Air Quality Plan (AQP) emissions inventories and attainment modeling are based on growth assumptions for the area within the SJVAPCD's jurisdiction.

- AQPs rely on a set of air district-initiated control measures as well as implementation of federal and state measures to reduce emissions within their jurisdictions, with the goal of attaining the air quality standards.

AQPs are plans for reaching attainment of air quality standards. The assumptions, inputs, and control measures are analyzed to determine if the SJVAB can reach attainment for the ambient air quality standards. In order to show attainment of the standards, the SJVAPCD analyzes the growth projections in the valley, contributing factors in air pollutant emissions and formations, and existing and adopted emissions controls. The SJVAPCD then formulates a control strategy to reach attainment that includes both State and SJVAPCD regulations and other local programs and measures. The applicable AQPs include the 2016 8-Hour Ozone Plan which contains measures to achieve reductions in emissions of ozone precursors and sets plans towards attainment of ambient ozone standards by 2031 and the 2018, 2016, 2015, 2012, and 2008 $PM_{2.5}$ Plans to address multiple $PM_{2.5}$ air quality standards and attainment deadlines.

Contribution to Air Quality Violations

A measure of determining if the Project is consistent with the air quality plans is if the Project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and PM_{10}, if Project-generated emissions of either of the ozone precursor pollutants (ROG and NO_x), PM_{10}, or $PM_{2.5}$ would exceed the SJVAPCD's significance thresholds, then the Project would be considered to conflict with the attainment plans.

Regional emissions

Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the Project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from Project construction and operation are also assessed using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during Project construction and operation are ROG, NO_x, PM_{10}, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for ROG and NO_x; SO_x, CO, PM_{10}, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO_x emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The SJVAB often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The SJVAB also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial Project emissions may contribute to an exceedance for these pollutants. The SJVAPCD's

annual emission significance thresholds used for the Project define substantial contribution both operational and construction emissions are provided in Table 9.

Construction Emissions

Construction emissions associated with the Project are shown in Table 10. For assumptions in estimating the emissions, please refer to Section 4.0 Modeling Parameters and Assumptions. As shown in Table 10, the emissions are below the significance thresholds and, therefore, are less than significant on a Project basis. It should be noted that the emissions shown do not include reductions associated with compliance with SJVAPCD Rule 9510, which would reduce NOx and PM10 emissions by 20 percent and 45 percent respectively.

Table 10 Summary of Construction-Generated Emissions of Criteria Air Pollutants – Unmitigated

Year	Emissions (Tons/Year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
2019 – Project East – Tract 6239	0.21	1.98	1.46	<0.01	0.34	0.21
2020 – Project East Tract 6239	1.33	5.59	5.32	<0.01	0.75	0.51
2020 – Project West – Tract 6264	0.36	2.113	1.9076	<0.01	0.20	0.16
Subtotal for 2020	1.69	7.70	7.23	0.01	0.95	0.67
2021 – Project East Tract 6239	0.71	0.16	0.1927	<0.01	0.01	<0.01
2021 – Project West – Tract 6264	0.15	<0.01	.00947	<0.01	<0.01	<0.01
Subtotal for 2021	0.86	0.17	0.20217	<0.01	0.01	<0.01
Significance Thresholds	10	10	100	27	15	15
Any Year Exceed Significance Thresholds?	No	No	No	No	No	No
Notes: Source: Stantec Consulting Services, Inc., CalEEMod 2016.3.2						

Operations

Operational emissions occur over the lifetime of the Project and are from two main sources: area sources and motor vehicles, or mobile sources. Operational emissions are shown in Table 11. The SJVAPCD considers construction and operational emissions separately when making significance determinations; however, it is important to note that the operational emissions in 2021 combined with the construction emissions would not exceed the SJVAPCD thresholds of significance.

For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions output for Project operation at full buildout for 2021 are summarized in Table 11. As shown in Table 11, the operational emissions would be less than the thresholds of significance for all criteria air pollutants. The impact is less than significant.

Table 11 Summary of Operational Emissions of Criteria Air Pollutants – Mitigated

Source	Emissions (tons/year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Area	1.79	0.15	1.54	<0.01	0.02	0.02
Energy	0.03	0.24	0.10	<0.01	0.02	0.02
Mobile	0.64	2.33	7.24	0.02	2.06	0.56
2021 Total	**2.46**	**2.72**	**8.88**	**0.02**	**2.09**	**0.60**
Significance Thresholds	10	10	100	27	15	15
Exceed Significance Thresholds?	No	No	No	No	No	No

Notes:

Emissions were quantified using CalEEMod, version 2016.3.2 based on project details and estimated operating year for the proposed project. Totals may not sum due to rounding.

Mitigated emissions in CalEEMod accounts for locational features and regulations.

Source: Stantec Consulting Services Inc., CalEEMod 2016.3.2

Localized Impacts

Emissions occurring at or near the Project have the potential to create a localized impact also referred to as an air pollutant hotspot. Localized emissions are considered significant if when combined with background emissions, they would result in exceedance of any health-based air quality standard. In locations that already exceed standards for these pollutants, significance is based on a significant impact level (SIL) that represents the amount that is considered a cumulatively considerable contribution to an existing violation of an air quality standard. The pollutants of concern for localized impact in the SJVAB are NO_2, SO_x, and CO.

The SJVAPCD has provided guidance for screening localized impacts in the GAMAQI that establishes a screening threshold of 100 pounds per day of any criteria pollutant. If a project exceeds 100 pounds per day of any criteria pollutant, then ambient air quality modeling would be necessary. If the Project does not

exceed 100 pounds per day of any criteria pollutant, then it can be assumed that it would not cause a violation of an ambient air quality standard.

Construction: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2

Local construction impacts would be short-term in nature lasting only during the duration of construction. Because of the short duration and limited amount of construction anticipated for the Project, application of best management practices through compliance with Regulation VIII Fugitive Dust Prohibitions to minimize construction emissions, and levels of emissions less than the SJVAPCD's emission significance thresholds, localized construction concentrations are considered less than significant. It should also be noted that the on-site construction emissions would be less than 100 pounds per day for each of the criteria pollutants, as shown in Table 12 below. Phase 1 and 2 of Project East- Tract 6239 would not overlap construction schedules in 2020, however there would be some overlap between Phase 2 of Project East-Tract 6239 and Project West – Tract 6264. It should be noted that the estimates below do not include reductions associated with Rule 9510 compliance, which would reduce NOx and PM10 emissions. Based on the SJVAPCD's guidance the construction emissions would not cause an ambient air quality standard violation. Impacts would be less than significant.

Operation: Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2

Localized impacts could occur in areas with a single large source of emissions such as a power plant or with multiple sources concentrated in a small area such as a distribution center. Operational modeling of on-site emissions for the Project indicate that the Project would not exceed 100 pounds per day for each of the criteria pollutants, as shown in Table 12 below. Therefore, based on the SJVAPCD's guidance, the operational emissions would not cause an ambient air quality standard violation. Impacts would be less than significant.

Table 12 Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2 for Construction and Operation

Source	Emissions (pounds per day)			
	NOx	CO	PM_{10}	$PM_{2.5}$
2019 Construction[1]	58.24	52.38	20.60	12.17
2020 – Project East Tract 6239 (Phase 1)[1]	53.09	51.53	3.55	3.15
2020 – Project East Tract 6239 (Phase 2)[1]	53.49	51.87	20.41	11.99
2020 – Project West – Tract 6264[1]	42.47	28.58	20.41	11.99
Subtotal 2020	95.96	80.45	40.82	23.98
2021 – Project East Tract 6239[1]	12.96	15.03	0.80	0.66
2021 – Project West – Tract 6264[1]	1.53	1.89	0.12	0.10
Subtotal 2021	14.49	16.92	0.92	0.76
Operation[1]	18.26	59.46	12.35	3.71
Significance Thresholds	100	100	100	100
Exceed Significance Thresholds?	No	No	No	No

Notes:

1. Maximum daily construction and operational emissions reflect emissions reported for Winter as it has higher emissions than summer.

Source: Stantec Consulting Services Inc., CalEEMod 2016.3.2

Operational CO Hotspot

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of roadways in the project vicinity.

The Project would construct two subdivisions, which would add traffic to the local adjacent roadways. However, the local roadways are not identified as operating over acceptable conditions under existing and future buildout conditions according the City of Clovis' General Plan. In addition, because CO is not a pollutant of concern it is not measured locally, the last measurement reported was in 2012 with the highest background 24-hour concentration of 2.22 ppm, 75 percent lower than the state ambient air quality standard of 9.00 ppm. Therefore, the Project would not significantly contribute to an exceedance of state or federal CO standards.

Consistency with Assumptions in AQPs

The primary way of determining consistency with the AQPs' assumptions is determining consistency with the applicable General Plan to ensure that the project's population density and land use are consistent with the growth assumptions used in the AQPs for the SJVAB.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth and designates locations for land uses to regulate growth. The Fresno Council of Governments (Fresno COG) uses the growth projections and land use information in adopted general plans, among other sources, to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to the District to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQPs are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards based on these growth and emission estimates.

The applicable General Plan for the project is the City of Clovis General Plan, which was adopted in 2014, prior to the SJVAPCD's adoption of the applicable AQPs. The General Plan is amended up to four times per year to allow changes to the planned land use and other plan elements as needed to accommodate development proposals that are not currently consistent with the General Plan. The changes in land use are then incorporated into the modeling assumptions of the regional transportation model on a periodic basis. Therefore, if the project's VMT are consistent with the General Plan, then the project is automatically consistent with the growth assumptions used in the applicable AQPs. The General Plan and Development Code Update Draft Program Environmental Impact Report (PEIR) found that the plan had significant and unavoidable air quality impacts because buildout of the plan area would exceed SJVAPCD regional significance thresholds. The City of Clovis adopted a Statement of Overriding Considerations (SOC). Projects that are consistent with General Plan policies and comply with mitigation measures included in the General Plan and Development Code Update PEIR are able to rely on the SOC finding to address cumulative air quality impacts. The proposed project would comply with all applicable policies and mitigation measures. Therefore, the impact would be less than significant.

Control Measures

The AQP contains several control measures, which are enforceable requirements through the adoption of rules and regulations. A detailed description of rules and regulations that apply to this Project is provided in the Regulatory Setting. The Project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

Conclusion

The Project would not conflict with or obstruct implementation of the applicable AQPs.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-2	**Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?**

Impact Analysis

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

1. Regional analysis: emissions of nonattainment pollutants must be below the SJVAPCD's regional significance thresholds. This is an approach recommended by the SJVAPCD in its GAMAQI.

2. Summary of projections: the project must be consistent with current air AQPs including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

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

Step 1: Regional Analysis

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

The SJVAB is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if the Project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the Project exceeds the regional threshold for NO_X or ROG, then it follows that the Project would contribute to a cumulatively considerable impact for ozone.

Regional emissions include those generated from all onsite and offsite activities. Regional significance thresholds have been established by the SJVAPCD because emissions from projects in the SJVAB can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the SJVAB region with regional emissions in excess of any of the thresholds presented previously are considered to have a significant regional air quality impact.

The criteria pollutant emissions analysis, as shown in Impact AIR-1, assessed whether the Project would exceed the SJVAPCD's thresholds of significance. As shown in Table 10 and Table 11, criteria pollutant emissions would not exceed any threshold of significance during Project construction or operation. Therefore, the combination of unmitigated Project emissions with the criteria pollutants from other sources within the SJVAB would not cumulatively contribute to a significant impact according to this criterion.

Step 2: Plan Approach

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

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

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The SJVAB is in nonattainment for ozone and particulate matter (PM_{10} and $PM_{2.5}$), which means that concentrations of these pollutants currently exceed the applicable ambient air quality standards.

Cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the SJVAB, because that is the area in which the air pollutants generated by the sources within the SJVAB circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of

ambient air quality standards. While the SJVAPCD does not have direct authority over land use decisions, it is recognized that changes in land use and circulation planning would help the SJVAB achieve clean air mandates. The SJVAPCD evaluated emissions from land uses and transportation in the entire SJVAB when it developed its attainment plans.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the Project complies with the requirements in a previously approved plan or mitigation program.

As discussed in impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The Project would be required to comply with any SJVAPCD rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with control measures and regulations.

Step 3: Cumulative Health Impacts

The SJVAB is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects.

The regional analysis of construction and operational emissions, as indicated in impact discussion b) indicates that the Project would not exceed the SJVAPCD's significance thresholds and the Project is consistent with the applicable AQPs. Therefore, the Project would not result in significant cumulative health impacts from nonattainment pollutants and impacts would be less than significant.

Conclusion

The proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-3 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the proposed Project would expose sensitive receptors to Naturally Occurring Asbestos (NOA), construction-generated fugitive dust (PM_{10}), ROG, NO_X, $PM_{2.5}$, Valley Fever, and construction generated DPM. A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses (sensitive sites) where sensitive receptors are typically located:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences
- Schools, playgrounds and childcare centers

The proposed Project is considered a sensitive receptor. The single-family residences approximately 100 feet north and south of the project site would also be considered sensitive receptors.

Construction

ROG

During the application of architectural coatings (painting), ROG is emitted. The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure of ROG during architectural coatings is a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity

of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction is less than significant.

NO_x, PM_{10}, $PM_{2.5}$

As discussed in Impact AIR-1, emissions during construction would not exceed the significance thresholds and would not be expected to result in concentrations that would exceed ambient standards or contribute substantially to an existing exceedance of an ambient air quality standard.

Naturally-Occurring Asbestos

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the Project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

Fugitive Dust (PM_{10})

PM_{10} emissions would not exceed the thresholds of significance, nevertheless, the potential for localized PM_{10} health impacts are a concern, however, the Project would comply with the SJVAPCD's Regulation VIII incorporating Best Management Practices for reducing fugitive dust, thus potential impacts are reduced to a less than significant level.

Valley Fever

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities. The San Joaquin Valley is considered an endemic area for Valley fever.

The Project site is in an urban area that is developed on all sides. This is an area that would lead to a low probability of having *C. immitis* growth sites and exposure from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The Project will minimize the generation of fugitive dust during construction activities by complying with the SJVAPCD's Regulation VIII. Therefore, this regulation would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the Project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the Project from generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

Diesel Particulate Matter

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road, heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction is temporary and occurs over a relatively short duration. Operation of construction equipment is regulated by federal, state, and local regulations, including CARB and SJVAPCD rules and regulations, and occurring intermittently throughout the course of a day, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low. It is not anticipated that the proposed Project would expose sensitive receptors to substantial pollutant concentrations and impacts would be considered less than significant.

Operations

ROG

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from project motor vehicles would not result in health effects, because the ROG would be distributed across the roadways and in the air. The concentrations would not be great enough to result in direct health effects.

PM_{10}, $PM_{2.5}$, CO, NO_2

As shown in Table 12, the proposed project's emissions would not exceed SJVAPCD screening thresholds for projects that need detailed analysis of localized impacts. Therefore, the Project would not expose sensitive receptors to substantial criteria air pollutant concentrations during construction or operation.

Toxic Air Contaminants

The CARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (CARB 2005), including recommendations for distances between sensitive receptors and certain land uses. The proposed Project is not identified as a land use of concern by CARB and is not located within the screening distances for sources of toxic air contaminants.

Conclusion

Sensitive receptors would not be exposed to substantial pollutant concentrations.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None are required.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-4	**Result in other emissions (such as those leading to odors) affecting a substantial number of people?**

Impact Analysis

While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. The occurrence and severity of odor impacts depends on numerous factors, including nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. The nearest sensitive receptor in the vicinity of the proposed Project site would be the residences approximately 100 feet to the north and south of the Project site. Construction activities associated with the proposed Project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present on site temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people, and the impact would be less than significant.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The proposed Project does not contain land uses typically associated with emitting objectionable odors and is not located within the screening distances to sources of odors recommended by the SJVAPCD. Therefore, the impact would be less than significant.

Conclusion

The proposed Project would not create objectionable odors affecting a substantial number of people.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less Than Significant Impact.

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6.0 GREENHOUSE GAS IMPACT ANALYSIS

6.1 CEQA GUIDELINES

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

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines:

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

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

6.1.1 Thresholds of Significance

San Joaquin Valley Air Pollution Control District

The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA presents a tiered approach to analyzing project significance with respect to GHG emissions. Project GHG emissions are considered less than significant if they can meet any of the following conditions, evaluated in the order presented:

- Project is exempt from CEQA requirements;
- Project complies with an approved GHG emission reduction plan or GHG mitigation program;
- Project implements Best Performance Standards (BPS); or
- Project demonstrates that specific GHG emissions would be reduced or mitigated by at least 29% compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period.

Project-Specific Quantitative Threshold

Section 15064.4(b) of the CEQA Guidelines' amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

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

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

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

The City of Clovis has not adopted its own GHG thresholds or prepared a Climate Action Plan that can be used to determine a project's significance. The General Plan PEIR Mitigation Measure 7-1 requires applicants to meet a 29 percent reduction from BAU in accordance with SJVAPCD guidance. The SJVAPCD's Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020 (SJVAPCD 2009). This level of GHG reduction is based on the target established by ARB's AB 32 Scoping Plan, approved in 2008. First occupancy at the project site is expected to occur in 2020. This date is within the AB 32 2020 milestone year; however, given recent legislative and legal scrutiny on post-2020 compliance, additional discussion is provided to show progress towards GHG reduction goals identified in CARB's 2017 Scoping Plan for the year 2030. Additionally, although not included in a formal GHG reduction plan, Executive Order S-3-05 also includes a goal of reducing GHG emissions 80 percent below 1990 levels by 2050 and Executive Order B-55-18 set the goal to achieve carbon neutrality statewide by 2045. The proposed project briefly addresses those two Executive Orders.

Newhall Ranch

The California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (62 Cal.4th 204 [2015], and known as the Newhall Ranch decision), confirmed that the use of BAU analysis (e.g., 29 percent below BAU), a performance-based approach, would be satisfactory. However, for a project-level analysis that uses CARB's statewide BAU targets, substantial evidence must be presented to support the use of those targets for a particular project at a specific location. The court noted that this may require examination of the data behind the statewide model and adjustment to the levels of reduction from BAU used for project evaluation. To date, neither CARB nor any lead agencies have provided any guidance on how to adjust AB 32's statewide BAU target for use at the project level.

The regulations in the State's 2008 Scoping Plan have been adopted and the State is on track to meet the 2020 target and achieve continued progress towards meeting the 2017 Scoping Plan target for 2030.

In the Newhall case, the Supreme Court was concerned that new development may need to reduce GHG emissions more than existing development to demonstrate it is meeting its fair share of reductions. New development does do more than its fair share through compliance with enhanced regulations, particularly

with respect to motor vehicles, energy efficiency, and electricity generation. If no additional reductions are required from an individual project beyond that achieved by regulations, then the amount needed to reach the 2020 target is the amount of GHG emissions a project must reduce to comply with Statewide goals.

6.2 GREENHOUSE GAS IMPACT ANALYSIS

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

To determine significance, the analysis first will quantify project-related GHG emissions under a business-as-usual scenario, and then compare these emissions with those emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail, below.

Construction

Greenhouse gas emissions generated during all phases of construction were combined and are shown in Table 13. The SJVAPCD does not have a recommendation for assessing the significance of construction related emissions, however, other jurisdictions such as the South Coast Air Quality Management District (SCAQMD) and the Sacramento Metropolitan Air Quality Management District (SMAQMD) have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. The SCAQMD and SMAQMD recommend that construction emissions be amortized based on the life of the project (residential projects – 30 years) and added to the operational emissions

Table 13 Summary of Construction-Generated Greenhouse Gas Emissions

Construction Activity	$MTCO_{2e}$
2019	212
2020	994
2021	29
Total	1,235
Amortized over 30 years[1]	41

Notes:
1. GHG emissions are amortized over the 30-year life of the proposed project
Source: Stantec Consulting Services Inc., CalEEMod 2016.3.2

Operation

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential woodburning. Operational GHG emissions associated with the project were estimated using CalEEMod 2013.2.2.

Business-as-Usual Operational Emissions

Operational emissions under the business-as-usual scenario were modeled using CalEEMod 2013.2.2. Modeling assumptions for the year 2005 were used to represent 2020 business as usual conditions (without the benefit of regulations adopted to reduce GHG emissions). The CARB and SJVAPCD guidance recommend using regulatory conditions in 2002-2004 in the baseline scenario to represent conditions as if regulations had not been adopted to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the residential fleet mix approved by SJVPACD for year 2020. The year 2020 was chosen because it is the AB 32 target year.

2020 Operational Emissions

Operational emissions for the year 2020 were modeled using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2017). Additional GHG reduction measures, such as further passenger vehicle efficiency standards under AB 1493 (Pavley), were adopted as revisions to the State's Low Emission Vehicle Program (LEV III) and will be in effect beginning in 2017, but have not yet been incorporated into EMFAC and CalEEMod assumptions and therefore have not been considered in this analysis as a conservative assumption.

In addition to these rules and regulations, the project would incorporate the following design features that would further reduce GHG emissions:

- Pedestrian Connections – The project is located adjacent to existing pedestrian infrastructure.
- Solar – the project would include the provision of 5 kilowatt (kW) solar systems on the homes.
- Electrical Outlets for Landscaping Equipment: Outlets provided to power electric landscaping equipment.

GHG reductions from some design features can be quantified in CalEEMod. Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the project description. Therefore, reported operational emissions are considered to represent unmitigated project conditions.

Table 14 2020 Project Operational Greenhouse Gases

Source	Emissions ($MTCO_2e$ per year)	
	Business as Usual	2020 (with Regulation and Design Features)
Area	160	160
Energy	827	288
Mobile	3,552	1,950
Waste	103	26
Water	46	25
Subtotal	4,688	2,449
Amortized Construction Emissions	-	41
Total	4,688	2,490
Reduction		46.9%
Significance Threshold		29%
Are emissions significant?		No

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source of business as usual emissions: CalEEMod output for the year 2005 (Appendix A).
Source of 2020 emissions: CalEEMod output for the year 2020(Appendix A).

Table 15 2030 Project Operational Greenhouse Gases

Source	Emissions ($MTCO_2e$ per year)	
	Business as Usual	2030 (with Regulation and Design Features)
Area	160	160
Energy	827	286
Mobile	3,552	1,437
Waste	103	26
Water	46	23
Subtotal	4,688	1,932
Amortized Construction Emissions	-	41
Total	4,688	1,973
Reduction		57.9%
Significance Threshold		29%
Are emissions significant?		No

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source of business as usual emissions: CalEEMod output for the year 2005 (Appendix A).
Source of 2030 emissions: CalEEMod output for the year 2020(Appendix A).

As shown in Tables 14 and 15, the project would achieve a 46.9 percent reduction from BAU by the year 2020 and 57.9 percent reduction from BAU by the year 2030 with adopted regulations and design features incorporated. This is above the 29 percent reduction required by the SJVAPCD threshold, and the required 21.7 percent average reduction from all GHG emission sources to meet the AB 32 targets. The CARB originally identified a reduction of 29 percent from business as usual as needed to achieve AB 32 targets. The 2008 recession and slower growth in the years since 2008 have reduced the growth forecasted for 2020 and the amount needed to be reduced to achieve 1990 levels as required by AB 32; the target was revised to 21.7 percent.

The 46.9 percent reduction from BAU is 25.2 percent beyond the average reduction required by the State from all sources to achieve the AB 32 2020 target. This surplus addresses the Supreme Court's concern in the Newhall case that new development must do more than average to meet its fair share of emission reductions.

By 2030, the proposed project would achieve a 57.9 percent reduction from BAU or 36.2 percent above the 21.7 percent reduction necessary to meet the 2020 target.

The project's occupancy would begin in 2020 and would be fully built out in 2021, thus an additional analysis is provided to show consistency with post-2020 State legislative GHG goals. The SB 32 goal of 40 percent below 1990 emission levels by 2030 is the target established by the 2017 Scoping Plan Update.

The 2017 Scoping Plan includes new strategies that are not incorporated in the analysis above. Many measures that are likely to proceed include zero net energy buildings in future updates to Title 24 and enhanced motor vehicle fuel efficiency standards beyond 2025. The 2017 Scoping Plan identified an emission limit of 260 million metric tons of carbon dioxide equivalents ($MMTCO_2e$). The 2030 BAU Inventory is estimated to be 392 $MMTCO_2e$. The 2017 Scoping Plan identified that the bulk of its reductions would come from the Electric Power, Industrial fuel combustion, and Transportation. The continuance of the Cap and Trad would provide additional reductions. Although the 2017 Scoping Plan largely relies on state actions to achieve the GHG emissions limit, the CARB considers local governments partners in achieving the State's goals for reducing GHG emissions. The 2017 Scoping Plan suggests that all new land use development implement feasible measures to reduce GHG emissions, however, it does not define feasible measures nor assign a required reduction amount to new development. A fair share quantitative threshold based on the 2017 Scoping Plan is not presently feasible as the nexus between a project's contribution and its fair share mitigation is not well defined.

Based on the 46.9 percent reduction from BAU for 2020, the proposed project would not have a significant impact on GHG emissions as it would meet the SJVAPCD's threshold of 29 percent and exceed the CARB's 21.7 percent reduction necessary from all sources to meet the 2020 emissions limit.

The City of Clovis has not identified a threshold to meet the SB 32 2030 target. However, for the year 2030, the project achieves a 56.9 percent reduction from BAU, which demonstrates substantial progress towards achieving the 2030 target.

Regarding the years 2045 and 2050, there have been Executive Orders issued to address carbon neutrality and GHG reduction targets, respectively for those years, however, there are no existing GHG reduction measures or plans that specifically address those Orders. Historically, the State would take the lead in developing regulatory and market measures to achieve the required reductions. The proposed project would participate in the reductions through adherence with regulations and continued improvements to the motor vehicle efficiencies accessing the project site. Studies have shown that in order to meet the 2050 targets, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the proposed project's impacts further relative to the 2050 goals is speculative for purposes of CEQA (Mitchell, 2018).

Conclusion

In summary, the proposed project meets the required 29 percent below BAU as established by the City of Clovis in its General Plan PEIR and is consistent with guidance provided by the SJVAPCD. Furthermore, the proposed project shows significant reductions in the year 2030 to suggest that it would not inhibit the State's progress in achieving the 2030 GHG emissions target. The GHG emissions impact would be less than significant with respect to Consideration #1 and #2.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact GHG-2 Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

SJVAPCD Climate Change Action Plan

The SJVAPCD has adopted a CCAP, which includes suggested BPS for proposed residential development projects. Appendix J of the SJVAPCD Final Staff Report for the CCAP contains GHG reduction measures that would be applicable to the proposed project. The proposed project's consistency with these measures is included in Table 16 below. As shown in Table 16, the proposed project would be consistent with the applicable CCAP measures.

Table 16 Consistency with SJVAPCD's Climate Change Action Plan Measures

Measure Number	Measure Name	Measure Description	Consistency Determination
Bicycle/Pedestrian Transit Measures			
4	Proximity to bike path/bike lanes	Entire project is located within 1/2 mile of an existing Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility. Existing facilities are defined as those facilities that are physically constructed and ready for use prior to the first 20% of the project's occupancy permits being granted. Project design includes a designated bicycle route connecting all units, on-site bicycle parking facilities, offsite bicycle facilities, site entrances, and primary	**Consistent.** As the area is developed the adjacent streets would be developed to Class II bike lanes. Class II trails are in existence 0.25 miles away on Shepherd Avenue.

		building entrances to existing Class I or Class II bike lane(s) within 1/2 mile. Bicycle route connects to all streets contiguous with project site. Bicycle route has minimum conflicts with automobile parking and circulation facilities. All streets internal to the project wider than 75 feet have class II bicycle lanes on both sides.	
5	Pedestrian Network	The project provides a pedestrian access network that internally links all uses and connects to existing external streets and pedestrian facilities. Existing facilities are defined as those facilities that are physically constructed and ready for use prior to the first 20% of the project's occupancy permits being granted.	**Consistent.** The proposed project would provide pedestrian access throughout the project site.
5A	Pedestrian Network	The project provides a pedestrian access network that internally links all uses for connecting to planned external streets and pedestrian facilities (facilities must be included pedestrian master plan or equivalent).	**Consistent.** The proposed project would connect all uses to existing and planned streets.
6	Pedestrian barriers minimized	Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and nonresidential uses that impede bicycle or pedestrian circulation are eliminated. Barriers to pedestrian access of neighboring facilities and sites are minimized. This measure is not meant to prevent the limited use of barriers to ensure public safety by prohibiting access to hazardous areas, etc.	**Consistent.** The proposed project would not construct barriers that would prevent interconnectivity of the project site to surrounding areas.
Site Design Measures			
18	Residential Density with No Transit	Project provides high-density residential development. Mitgation value is based on project density with no transit. Density is calculated by determining the number of units per acre ("du/acre") within the residential portion of the project's net lot area.	**Consistent.** The proposed project would develop higher density residential (medium density) from the current land use designation (low density)
Building Component Measures			
25	Energy Star Roof	Install Energy Star labeled roof materials. Energy star qualified roof products reflect more of the sun's rays, decreasing the amount of heat transferred into a building.	**Consistent.** The proposed project would not install Energy Star roofs, but would install solar roof systems that would absorb the sun's rays and decrease the amount of heat transferred into the building.
26	Onsite Renewable Energy System	Project provides onsite renewable energy system(s).	**Consistent.** The proposed project would install roof top

			solar systems on each home.
27	Exceed Title 24	Project exceeds Title 24 requirements by 20 percent.	**Consistent.** The proposed project would incorporate various energy savings measures that would exceed Title 24 standards.
31	Electric Lawnmower	Provide a complimentary electric lawnmower to each residential buyer.	**Consistent.** The proposed project would not provide a complimentary lawnmower to each residential buyer but would include electrical outlets on the front and rear of all residences. Additionally, landscaping would be designed to minimize the need for traditional lawn maintenance.
Additional GHG Emission Reduction Measures Requiring Additional Investigation			
9	Natural Gas Stove	Project features only natural gas or electric stoves in residences.	**Consistent.** The proposed project would include only electric or gas appliances.
16	Energy Efficient Appliances	Install energy efficient heating and cooling systems, appliances and equipment, and control systems	**Consistent.** The proposed project would install energy efficient heating and cooling systems, appliances, and control systems.
17	Renewable Energy Use	Install solar, wind, and geothermal power systems and solar hot water heaters. Educate consumers about existing incentives.	**Consistent.** The proposed project would install rooftop solar on each residence.
20	Tree Planting	Protect existing trees and encourage the planting of new trees. Adopt a tree protection and replacement ordinance, e.g., requiring that trees larger than a specified diameter that are removed to accommodate development must be replaced at a set ratio.	**Consistent.** The proposed project would include trees and landscaping in accordance with City of Clovis standards.
Source of Measures: SJVAPCD, 2009 Source of Consistency Determination: Stantec Consulting Services Inc, 2019			

CARB Scoping Plan

There are no other local or regional Climate Action Plans applicable to the proposed project, therefore, the proposed project was evaluated for consistency against the CARB 2017 Scoping Plan. Table 17 provides a summary of the consistency determination.

Table 17 Consistency with SB 32 2017 Scoping Plan Update

Measure Name	Measure Description	Consistency Determination
SB 350 50% Renewable Mandate.	Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030.	**Consistent.** The proposed project will purchase electricity from a utility subject to the SB 350 Renewable Mandate. In addition, the proposed project includes renewable energy through roof top solar systems.
Low Carbon Fuel Standard	This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030.	**Consistent.** Vehicles accessing the proposed project site will use fuel containing lower carbon content as the fuel standard is implemented.
Mobile Source Strategy (Cleaner Technology and Fuels Scenario)	Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses.	**Consistent.** Future residents can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CalGreen Code requires electrical service in new single-family housing to be EV charger-ready. Home deliveries will be made by increasing numbers of ZEV delivery trucks.
Short-Lived Climate Pollutant (SLCP) Reduction Strategy	The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030.	**Consistent.** The project will include only natural gas hearths that produce very little black carbon compared to wood burning fireplaces and heaters.
SB 375 Sustainable Communities Strategies	Requires Regional Transportation Plans to include a sustainable communities' strategy for reduction of per capita vehicle miles traveled.	**Consistent.** The proposed project would provide housing in the region that is consistent with the growth projections in the 2014 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas.
Post-2020 Cap-and-Trade Program	The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers.	**Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap- and-Trade

		Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period.
Source of Measures: CARB, 2017 Source of Consistency Determination: Stantec Consulting Services Inc, 2019		

Regarding Post-2020 reduction goals, the following is excerpted from a recent City of Clovis air quality and GHG study for consistency purposes:

> *Taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 1990 levels by 2020, 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.* (Mitchell, 2018)

As demonstrated above, the proposed project would be consistent with applicable measures in the SJVAPCD's CCAP and the State's Scoping Plan. As discussed in impact GHG-1, the proposed project exceeds the required 29 percent reduction from BAU by 2020 and achieves substantial reductions in 2030 to show progress towards the 2030 GHG reduction goals. The proposed project would similarly not obstruct attainment of the State's goals for 2030 and 2050 and would participate in the State's endeavor for carbon neutrality by 2045 through the incorporation of renewable energy systems and the purchase of energy from a utility provider subject to the renewable energy regulation.

Conclusion

The proposed project would not conflict with the goals and objectives of the SJVAPCD's CCAP, with CARB's 2017 Scoping Plan, or any other State or regional plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As such, the proposed project would not conflict with an applicable plan; therefore, impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less Than Significant Impact.

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APPENDIX A

CalEEMod Output Files

Granville Homes - Locan - Tract 6239 - Phase 1

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	68.00	Dwelling Unit	16.00	122,400.00	194

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - 2020 - 3/2021

Off-road Equipment - Increased equipment to account for decreased schedule from default

Off-road Equipment - Increased equipment to account for schedule reduction from default

Off-road Equipment - Increased equipment to account for decreased schedule from default

Demolition -

Architectural Coating - Rule 4601 Average VOC Content

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodstoves

Area Coating - Rule 4601 Average VOC Content

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC Content

Energy Mitigation - Assumed minimum of 5 kw solar system size per home =8441 kWh

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percebt statewude diversion/recycling mandate

Fleet Mix - Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	300.00	75.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblFireplaces	NumberGas	37.40	68.00
tblFireplaces	NumberNoFireplace	30.60	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.6000e-003
tblFleetMix	LHD2	4.9970e-003	9.0000e-004
tblFleetMix	MCY	5.2610e-003	2.6000e-003
tblFleetMix	MDV	0.13	0.05
tblFleetMix	MH	6.6700e-004	1.5000e-003
tblFleetMix	MHD	0.03	9.1000e-003
tblFleetMix	OBUS	2.3690e-003	0.00
tblFleetMix	SBUS	1.1150e-003	1.1000e-003

tblFleetMix	UBUS	1.6750e-003	4.4000e-003
tblLandUse	LotAcreage	22.08	16.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	30.00	15.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2056	1.9786	1.4611	2.3800e-003	0.2274	0.1089	0.3362	0.1055	0.1010	0.2064	0.0000	210.7830	210.7830	0.0604	0.0000	212.2940
2020	0.8108	1.2992	1.2755	1.9100e-003	5.9200e-003	0.0796	0.0856	1.6000e-003	0.0743	0.0759	0.0000	165.0217	165.0217	0.0446	0.0000	166.1362
Maximum	**0.8108**	**1.9786**	**1.4611**	**2.3800e-003**	**0.2274**	**0.1089**	**0.3362**	**0.1055**	**0.1010**	**0.2064**	**0.0000**	**210.7830**	**210.7830**	**0.0604**	**0.0000**	**212.2940**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2056	1.9786	1.4611	2.3800e-003	0.2274	0.1089	0.3362	0.1055	0.1010	0.2064	0.0000	210.7827	210.7827	0.0604	0.0000	212.2938
2020	0.8108	1.2992	1.2755	1.9100e-003	5.9200e-003	0.0796	0.0856	1.6000e-003	0.0743	0.0759	0.0000	165.0215	165.0215	0.0446	0.0000	166.1360
Maximum	**0.8108**	**1.9786**	**1.4611**	**2.3800e-003**	**0.2274**	**0.1089**	**0.3362**	**0.1055**	**0.1010**	**0.2064**	**0.0000**	**210.7827**	**210.7827**	**0.0604**	**0.0000**	**212.2938**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-23-2019**	**12-22-2019**	1.9673	1.9673
2	**12-23-2019**	**3-22-2020**	2.0514	2.0514
3	**3-23-2020**	**6-22-2020**	0.2429	0.2429
		Highest	2.0514	2.0514

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	0.5487	0.0521	0.5263	3.2000e-004		6.5200e-003	6.5200e-003		6.5200e-003	6.5200e-003	0.0000	54.3850	54.3850	1.8300e-003	9.8000e-004	54.7233
Energy	9.5900e-003	0.0819	0.0349	5.2000e-004		6.6200e-003	6.6200e-003		6.6200e-003	6.6200e-003	0.0000	268.1790	268.1790	9.6500e-003	3.3600e-003	269.4219
Mobile	0.2370	0.8774	2.7068	7.7500e-003	0.6976	7.9500e-003	0.7055	0.1868	7.4500e-003	0.1943	0.0000	711.1689	711.1689	0.0505	0.0000	712.4324

Waste						0.0000	0.0000		0.0000	0.0000	14.1769	0.0000	14.1769	0.8378	0.0000	35.1226
Water						0.0000	0.0000		0.0000	0.0000	1.4056	9.8180	11.2236	0.1448	3.5000e-003	15.8871
Total	**0.7953**	**1.0114**	**3.2679**	**8.5900e-003**	**0.6976**	**0.0211**	**0.7187**	**0.1868**	**0.0206**	**0.2074**	**15.5825**	**1,043.5509**	**1,059.1334**	**1.0447**	**7.8400e-003**	**1,087.5874**

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	0.5484	0.0521	0.5226	3.2000e-004		6.5000e-003	6.5000e-003		6.5000e-003	6.5000e-003	0.0000	54.3775	54.3775	1.8200e-003	9.8000e-004	54.7156
Energy	9.5900e-003	0.0819	0.0349	5.2000e-004		6.6200e-003	6.6200e-003		6.6200e-003	6.6200e-003	0.0000	101.1993	101.1993	2.1000e-003	1.8000e-003	101.7879
Mobile	0.2325	0.8409	2.5647	7.2500e-003	0.6495	7.4600e-003	0.6569	0.1739	6.9900e-003	0.1809	0.0000	665.2033	665.2033	0.0483	0.0000	666.4107
Waste						0.0000	0.0000		0.0000	0.0000	3.5442	0.0000	3.5442	0.2095	0.0000	8.7807
Water						0.0000	0.0000		0.0000	0.0000	1.3198	8.8238	10.1437	0.1360	3.2800e-003	14.5211
Total	**0.7906**	**0.9749**	**3.1221**	**8.0900e-003**	**0.6495**	**0.0206**	**0.6700**	**0.1739**	**0.0201**	**0.1940**	**4.8641**	**829.6040**	**834.4681**	**0.3976**	**6.0600e-003**	**846.2160**

	ROG	NOx	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	**0.59**	**3.61**	**4.46**	**5.82**	**6.90**	**2.42**	**6.77**	**6.90**	**2.33**	**6.45**	**68.79**	**20.50**	**21.21**	**61.94**	**22.70**	**22.19**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/23/2019	10/4/2019	5	10	
2	Grading	Grading	10/5/2019	11/15/2019	5	30	

3	Building Construction	Building Construction	11/16/2019	2/28/2020	5	75	
4	Paving	Paving	2/29/2020	3/13/2020	5	10	
5	Architectural Coating	Architectural Coating	3/14/2020	3/27/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 247,860; Residential Outdoor: 82,620; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	4	8.00	130	0.42
Paving	Paving Equipment	4	8.00	132	0.36
Paving	Rollers	4	8.00	80	0.38
Architectural Coating	Air Compressors	2	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	30	24.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.8000e-004	2.8000e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6427	0.6427	2.0000e-005	0.0000	0.6432
Total	**4.3000e-004**	**2.8000e-004**	**2.8000e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6427**	**0.6427**	**2.0000e-005**	**0.0000**	**0.6432**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0217	0.2279	0.1103	1.9000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	17.0843	17.0843	5.4100e-003	0.0000	17.2195
Total	**0.0217**	**0.2279**	**0.1103**	**1.9000e-004**	**0.0903**	**0.0120**	**0.1023**	**0.0497**	**0.0110**	**0.0607**	**0.0000**	**17.0843**	**17.0843**	**5.4100e-003**	**0.0000**	**17.2195**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	2.8000e-004	2.8000e-003	1.0000e-005	7.2000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6427	0.6427	2.0000e-005	0.0000	0.6432
Total	**4.3000e-004**	**2.8000e-004**	**2.8000e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.6427**	**0.6427**	**2.0000e-005**	**0.0000**	**0.6432**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5520	83.5520	0.0264	0.0000	84.2129
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5520**	**83.5520**	**0.0264**	**0.0000**	**84.2129**

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	1.4200e-003	9.3000e-004	9.3500e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4100e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	2.1424	2.1424	6.0000e-005	0.0000	2.1440
Total	**1.4200e-003**	**9.3000e-004**	**9.3500e-003**	**2.0000e-005**	**2.4000e-003**	**2.0000e-005**	**2.4100e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**2.1424**	**2.1424**	**6.0000e-005**	**0.0000**	**2.1440**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0711	0.8178	0.5007	9.3000e-004		0.0357	0.0357		0.0329	0.0329	0.0000	83.5519	83.5519	0.0264	0.0000	84.2128
Total	**0.0711**	**0.8178**	**0.5007**	**9.3000e-004**	**0.1301**	**0.0357**	**0.1658**	**0.0540**	**0.0329**	**0.0868**	**0.0000**	**83.5519**	**83.5519**	**0.0264**	**0.0000**	**84.2128**

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	1.4200e-003	9.3000e-004	9.3500e-003	2.0000e-005	2.4000e-003	2.0000e-005	2.4100e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	2.1424	2.1424	6.0000e-005	0.0000	2.1440
Total	**1.4200e-003**	**9.3000e-004**	**9.3500e-003**	**2.0000e-005**	**2.4000e-003**	**2.0000e-005**	**2.4100e-003**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**2.1424**	**2.1424**	**6.0000e-005**	**0.0000**	**2.1440**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1086	0.9154	0.8235	1.1600e-003		0.0610	0.0610		0.0569	0.0569	0.0000	101.5726	101.5726	0.0281	0.0000	102.2739
Total	**0.1086**	**0.9154**	**0.8235**	**1.1600e-003**		**0.0610**	**0.0610**		**0.0569**	**0.0569**	**0.0000**	**101.5726**	**101.5726**	**0.0281**	**0.0000**	**102.2739**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0151	2.5800e-003	3.0000e-005	7.4000e-004	1.1000e-004	8.5000e-004	2.1000e-004	1.1000e-004	3.2000e-004	0.0000	3.0467	3.0467	3.9000e-004	0.0000	3.0563
Worker	1.8100e-003	1.1900e-003	0.0120	3.0000e-005	3.0700e-003	2.0000e-005	3.0900e-003	8.2000e-004	2.0000e-005	8.3000e-004	0.0000	2.7423	2.7423	8.0000e-005	0.0000	2.7443
Total	**2.3300e-003**	**0.0163**	**0.0146**	**6.0000e-005**	**3.8100e-003**	**1.3000e-004**	**3.9400e-003**	**1.0300e-003**	**1.3000e-004**	**1.1500e-003**	**0.0000**	**5.7889**	**5.7889**	**4.7000e-004**	**0.0000**	**5.8006**

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	0.1086	0.9154	0.8235	1.1600e-003		0.0610	0.0610		0.0569	0.0569	0.0000	101.5725	101.5725	0.0281	0.0000	102.2737
Total	**0.1086**	**0.9154**	**0.8235**	**1.1600e-003**		**0.0610**	**0.0610**		**0.0569**	**0.0569**	**0.0000**	**101.5725**	**101.5725**	**0.0281**	**0.0000**	**102.2737**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-004	0.0151	2.5800e-003	3.0000e-005	7.4000e-004	1.1000e-004	8.5000e-004	2.1000e-004	1.1000e-004	3.2000e-004	0.0000	3.0467	3.0467	3.9000e-004	0.0000	3.0563
Worker	1.8100e-003	1.1900e-003	0.0120	3.0000e-005	3.0700e-003	2.0000e-005	3.0900e-003	8.2000e-004	2.0000e-005	8.3000e-004	0.0000	2.7423	2.7423	8.0000e-005	0.0000	2.7443
Total	**2.3300e-003**	**0.0163**	**0.0146**	**6.0000e-005**	**3.8100e-003**	**1.3000e-004**	**3.9400e-003**	**1.0300e-003**	**1.3000e-004**	**1.1500e-003**	**0.0000**	**5.7889**	**5.7889**	**4.7000e-004**	**0.0000**	**5.8006**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1310	1.1213	1.0906	1.5600e-003		0.0709	0.0709		0.0661	0.0661	0.0000	134.1191	134.1191	0.0373	0.0000	135.0513
Total	**0.1310**	**1.1213**	**1.0906**	**1.5600e-003**		**0.0709**	**0.0709**		**0.0661**	**0.0661**	**0.0000**	**134.1191**	**134.1191**	**0.0373**	**0.0000**	**135.0513**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6000e-004	0.0187	2.9800e-003	4.0000e-005	1.0000e-003	1.0000e-004	1.1000e-003	2.9000e-004	9.0000e-005	3.8000e-004	0.0000	4.0588	4.0588	5.0000e-004	0.0000	4.0713
Worker	2.2300e-003	1.4100e-003	0.0143	4.0000e-005	4.1300e-003	3.0000e-005	4.1500e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.5704	3.5704	1.0000e-004	0.0000	3.5728
Total	**2.7900e-003**	**0.0201**	**0.0173**	**8.0000e-005**	**5.1300e-003**	**1.3000e-004**	**5.2500e-003**	**1.3900e-003**	**1.1000e-004**	**1.5000e-003**	**0.0000**	**7.6292**	**7.6292**	**6.0000e-004**	**0.0000**	**7.6441**

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	0.1310	1.1213	1.0906	1.5600e-003		0.0709	0.0709		0.0661	0.0661	0.0000	134.1189	134.1189	0.0373	0.0000	135.0512
Total	**0.1310**	**1.1213**	**1.0906**	**1.5600e-003**		**0.0709**	**0.0709**		**0.0661**	**0.0661**	**0.0000**	**134.1189**	**134.1189**	**0.0373**	**0.0000**	**135.0512**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.6000e-004	0.0187	2.9800e-003	4.0000e-005	1.0000e-003	1.0000e-004	1.1000e-003	2.9000e-004	9.0000e-005	3.8000e-004	0.0000	4.0588	4.0588	5.0000e-004	0.0000	4.0713
Worker	2.2300e-003	1.4100e-003	0.0143	4.0000e-005	4.1300e-003	3.0000e-005	4.1500e-003	1.1000e-003	2.0000e-005	1.1200e-003	0.0000	3.5704	3.5704	1.0000e-004	0.0000	3.5728
Total	**2.7900e-003**	**0.0201**	**0.0173**	**8.0000e-005**	**5.1300e-003**	**1.3000e-004**	**5.2500e-003**	**1.3900e-003**	**1.1000e-004**	**1.5000e-003**	**0.0000**	**7.6292**	**7.6292**	**6.0000e-004**	**0.0000**	**7.6441**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1902
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0136**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1902**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5190	0.5190	1.0000e-005	0.0000	0.5193
Total	**3.2000e-004**	**2.1000e-004**	**2.0800e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5190**	**0.5190**	**1.0000e-005**	**0.0000**	**0.5193**

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	0.0136	0.1407	0.1465	2.3000e-004		7.5300e-003	7.5300e-003		6.9300e-003	6.9300e-003	0.0000	20.0282	20.0282	6.4800e-003	0.0000	20.1901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0136**	**0.1407**	**0.1465**	**2.3000e-004**		**7.5300e-003**	**7.5300e-003**		**6.9300e-003**	**6.9300e-003**	**0.0000**	**20.0282**	**20.0282**	**6.4800e-003**	**0.0000**	**20.1901**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.1000e-004	2.0800e-003	1.0000e-005	6.0000e-004	0.0000	6.0000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5190	0.5190	1.0000e-005	0.0000	0.5193
Total	**3.2000e-004**	**2.1000e-004**	**2.0800e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.0000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5190**	**0.5190**	**1.0000e-005**	**0.0000**	**0.5193**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6606					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**0.6630**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

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	1.1000e-004	7.0000e-005	6.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1730	0.1730	0.0000	0.0000	0.1731
Total	**1.1000e-004**	**7.0000e-005**	**6.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1730**	**0.1730**	**0.0000**	**0.0000**	**0.1731**

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	0.6606					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	**0.6630**	**0.0168**	**0.0183**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.1100e-003**	**1.1100e-003**	**0.0000**	**2.5533**	**2.5533**	**2.0000e-004**	**0.0000**	**2.5582**

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	1.1000e-004	7.0000e-005	6.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1730	0.1730	0.0000	0.0000	0.1731
Total	**1.1000e-004**	**7.0000e-005**	**6.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1730**	**0.1730**	**0.0000**	**0.0000**	**0.1731**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2325	0.8409	2.5647	7.2500e-003	0.6495	7.4600e-003	0.6569	0.1739	6.9900e-003	0.1809	0.0000	665.2033	665.2033	0.0483	0.0000	666.4107
Unmitigated	0.2370	0.8774	2.7068	7.7500e-003	0.6976	7.9500e-003	0.7055	0.1868	7.4500e-003	0.1943	0.0000	711.1689	711.1689	0.0505	0.0000	712.4324

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	641.92	648.72	581.40	1,858,130	1,729,919
Total	641.92	648.72	581.40	1,858,130	1,729,919

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.540200	0.197200	0.166800	0.054000	0.001600	0.000900	0.009100	0.020600	0.000000	0.004400	0.002600	0.001100	0.001500

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	6.3251	6.3251	2.9000e-004	6.0000e-005	6.3499
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	173.3048	173.3048	7.8400e-003	1.6200e-003	173.9838
NaturalGas Mitigated	9.5900e-003	0.0819	0.0349	5.2000e-004		6.6200e-003	6.6200e-003		6.6200e-003	6.6200e-003	0.0000	94.8743	94.8743	1.8200e-003	1.7400e-003	95.4380
NaturalGas Unmitigated	9.5900e-003	0.0819	0.0349	5.2000e-004		6.6200e-003	6.6200e-003		6.6200e-003	6.6200e-003	0.0000	94.8743	94.8743	1.8200e-003	1.7400e-003	95.4380

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.77788e+006	9.5900e-003	0.0819	0.0349	5.2000e-004		6.6200e-003	6.6200e-003		6.6200e-003	6.6200e-003	0.0000	94.8743	94.8743	1.8200e-003	1.7400e-003	95.4380
Total		**9.5900e-003**	**0.0819**	**0.0349**	**5.2000e-004**		**6.6200e-003**	**6.6200e-003**		**6.6200e-003**	**6.6200e-003**	**0.0000**	**94.8743**	**94.8743**	**1.8200e-003**	**1.7400e-003**	**95.4380**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.77788e+006	9.5900e-003	0.0819	0.0349	5.2000e-004		6.6200e-003	6.6200e-003		6.6200e-003	6.6200e-003	0.0000	94.8743	94.8743	1.8200e-003	1.7400e-003	95.4380
Total		**9.5900e-003**	**0.0819**	**0.0349**	**5.2000e-004**		**6.6200e-003**	**6.6200e-003**		**6.6200e-003**	**6.6200e-003**	**0.0000**	**94.8743**	**94.8743**	**1.8200e-003**	**1.7400e-003**	**95.4380**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

Land Use	kWh/yr	MT/yr			
Single Family Housing	595730	173.3048	7.8400e-003	1.6200e-003	173.9838
Total		**173.3048**	**7.8400e-003**	**1.6200e-003**	**173.9838**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	21742.3	6.3251	2.9000e-004	6.0000e-005	6.3499
Total		**6.3251**	**2.9000e-004**	**6.0000e-005**	**6.3499**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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	0.5484	0.0521	0.5226	3.2000e-004		6.5000e-003	6.5000e-003		6.5000e-003	6.5000e-003	0.0000	54.3775	54.3775	1.8200e-003	9.8000e-004	54.7156
Unmitigated	0.5487	0.0521	0.5263	3.2000e-004		6.5200e-003	6.5200e-003		6.5200e-003	6.5200e-003	0.0000	54.3850	54.3850	1.8300e-003	9.8000e-004	54.7233

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	0.0498					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4780					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.4100e-003	0.0463	0.0197	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	53.5602	53.5602	1.0300e-003	9.8000e-004	53.8785
Landscaping	0.0154	5.8600e-003	0.5066	3.0000e-005		2.7900e-003	2.7900e-003		2.7900e-003	2.7900e-003	0.0000	0.8248	0.8248	8.0000e-004	0.0000	0.8449
Total	**0.5487**	**0.0521**	**0.5263**	**3.3000e-004**		**6.5300e-003**	**6.5300e-003**		**6.5300e-003**	**6.5300e-003**	**0.0000**	**54.3850**	**54.3850**	**1.8300e-003**	**9.8000e-004**	**54.7233**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0498					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4780					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.4100e-003	0.0463	0.0197	3.0000e-004		3.7400e-003	3.7400e-003		3.7400e-003	3.7400e-003	0.0000	53.5602	53.5602	1.0300e-003	9.8000e-004	53.8785
Landscaping	0.0152	5.8200e-003	0.5029	3.0000e-005		2.7600e-003	2.7600e-003		2.7600e-003	2.7600e-003	0.0000	0.8173	0.8173	7.9000e-004	0.0000	0.8372
Total	**0.5484**	**0.0521**	**0.5226**	**3.3000e-004**		**6.5000e-003**	**6.5000e-003**		**6.5000e-003**	**6.5000e-003**	**0.0000**	**54.3775**	**54.3775**	**1.8200e-003**	**9.8000e-004**	**54.7156**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.1437	0.1360	3.2800e-003	14.5211
Unmitigated	11.2236	0.1448	3.5000e-003	15.8871

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	4.43047 / 2.79312	11.2236	0.1448	3.5000e-003	15.8871
Total		**11.2236**	**0.1448**	**3.5000e-003**	**15.8871**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	4.16021 / 2.2345	10.1437	0.1360	3.2800e-003	14.5211
Total		**10.1437**	**0.1360**	**3.2800e-003**	**14.5211**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e

	MT/yr			
Mitigated	3.5442	0.2095	0.0000	8.7807
Unmitigated	14.1769	0.8378	0.0000	35.1226

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	69.84	14.1769	0.8378	0.0000	35.1226
Total		**14.1769**	**0.8378**	**0.0000**	**35.1226**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	17.46	3.5442	0.2095	0.0000	8.7807
Total		**3.5442**	**0.2095**	**0.0000**	**8.7807**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville Homes - Locan - Tract 6239 - Phase 1

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	68.00	Dwelling Unit	16.00	122,400.00	194

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - 2020 - 3/2021

Off-road Equipment - Increased equipment to account for decreased schedule from default

Off-road Equipment - Increased equipment to account for schedule reduction from default

Off-road Equipment - Increased equipment to account for decreased schedule from default

Demolition -

Architectural Coating - Rule 4601 Average VOC Content

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodstoves

Area Coating - Rule 4601 Average VOC Content

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC Content

Energy Mitigation - Assumed minimum of 5 kw solar system size per home =8441 kWh

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percebt statewude diversion/recycling mandate

Fleet Mix - Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	300.00	75.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblFireplaces	NumberGas	37.40	68.00
tblFireplaces	NumberNoFireplace	30.60	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.6000e-003
tblFleetMix	LHD2	4.9970e-003	9.0000e-004
tblFleetMix	MCY	5.2610e-003	2.6000e-003
tblFleetMix	MDV	0.13	0.05
tblFleetMix	MH	6.6700e-004	1.5000e-003
tblFleetMix	MHD	0.03	9.1000e-003
tblFleetMix	OBUS	2.3690e-003	0.00
tblFleetMix	SBUS	1.1150e-003	1.1000e-003

tblFleetMix	UBUS	1.6750e-003	4.4000e-003
tblLandUse	LotAcreage	22.08	16.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	30.00	15.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.9424	58.2398	52.3823	0.0766	18.2141	3.8217	20.6054	9.9699	3.5662	12.1699	0.0000	7,385.4394	7,385.4394	1.9666	0.0000	7,434.6051
2020	132.6227	53.0929	51.5343	0.0765	0.2446	3.3019	3.5465	0.0660	3.0814	3.1474	0.0000	7,256.5418	7,256.5418	1.9442	0.0000	7,305.1459
Maximum	**132.6227**	**58.2398**	**52.3823**	**0.0766**	**18.2141**	**3.8217**	**20.6054**	**9.9699**	**3.5662**	**12.1699**	**0.0000**	**7,385.4394**	**7,385.4394**	**1.9666**	**0.0000**	**7,434.6051**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.9424	58.2398	52.3823	0.0766	18.2141	3.8217	20.6054	9.9699	3.5662	12.1699	0.0000	7,385.4394	7,385.4394	1.9666	0.0000	7,434.6050
2020	132.6227	53.0929	51.5343	0.0765	0.2446	3.3019	3.5465	0.0660	3.0814	3.1474	0.0000	7,256.5418	7,256.5418	1.9442	0.0000	7,305.1459
Maximum	**132.6227**	**58.2398**	**52.3823**	**0.0766**	**18.2141**	**3.8217**	**20.6054**	**9.9699**	**3.5662**	**12.1699**	**0.0000**	**7,385.4394**	**7,385.4394**	**1.9666**	**0.0000**	**7,434.6050**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	3.1955	1.1931	6.1087	7.5000e-003		0.1222	0.1222		0.1222	0.1222	0.0000	1,450.1016	1,450.1016	0.0375	0.0264	1,458.9050
Energy	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Mobile	1.2151	5.0672	15.3639	0.0421	4.0267	0.0449	4.0717	1.0760	0.0421	1.1181		4,258.9964	4,258.9964	0.3197		4,266.9897
Total	**4.4632**	**6.7092**	**21.6637**	**0.0525**	**4.0267**	**0.2034**	**4.2301**	**1.0760**	**0.2006**	**1.2765**	**0.0000**	**6,282.1443**	**6,282.1443**	**0.3682**	**0.0369**	**6,302.3464**

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	3.1931	1.1927	6.0681	7.4900e-003		0.1219	0.1219		0.1219	0.1219	0.0000	1,450.0106	1,450.0106	0.0373	0.0264	1,458.8105
Energy	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Mobile	1.1904	4.8524	14.6118	0.0394	3.7489	0.0422	3.7911	1.0017	0.0395	1.0413		3,983.3852	3,983.3852	0.3061		3,991.0377
Total	**4.4361**	**6.4940**	**20.8709**	**0.0497**	**3.7489**	**0.2004**	**3.9493**	**1.0017**	**0.1977**	**1.1995**	**0.0000**	**6,006.4421**	**6,006.4421**	**0.3544**	**0.0369**	**6,026.2999**

	ROG	NOx	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	**0.61**	**3.21**	**3.66**	**5.20**	**6.90**	**1.47**	**6.64**	**6.90**	**1.41**	**6.04**	**0.00**	**4.39**	**4.39**	**3.74**	**0.00**	**4.38**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/23/2019	10/4/2019	5	10	
2	Grading	Grading	10/5/2019	11/15/2019	5	30	
3	Building Construction	Building Construction	11/16/2019	2/28/2020	5	75	
4	Paving	Paving	2/29/2020	3/13/2020	5	10	
5	Architectural Coating	Architectural Coating	3/14/2020	3/27/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 247,860; Residential Outdoor: 82,620; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	4	8.00	130	0.42
Paving	Paving Equipment	4	8.00	132	0.36
Paving	Rollers	4	8.00	80	0.38
Architectural Coating	Air Compressors	2	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	30	24.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0898	0.0613	0.5541	1.3700e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		136.1943	136.1943	4.1300e-003		136.2976
Total	**0.0898**	**0.0613**	**0.5541**	**1.3700e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**136.1943**	**136.1943**	**4.1300e-003**		**136.2976**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0898	0.0613	0.5541	1.3700e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		136.1943	136.1943	4.1300e-003		136.2976
Total	**0.0898**	**0.0613**	**0.5541**	**1.3700e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**136.1943**	**136.1943**	**4.1300e-003**		**136.2976**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854

Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	0.0998	0.0681	0.6157	1.5200e-003	0.1643	1.0600e-003	0.1654	0.0436	9.8000e-004	0.0446		151.3270	151.3270	4.5900e-003		151.4418
Total	**0.0998**	**0.0681**	**0.6157**	**1.5200e-003**	**0.1643**	**1.0600e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**151.3270**	**151.3270**	**4.5900e-003**		**151.4418**

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	0.0998	0.0681	0.6157	1.5200e-003	0.1643	1.0600e-003	0.1654	0.0436	9.8000e-004	0.0446		151.3270	151.3270	4.5900e-003		151.4418
Total	**0.0998**	**0.0681**	**0.6157**	**1.5200e-003**	**0.1643**	**1.0600e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**151.3270**	**151.3270**	**4.5900e-003**		**151.4418**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.7896	57.2132	51.4666	0.0728		3.8135	3.8135		3.5584	3.5584		6,997.7891	6,997.7891	1.9325		7,046.1024
Total	**6.7896**	**57.2132**	**51.4666**	**0.0728**		**3.8135**	**3.8135**		**3.5584**	**3.5584**		**6,997.7891**	**6,997.7891**	**1.9325**		**7,046.1024**

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	0.0331	0.9449	0.1769	1.9700e-003	0.0474	6.9400e-003	0.0544	0.0137	6.6400e-003	0.0203		206.0579	206.0579	0.0286		206.7725
Worker	0.1197	0.0817	0.7389	1.8200e-003	0.1972	1.2700e-003	0.1984	0.0523	1.1700e-003	0.0535		181.5924	181.5924	5.5100e-003		181.7302
Total	**0.1528**	**1.0267**	**0.9157**	**3.7900e-003**	**0.2446**	**8.2100e-003**	**0.2528**	**0.0660**	**7.8100e-003**	**0.0738**		**387.6503**	**387.6503**	**0.0341**		**388.5027**

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	6.7896	57.2132	51.4666	0.0728		3.8135	3.8135		3.5584	3.5584	0.0000	6,997.7891	6,997.7891	1.9325		7,046.1024
Total	**6.7896**	**57.2132**	**51.4666**	**0.0728**		**3.8135**	**3.8135**		**3.5584**	**3.5584**	**0.0000**	**6,997.7891**	**6,997.7891**	**1.9325**		**7,046.1024**

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	0.0331	0.9449	0.1769	1.9700e-003	0.0474	6.9400e-003	0.0544	0.0137	6.6400e-003	0.0203		206.0579	206.0579	0.0286		206.7725
Worker	0.1197	0.0817	0.7389	1.8200e-003	0.1972	1.2700e-003	0.1984	0.0523	1.1700e-003	0.0535		181.5924	181.5924	5.5100e-003		181.7302
Total	**0.1528**	**1.0267**	**0.9157**	**3.7900e-003**	**0.2446**	**8.2100e-003**	**0.2528**	**0.0660**	**7.8100e-003**	**0.0738**		**387.6503**	**387.6503**	**0.0341**		**388.5027**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758		6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**		**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0269	0.8654	0.1524	1.9500e-003	0.0474	4.6600e-003	0.0521	0.0137	4.4600e-003	0.0181		204.2708	204.2708	0.0276		204.9606
Worker	0.1094	0.0720	0.6574	1.7700e-003	0.1972	1.2300e-003	0.1984	0.0523	1.1400e-003	0.0534		175.9453	175.9453	4.7900e-003		176.0650
Total	**0.1363**	**0.9374**	**0.8098**	**3.7200e-003**	**0.2446**	**5.8900e-003**	**0.2505**	**0.0660**	**5.6000e-003**	**0.0715**		**380.2161**	**380.2161**	**0.0324**		**381.0256**

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	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758	0.0000	6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**	**0.0000**	**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0269	0.8654	0.1524	1.9500e-003	0.0474	4.6600e-003	0.0521	0.0137	4.4600e-003	0.0181		204.2708	204.2708	0.0276		204.9606
Worker	0.1094	0.0720	0.6574	1.7700e-003	0.1972	1.2300e-003	0.1984	0.0523	1.1400e-003	0.0534		175.9453	175.9453	4.7900e-003		176.0650
Total	**0.1363**	**0.9374**	**0.8098**	**3.7200e-003**	**0.2446**	**5.8900e-003**	**0.2505**	**0.0660**	**5.6000e-003**	**0.0715**		**380.2161**	**380.2161**	**0.0324**		**381.0256**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7131	28.1311	29.3042	0.0456		1.5056	1.5056		1.3851	1.3851		4,415.4669	4,415.4669	1.4281		4,451.1682

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7131**	**28.1311**	**29.3042**	**0.0456**		**1.5056**	**1.5056**		**1.3851**	**1.3851**		**4,415.4669**	**4,415.4669**	**1.4281**		**4,451.1682**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7131	28.1311	29.3042	0.0456		1.5056	1.5056		1.3851	1.3851	0.0000	4,415.4669	4,415.4669	1.4281		4,451.1682
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7131**	**28.1311**	**29.3042**	**0.0456**		**1.5056**	**1.5056**		**1.3851**	**1.3851**	**0.0000**	**4,415.4669**	**4,415.4669**	**1.4281**		**4,451.1682**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	132.1156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219		562.8961	562.8961	0.0436		563.9856
Total	**132.5999**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**		**562.8961**	**562.8961**	**0.0436**		**563.9856**

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	0.0228	0.0150	0.1370	3.7000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		36.6553	36.6553	1.0000e-003		36.6802
Total	**0.0228**	**0.0150**	**0.1370**	**3.7000e-004**	**0.0411**	**2.6000e-004**	**0.0413**	**0.0109**	**2.4000e-004**	**0.0111**		**36.6553**	**36.6553**	**1.0000e-003**		**36.6802**

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	132.1156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219	0.0000	562.8961	562.8961	0.0436		563.9856
Total	**132.5999**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**562.8961**	**562.8961**	**0.0436**		**563.9856**

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	0.0228	0.0150	0.1370	3.7000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		36.6553	36.6553	1.0000e-003		36.6802
Total	**0.0228**	**0.0150**	**0.1370**	**3.7000e-004**	**0.0411**	**2.6000e-004**	**0.0413**	**0.0109**	**2.4000e-004**	**0.0111**		**36.6553**	**36.6553**	**1.0000e-003**		**36.6802**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1904	4.8524	14.6118	0.0394	3.7489	0.0422	3.7911	1.0017	0.0395	1.0413		3,983.3852	3,983.3852	0.3061		3,991.0377
Unmitigated	1.2151	5.0672	15.3639	0.0421	4.0267	0.0449	4.0717	1.0760	0.0421	1.1181		4,258.9964	4,258.9964	0.3197		4,266.9897

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	641.92	648.72	581.40	1,858,130	1,729,919
Total	641.92	648.72	581.40	1,858,130	1,729,919

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Single Family Housing	0.540200	0.197200	0.166800	0.054000	0.001600	0.000900	0.009100	0.020600	0.000000	0.004400	0.002600	0.001100	0.001500

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
NaturalGas Unmitigated	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517

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					
Single Family Housing	4870.89	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Total		**0.0525**	**0.4489**	**0.1910**	**2.8700e-003**		**0.0363**	**0.0363**		**0.0363**	**0.0363**		**573.0464**	**573.0464**	**0.0110**	**0.0105**	**576.4517**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	4.87089	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Total		**0.0525**	**0.4489**	**0.1910**	**2.8700e-003**		**0.0363**	**0.0363**		**0.0363**	**0.0363**		**573.0464**	**573.0464**	**0.0110**	**0.0105**	**576.4517**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1931	1.1927	6.0681	7.4900e-003		0.1219	0.1219		0.1219	0.1219	0.0000	1,450.0106	1,450.0106	0.0373	0.0264	1,458.8105

Unmitigated	3.1955	1.1931	6.1087	7.5000e-003		0.1222	0.1222		0.1222	0.1222	0.0000	1,450.1016	1,450.1016	0.0375	0.0264	1,458.9050

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	0.2728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6194					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1320	1.1280	0.4800	7.2000e-003		0.0912	0.0912		0.0912	0.0912	0.0000	1,440.0000	1,440.0000	0.0276	0.0264	1,448.5572
Landscaping	0.1714	0.0651	5.6287	3.0000e-004		0.0310	0.0310		0.0310	0.0310		10.1016	10.1016	9.8500e-003		10.3478
Total	**3.1955**	**1.1931**	**6.1087**	**7.5000e-003**		**0.1222**	**0.1222**		**0.1222**	**0.1222**	**0.0000**	**1,450.1016**	**1,450.1016**	**0.0375**	**0.0264**	**1,458.9050**

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	0.2728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6194					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1320	1.1280	0.4800	7.2000e-003		0.0912	0.0912		0.0912	0.0912	0.0000	1,440.0000	1,440.0000	0.0276	0.0264	1,448.5572
Landscaping	0.1690	0.0647	5.5881	2.9000e-004		0.0307	0.0307		0.0307	0.0307		10.0106	10.0106	9.7100e-003		10.2533

Total	**3.1931**	**1.1927**	**6.0681**	**7.4900e-003**		**0.1219**	**0.1219**		**0.1219**	**0.1219**	**0.0000**	**1,450.0106**	**1,450.0106**	**0.0373**	**0.0264**	**1,458.8105**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville Homes - Locan - Tract 6239 - Phase 1

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	68.00	Dwelling Unit	16.00	122,400.00	194

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - 2020 - 3/2021

Off-road Equipment - Increased equipment to account for decreased schedule from default

Off-road Equipment - Increased equipment to account for schedule reduction from default

Off-road Equipment - Increased equipment to account for decreased schedule from default

Demolition -

Architectural Coating - Rule 4601 Average VOC Content

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodstoves

Area Coating - Rule 4601 Average VOC Content

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC Content

Energy Mitigation - Assumed minimum of 5 kw solar system size per home =8441 kWh

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percebt statewude diversion/recycling mandate

Fleet Mix - Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	300.00	75.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	10.00
tblFireplaces	NumberGas	37.40	68.00
tblFireplaces	NumberNoFireplace	30.60	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.6000e-003
tblFleetMix	LHD2	4.9970e-003	9.0000e-004
tblFleetMix	MCY	5.2610e-003	2.6000e-003
tblFleetMix	MDV	0.13	0.05
tblFleetMix	MH	6.6700e-004	1.5000e-003
tblFleetMix	MHD	0.03	9.1000e-003
tblFleetMix	OBUS	2.3690e-003	0.00
tblFleetMix	SBUS	1.1150e-003	1.1000e-003

tblFleetMix	UBUS	1.6750e-003	4.4000e-003
tblLandUse	LotAcreage	22.08	16.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	30.00	15.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.9504	58.2144	52.4800	0.0769	18.2141	3.8216	20.6054	9.9699	3.5661	12.1699	0.0000	7,417.6547	7,417.6547	1.9640	0.0000	7,466.7556
2020	132.6245	53.0723	51.6246	0.0768	0.2446	3.3018	3.5464	0.0660	3.0813	3.1473	0.0000	7,287.9482	7,287.9482	1.9416	0.0000	7,336.4875
Maximum	**132.6245**	**58.2144**	**52.4800**	**0.0769**	**18.2141**	**3.8216**	**20.6054**	**9.9699**	**3.5661**	**12.1699**	**0.0000**	**7,417.6547**	**7,417.6547**	**1.9640**	**0.0000**	**7,466.7556**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	6.9504	58.2144	52.4800	0.0769	18.2141	3.8216	20.6054	9.9699	3.5661	12.1699	0.0000	7,417.6547	7,417.6547	1.9640	0.0000	7,466.7556
2020	132.6245	53.0723	51.6246	0.0768	0.2446	3.3018	3.5464	0.0660	3.0813	3.1473	0.0000	7,287.9482	7,287.9482	1.9416	0.0000	7,336.4875
Maximum	**132.6245**	**58.2144**	**52.4800**	**0.0769**	**18.2141**	**3.8216**	**20.6054**	**9.9699**	**3.5661**	**12.1699**	**0.0000**	**7,417.6547**	**7,417.6547**	**1.9640**	**0.0000**	**7,466.7556**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	3.1955	1.1931	6.1087	7.5000e-003		0.1222	0.1222		0.1222	0.1222	0.0000	1,450.1016	1,450.1016	0.0375	0.0264	1,458.9050
Energy	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Mobile	1.7188	4.7745	17.0341	0.0472	4.0267	0.0446	4.0713	1.0760	0.0418	1.1178		4,763.3668	4,763.3668	0.3173		4,771.2986
Total	**4.9669**	**6.4165**	**23.3338**	**0.0575**	**4.0267**	**0.2030**	**4.2298**	**1.0760**	**0.2003**	**1.2762**	**0.0000**	**6,786.5147**	**6,786.5147**	**0.3657**	**0.0369**	**6,806.6553**

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	3.1931	1.1927	6.0681	7.4900e-003		0.1219	0.1219		0.1219	0.1219	0.0000	1,450.0106	1,450.0106	0.0373	0.0264	1,458.8105
Energy	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Mobile	1.6917	4.5811	16.0675	0.0441	3.7489	0.0419	3.7907	1.0017	0.0392	1.0410		4,454.6762	4,454.6762	0.3025		4,462.2389
Total	**4.9373**	**6.2227**	**22.3266**	**0.0545**	**3.7489**	**0.2001**	**3.9489**	**1.0017**	**0.1974**	**1.1992**	**0.0000**	**6,477.7332**	**6,477.7332**	**0.3508**	**0.0369**	**6,497.5011**

	ROG	NOx	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	**0.60**	**3.02**	**4.32**	**5.34**	**6.90**	**1.47**	**6.64**	**6.90**	**1.41**	**6.04**	**0.00**	**4.55**	**4.55**	**4.07**	**0.00**	**4.54**

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	9/23/2019	10/4/2019	5	10	
2	Grading	Grading	10/5/2019	11/15/2019	5	30	
3	Building Construction	Building Construction	11/16/2019	2/28/2020	5	75	
4	Paving	Paving	2/29/2020	3/13/2020	5	10	
5	Architectural Coating	Architectural Coating	3/14/2020	3/27/2020	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 0

Residential Indoor: 247,860; Residential Outdoor: 82,620; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	4	8.00	130	0.42
Paving	Paving Equipment	4	8.00	132	0.36
Paving	Rollers	4	8.00	80	0.38
Architectural Coating	Air Compressors	2	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	30	24.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	12	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0968	0.0521	0.6474	1.5600e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		155.3904	155.3904	4.6700e-003		155.5072
Total	**0.0968**	**0.0521**	**0.6474**	**1.5600e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**155.3904**	**155.3904**	**4.6700e-003**		**155.5072**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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	0.0968	0.0521	0.6474	1.5600e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		155.3904	155.3904	4.6700e-003		155.5072
Total	**0.0968**	**0.0521**	**0.6474**	**1.5600e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**155.3904**	**155.3904**	**4.6700e-003**		**155.5072**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920		6,140.0195	6,140.0195	1.9426		6,188.5854

Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**		**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	0.1076	0.0579	0.7194	1.7400e-003	0.1643	1.0600e-003	0.1654	0.0436	9.8000e-004	0.0446		172.6560	172.6560	5.1900e-003		172.7857
Total	**0.1076**	**0.0579**	**0.7194**	**1.7400e-003**	**0.1643**	**1.0600e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**172.6560**	**172.6560**	**5.1900e-003**		**172.7857**

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.7389	54.5202	33.3768	0.0620		2.3827	2.3827		2.1920	2.1920	0.0000	6,140.0195	6,140.0195	1.9426		6,188.5854
Total	**4.7389**	**54.5202**	**33.3768**	**0.0620**	**8.6733**	**2.3827**	**11.0560**	**3.5965**	**2.1920**	**5.7885**	**0.0000**	**6,140.0195**	**6,140.0195**	**1.9426**		**6,188.5854**

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	0.1076	0.0579	0.7194	1.7400e-003	0.1643	1.0600e-003	0.1654	0.0436	9.8000e-004	0.0446		172.6560	172.6560	5.1900e-003		172.7857
Total	**0.1076**	**0.0579**	**0.7194**	**1.7400e-003**	**0.1643**	**1.0600e-003**	**0.1654**	**0.0436**	**9.8000e-004**	**0.0446**		**172.6560**	**172.6560**	**5.1900e-003**		**172.7857**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.7896	57.2132	51.4666	0.0728		3.8135	3.8135		3.5584	3.5584		6,997.7891	6,997.7891	1.9325		7,046.1024
Total	**6.7896**	**57.2132**	**51.4666**	**0.0728**		**3.8135**	**3.8135**		**3.5584**	**3.5584**		**6,997.7891**	**6,997.7891**	**1.9325**		**7,046.1024**

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	0.0318	0.9318	0.1501	2.0300e-003	0.0474	6.8100e-003	0.0542	0.0137	6.5200e-003	0.0202		212.6783	212.6783	0.0253		213.3104
Worker	0.1291	0.0695	0.8632	2.0800e-003	0.1972	1.2700e-003	0.1984	0.0523	1.1700e-003	0.0535		207.1872	207.1872	6.2300e-003		207.3429
Total	**0.1609**	**1.0012**	**1.0133**	**4.1100e-003**	**0.2446**	**8.0800e-003**	**0.2527**	**0.0660**	**7.6900e-003**	**0.0736**		**419.8655**	**419.8655**	**0.0315**		**420.6532**

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	6.7896	57.2132	51.4666	0.0728		3.8135	3.8135		3.5584	3.5584	0.0000	6,997.7891	6,997.7891	1.9325		7,046.1024
Total	**6.7896**	**57.2132**	**51.4666**	**0.0728**		**3.8135**	**3.8135**		**3.5584**	**3.5584**	**0.0000**	**6,997.7891**	**6,997.7891**	**1.9325**		**7,046.1024**

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	0.0318	0.9318	0.1501	2.0300e-003	0.0474	6.8100e-003	0.0542	0.0137	6.5200e-003	0.0202		212.6783	212.6783	0.0253		213.3104
Worker	0.1291	0.0695	0.8632	2.0800e-003	0.1972	1.2700e-003	0.1984	0.0523	1.1700e-003	0.0535		207.1872	207.1872	6.2300e-003		207.3429
Total	**0.1609**	**1.0012**	**1.0133**	**4.1100e-003**	**0.2446**	**8.0800e-003**	**0.2527**	**0.0660**	**7.6900e-003**	**0.0736**		**419.8655**	**419.8655**	**0.0315**		**420.6532**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758		6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**		**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0258	0.8555	0.1282	2.0100e-003	0.0474	4.5600e-003	0.0520	0.0137	4.3600e-003	0.0180		210.8641	210.8641	0.0244		211.4730
Worker	0.1179	0.0612	0.7718	2.0200e-003	0.1972	1.2300e-003	0.1984	0.0523	1.1400e-003	0.0534		200.7584	200.7584	5.4300e-003		200.8942
Total	**0.1436**	**0.9167**	**0.9000**	**4.0300e-003**	**0.2446**	**5.7900e-003**	**0.2504**	**0.0660**	**5.5000e-003**	**0.0715**		**411.6225**	**411.6225**	**0.0298**		**412.3672**

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	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758	0.0000	6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**	**0.0000**	**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0258	0.8555	0.1282	2.0100e-003	0.0474	4.5600e-003	0.0520	0.0137	4.3600e-003	0.0180		210.8641	210.8641	0.0244		211.4730
Worker	0.1179	0.0612	0.7718	2.0200e-003	0.1972	1.2300e-003	0.1984	0.0523	1.1400e-003	0.0534		200.7584	200.7584	5.4300e-003		200.8942
Total	**0.1436**	**0.9167**	**0.9000**	**4.0300e-003**	**0.2446**	**5.7900e-003**	**0.2504**	**0.0660**	**5.5000e-003**	**0.0715**		**411.6225**	**411.6225**	**0.0298**		**412.3672**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7131	28.1311	29.3042	0.0456		1.5056	1.5056		1.3851	1.3851		4,415.4669	4,415.4669	1.4281		4,451.1682

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7131**	**28.1311**	**29.3042**	**0.0456**		**1.5056**	**1.5056**		**1.3851**	**1.3851**		**4,415.4669**	**4,415.4669**	**1.4281**		**4,451.1682**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7131	28.1311	29.3042	0.0456		1.5056	1.5056		1.3851	1.3851	0.0000	4,415.4669	4,415.4669	1.4281		4,451.1682
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7131**	**28.1311**	**29.3042**	**0.0456**		**1.5056**	**1.5056**		**1.3851**	**1.3851**	**0.0000**	**4,415.4669**	**4,415.4669**	**1.4281**		**4,451.1682**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	132.1156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219		562.8961	562.8961	0.0436		563.9856
Total	**132.5999**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**		**562.8961**	**562.8961**	**0.0436**		**563.9856**

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	0.0246	0.0128	0.1608	4.2000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		41.8247	41.8247	1.1300e-003		41.8530
Total	**0.0246**	**0.0128**	**0.1608**	**4.2000e-004**	**0.0411**	**2.6000e-004**	**0.0413**	**0.0109**	**2.4000e-004**	**0.0111**		**41.8247**	**41.8247**	**1.1300e-003**		**41.8530**

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	132.1156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4844	3.3677	3.6628	5.9400e-003		0.2219	0.2219		0.2219	0.2219	0.0000	562.8961	562.8961	0.0436		563.9856
Total	**132.5999**	**3.3677**	**3.6628**	**5.9400e-003**		**0.2219**	**0.2219**		**0.2219**	**0.2219**	**0.0000**	**562.8961**	**562.8961**	**0.0436**		**563.9856**

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	0.0246	0.0128	0.1608	4.2000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		41.8247	41.8247	1.1300e-003		41.8530
Total	**0.0246**	**0.0128**	**0.1608**	**4.2000e-004**	**0.0411**	**2.6000e-004**	**0.0413**	**0.0109**	**2.4000e-004**	**0.0111**		**41.8247**	**41.8247**	**1.1300e-003**		**41.8530**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6917	4.5811	16.0675	0.0441	3.7489	0.0419	3.7907	1.0017	0.0392	1.0410		4,454.6762	4,454.6762	0.3025		4,462.2389
Unmitigated	1.7188	4.7745	17.0341	0.0472	4.0267	0.0446	4.0713	1.0760	0.0418	1.1178		4,763.3668	4,763.3668	0.3173		4,771.2986

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	641.92	648.72	581.40	1,858,130	1,729,919
Total	641.92	648.72	581.40	1,858,130	1,729,919

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Single Family Housing	0.540200	0.197200	0.166800	0.054000	0.001600	0.000900	0.009100	0.020600	0.000000	0.004400	0.002600	0.001100	0.001500

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
NaturalGas Unmitigated	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517

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					
Single Family Housing	4870.89	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Total		**0.0525**	**0.4489**	**0.1910**	**2.8700e-003**		**0.0363**	**0.0363**		**0.0363**	**0.0363**		**573.0464**	**573.0464**	**0.0110**	**0.0105**	**576.4517**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	4.87089	0.0525	0.4489	0.1910	2.8700e-003		0.0363	0.0363		0.0363	0.0363		573.0464	573.0464	0.0110	0.0105	576.4517
Total		**0.0525**	**0.4489**	**0.1910**	**2.8700e-003**		**0.0363**	**0.0363**		**0.0363**	**0.0363**		**573.0464**	**573.0464**	**0.0110**	**0.0105**	**576.4517**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1931	1.1927	6.0681	7.4900e-003		0.1219	0.1219		0.1219	0.1219	0.0000	1,450.0106	1,450.0106	0.0373	0.0264	1,458.8105

Unmitigated	3.1955	1.1931	6.1087	7.5000e-003		0.1222	0.1222		0.1222	0.1222	0.0000	1,450.1016	1,450.1016	0.0375	0.0264	1,458.9050

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	0.2728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6194					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1320	1.1280	0.4800	7.2000e-003		0.0912	0.0912		0.0912	0.0912	0.0000	1,440.0000	1,440.0000	0.0276	0.0264	1,448.5572
Landscaping	0.1714	0.0651	5.6287	3.0000e-004		0.0310	0.0310		0.0310	0.0310		10.1016	10.1016	9.8500e-003		10.3478
Total	**3.1955**	**1.1931**	**6.1087**	**7.5000e-003**		**0.1222**	**0.1222**		**0.1222**	**0.1222**	**0.0000**	**1,450.1016**	**1,450.1016**	**0.0375**	**0.0264**	**1,458.9050**

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	0.2728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.6194					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1320	1.1280	0.4800	7.2000e-003		0.0912	0.0912		0.0912	0.0912	0.0000	1,440.0000	1,440.0000	0.0276	0.0264	1,448.5572
Landscaping	0.1690	0.0647	5.5881	2.9000e-004		0.0307	0.0307		0.0307	0.0307		10.0106	10.0106	9.7100e-003		10.2533

Total	**3.1931**	**1.1927**	**6.0681**	**7.4900e-003**		**0.1219**	**0.1219**		**0.1219**	**0.1219**	**0.0000**	**1,450.0106**	**1,450.0106**	**0.0373**	**0.0264**	**1,458.8105**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville_Locan_Tract_6239_Phase2 - Fresno County, Annual

Granville_Locan_Tract_6239_Phase2

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	94.00	Dwelling Unit	29.00	169,200.00	269

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - Construction to go from 4/2020 - 3/2021

Off-road Equipment - increased equipment to account for reduced construction schedule from default

Architectural Coating - Avg VOC Content - Rule 4601

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning

Area Coating - Avg VOC Content - Rule 4601

Mobile Land Use Mitigation -

Area Mitigation - Avg VOC Content - Rule 4601

Energy Mitigation - Assumed 3 kw solar sytem size for homes

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2021

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	440.00	115.00
tblFireplaces	NumberGas	51.70	94.00
tblFireplaces	NumberNoFireplace	42.30	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	30.52	29.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00

tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2020	0.5144	4.7296	4.0396	6.4900e-003	0.4011	0.2662	0.6673	0.1870	0.2474	0.4345	0.0000	562.8508	562.8508	0.1571	0.0000	566.7792
2021	0.7063	0.1631	0.1927	3.1000e-004	2.2400e-003	8.7800e-003	0.0110	5.9000e-004	8.2100e-003	8.8000e-003	0.0000	27.3639	27.3639	7.1500e-003	0.0000	27.5427
Maximum	**0.7063**	**4.7296**	**4.0396**	**6.4900e-003**	**0.4011**	**0.2662**	**0.6673**	**0.1870**	**0.2474**	**0.4345**	**0.0000**	**562.8508**	**562.8508**	**0.1571**	**0.0000**	**566.7792**

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					
2020	0.5144	4.7296	4.0396	6.4900e-003	0.4011	0.2662	0.6673	0.1870	0.2474	0.4345	0.0000	562.8502	562.8502	0.1571	0.0000	566.7785
2021	0.7063	0.1631	0.1927	3.1000e-004	2.2400e-003	8.7800e-003	0.0110	5.9000e-004	8.2100e-003	8.8000e-003	0.0000	27.3639	27.3639	7.1500e-003	0.0000	27.5427
Maximum	**0.7063**	**4.7296**	**4.0396**	**6.4900e-003**	**0.4011**	**0.2662**	**0.6673**	**0.1870**	**0.2474**	**0.4345**	**0.0000**	**562.8502**	**562.8502**	**0.1571**	**0.0000**	**566.7785**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-6-2020**	**7-5-2020**	1.7086	1.7086
2	**7-6-2020**	**10-5-2020**	1.9636	1.9636
3	**10-6-2020**	**1-5-2021**	1.5669	1.5669
4	**1-6-2021**	**4-5-2021**	0.8419	0.8419
		Highest	1.9636	1.9636

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	0.7583	0.0720	0.7267	4.4000e-004		9.0200e-003	9.0200e-003		9.0200e-003	9.0200e-003	0.0000	75.1792	75.1792	2.5200e-003	1.3600e-003	75.6468
Energy	0.0133	0.1132	0.0482	7.2000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	370.7181	370.7181	0.0134	4.6500e-003	372.4361
Mobile	0.3011	1.1010	3.4207	0.0104	0.9638	9.3500e-003	0.9731	0.2580	8.7400e-003	0.2668	0.0000	953.9741	953.9741	0.0660	0.0000	955.6244
Waste						0.0000	0.0000		0.0000	0.0000	19.6576	0.0000	19.6576	1.1617	0.0000	48.7010
Water						0.0000	0.0000		0.0000	0.0000	1.9430	13.5720	15.5150	0.2002	4.8400e-003	21.9616
Total	**1.0726**	**1.2863**	**4.1956**	**0.0116**	**0.9638**	**0.0275**	**0.9913**	**0.2580**	**0.0269**	**0.2849**	**21.6007**	**1,413.4433**	**1,435.0440**	**1.4438**	**0.0109**	**1,474.3699**

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	0.7580	0.0720	0.7216	4.4000e-004		9.0000e-003	9.0000e-003		9.0000e-003	9.0000e-003	0.0000	75.1689	75.1689	2.5100e-003	1.3600e-003	75.6361
Energy	0.0133	0.1132	0.0482	7.2000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	139.8932	139.8932	2.9100e-003	2.4900e-003	140.7068
Mobile	0.2955	1.0568	3.2404	9.7200e-003	0.8973	8.7800e-003	0.9061	0.2402	8.2100e-003	0.2484	0.0000	892.3612	892.3612	0.0631	0.0000	893.9389
Waste						0.0000	0.0000		0.0000	0.0000	4.9144	0.0000	4.9144	0.2904	0.0000	12.1753
Water						0.0000	0.0000		0.0000	0.0000	1.5544	11.4041	12.9585	0.1602	3.8800e-003	18.1179
Total	**1.0667**	**1.2420**	**4.0102**	**0.0109**	**0.8973**	**0.0269**	**0.9242**	**0.2402**	**0.0264**	**0.2666**	**6.4688**	**1,118.8274**	**1,125.2962**	**0.5191**	**7.7300e-003**	**1,140.5749**

	ROG	NOx	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	**0.55**	**3.44**	**4.42**	**5.80**	**6.90**	**2.14**	**6.77**	**6.90**	**2.04**	**6.44**	**70.05**	**20.84**	**21.58**	**64.04**	**28.76**	**22.64**

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	4/6/2020	5/1/2020	5	20	
2	Grading	Grading	5/2/2020	7/3/2020	5	45	
3	Building Construction	Building Construction	7/4/2020	12/11/2020	5	115	
4	Paving	Paving	12/12/2020	1/29/2021	5	35	
5	Architectural Coating	Architectural Coating	1/30/2021	3/19/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 342,630; Residential Outdoor: 114,210; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	12	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	30	34.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0408	0.4242	0.2151	3.8000e-004		0.0220	0.0220		0.0202	0.0202	0.0000	33.4307	33.4307	0.0108	0.0000	33.7010
Total	**0.0408**	**0.4242**	**0.2151**	**3.8000e-004**	**0.1807**	**0.0220**	**0.2026**	**0.0993**	**0.0202**	**0.1195**	**0.0000**	**33.4307**	**33.4307**	**0.0108**	**0.0000**	**33.7010**

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	7.8000e-004	4.9000e-004	5.0000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2455	1.2455	3.0000e-005	0.0000	1.2463
Total	**7.8000e-004**	**4.9000e-004**	**5.0000e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2455**	**1.2455**	**3.0000e-005**	**0.0000**	**1.2463**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0408	0.4242	0.2151	3.8000e-004		0.0220	0.0220		0.0202	0.0202	0.0000	33.4306	33.4306	0.0108	0.0000	33.7009
Total	**0.0408**	**0.4242**	**0.2151**	**3.8000e-004**	**0.1807**	**0.0220**	**0.2026**	**0.0993**	**0.0202**	**0.1195**	**0.0000**	**33.4306**	**33.4306**	**0.0108**	**0.0000**	**33.7009**

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	7.8000e-004	4.9000e-004	5.0000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2455	1.2455	3.0000e-005	0.0000	1.2463
Total	**7.8000e-004**	**4.9000e-004**	**5.0000e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2455**	**1.2455**	**3.0000e-005**	**0.0000**	**1.2463**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1001	1.1294	0.7191	1.4000e-003		0.0489	0.0489		0.0450	0.0450	0.0000	122.5897	122.5897	0.0397	0.0000	123.5809

Total	**0.1001**	**1.1294**	**0.7191**	**1.4000e-003**	**0.1952**	**0.0489**	**0.2441**	**0.0809**	**0.0450**	**0.1259**	**0.0000**	**122.5897**	**122.5897**	**0.0397**	**0.0000**	**123.5809**

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	1.9400e-003	1.2300e-003	0.0125	3.0000e-005	3.6000e-003	2.0000e-005	3.6200e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.1137	3.1137	8.0000e-005	0.0000	3.1158
Total	**1.9400e-003**	**1.2300e-003**	**0.0125**	**3.0000e-005**	**3.6000e-003**	**2.0000e-005**	**3.6200e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**3.1137**	**3.1137**	**8.0000e-005**	**0.0000**	**3.1158**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1952	0.0000	0.1952	0.0809	0.0000	0.0809	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1001	1.1294	0.7191	1.4000e-003		0.0489	0.0489		0.0450	0.0450	0.0000	122.5895	122.5895	0.0397	0.0000	123.5807
Total	**0.1001**	**1.1294**	**0.7191**	**1.4000e-003**	**0.1952**	**0.0489**	**0.2441**	**0.0809**	**0.0450**	**0.1259**	**0.0000**	**122.5895**	**122.5895**	**0.0397**	**0.0000**	**123.5807**

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	1.9400e-003	1.2300e-003	0.0125	3.0000e-005	3.6000e-003	2.0000e-005	3.6200e-003	9.6000e-004	2.0000e-005	9.8000e-004	0.0000	3.1137	3.1137	8.0000e-005	0.0000	3.1158
Total	**1.9400e-003**	**1.2300e-003**	**0.0125**	**3.0000e-005**	**3.6000e-003**	**2.0000e-005**	**3.6200e-003**	**9.6000e-004**	**2.0000e-005**	**9.8000e-004**	**0.0000**	**3.1137**	**3.1137**	**8.0000e-005**	**0.0000**	**3.1158**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3503	2.9990	2.9167	4.1800e-003		0.1895	0.1895		0.1769	0.1769	0.0000	358.6906	358.6906	0.0997	0.0000	361.1837
Total	**0.3503**	**2.9990**	**2.9167**	**4.1800e-003**		**0.1895**	**0.1895**		**0.1769**	**0.1769**	**0.0000**	**358.6906**	**358.6906**	**0.0997**	**0.0000**	**361.1837**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0713	0.0114	1.6000e-004	3.8100e-003	3.8000e-004	4.1900e-003	1.1000e-003	3.6000e-004	1.4600e-003	0.0000	15.5069	15.5069	1.9200e-003	0.0000	15.5549
Worker	8.4400e-003	5.3500e-003	0.0543	1.5000e-004	0.0156	1.0000e-004	0.0157	4.1500e-003	9.0000e-005	4.2500e-003	0.0000	13.5274	13.5274	3.6000e-004	0.0000	13.5365
Total	**0.0106**	**0.0766**	**0.0657**	**3.1000e-004**	**0.0194**	**4.8000e-004**	**0.0199**	**5.2500e-003**	**4.5000e-004**	**5.7100e-003**	**0.0000**	**29.0343**	**29.0343**	**2.2800e-003**	**0.0000**	**29.0913**

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	0.3503	2.9989	2.9167	4.1800e-003		0.1895	0.1895		0.1769	0.1769	0.0000	358.6902	358.6902	0.0997	0.0000	361.1833
Total	**0.3503**	**2.9989**	**2.9167**	**4.1800e-003**		**0.1895**	**0.1895**		**0.1769**	**0.1769**	**0.0000**	**358.6902**	**358.6902**	**0.0997**	**0.0000**	**361.1833**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0713	0.0114	1.6000e-004	3.8100e-003	3.8000e-004	4.1900e-003	1.1000e-003	3.6000e-004	1.4600e-003	0.0000	15.5069	15.5069	1.9200e-003	0.0000	15.5549
Worker	8.4400e-003	5.3500e-003	0.0543	1.5000e-004	0.0156	1.0000e-004	0.0157	4.1500e-003	9.0000e-005	4.2500e-003	0.0000	13.5274	13.5274	3.6000e-004	0.0000	13.5365
Total	**0.0106**	**0.0766**	**0.0657**	**3.1000e-004**	**0.0194**	**4.8000e-004**	**0.0199**	**5.2500e-003**	**4.5000e-004**	**5.7100e-003**	**0.0000**	**29.0343**	**29.0343**	**2.2800e-003**	**0.0000**	**29.0913**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-003	0.0985	0.1026	1.6000e-004		5.2700e-003	5.2700e-003		4.8500e-003	4.8500e-003	0.0000	14.0198	14.0198	4.5300e-003	0.0000	14.1331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5000e-003**	**0.0985**	**0.1026**	**1.6000e-004**		**5.2700e-003**	**5.2700e-003**		**4.8500e-003**	**4.8500e-003**	**0.0000**	**14.0198**	**14.0198**	**4.5300e-003**	**0.0000**	**14.1331**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.9000e-004	2.9200e-003	1.0000e-005	8.4000e-004	1.0000e-005	8.4000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.7265	0.7265	2.0000e-005	0.0000	0.7270
Total	**4.5000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**8.4000e-004**	**1.0000e-005**	**8.4000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.7265**	**0.7265**	**2.0000e-005**	**0.0000**	**0.7270**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5000e-003	0.0985	0.1026	1.6000e-004		5.2700e-003	5.2700e-003		4.8500e-003	4.8500e-003	0.0000	14.0197	14.0197	4.5300e-003	0.0000	14.1331
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5000e-003**	**0.0985**	**0.1026**	**1.6000e-004**		**5.2700e-003**	**5.2700e-003**		**4.8500e-003**	**4.8500e-003**	**0.0000**	**14.0197**	**14.0197**	**4.5300e-003**	**0.0000**	**14.1331**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.9000e-004	2.9200e-003	1.0000e-005	8.4000e-004	1.0000e-005	8.4000e-004	2.2000e-004	0.0000	2.3000e-004	0.0000	0.7265	0.7265	2.0000e-005	0.0000	0.7270
Total	**4.5000e-004**	**2.9000e-004**	**2.9200e-003**	**1.0000e-005**	**8.4000e-004**	**1.0000e-005**	**8.4000e-004**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**0.0000**	**0.7265**	**0.7265**	**2.0000e-005**	**0.0000**	**0.7270**

3.5 Paving - 2021

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	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0247	21.0247	6.8000e-003	0.0000	21.1947

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0247**	**21.0247**	**6.8000e-003**	**0.0000**	**21.1947**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	3.8000e-004	3.9700e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0525	1.0525	3.0000e-005	0.0000	1.0531
Total	**6.3000e-004**	**3.8000e-004**	**3.9700e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0525**	**1.0525**	**3.0000e-005**	**0.0000**	**1.0531**

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	0.0132	0.1357	0.1539	2.4000e-004		7.1200e-003	7.1200e-003		6.5500e-003	6.5500e-003	0.0000	21.0246	21.0246	6.8000e-003	0.0000	21.1946
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.1357**	**0.1539**	**2.4000e-004**		**7.1200e-003**	**7.1200e-003**		**6.5500e-003**	**6.5500e-003**	**0.0000**	**21.0246**	**21.0246**	**6.8000e-003**	**0.0000**	**21.1946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	3.8000e-004	3.9700e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0525	1.0525	3.0000e-005	0.0000	1.0531
Total	**6.3000e-004**	**3.8000e-004**	**3.9700e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0525**	**1.0525**	**3.0000e-005**	**0.0000**	**1.0531**

3.6 Architectural Coating - 2021

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	0.6882					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8300e-003	0.0267	0.0318	5.0000e-005		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	4.4682	4.4682	3.1000e-004	0.0000	4.4759
Total	**0.6920**	**0.0267**	**0.0318**	**5.0000e-005**		**1.6500e-003**	**1.6500e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**4.4682**	**4.4682**	**3.1000e-004**	**0.0000**	**4.4759**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.0900e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8186	0.8186	2.0000e-005	0.0000	0.8191
Total	**4.9000e-004**	**3.0000e-004**	**3.0900e-003**	**1.0000e-005**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8186**	**0.8186**	**2.0000e-005**	**0.0000**	**0.8191**

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	0.6882					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8300e-003	0.0267	0.0318	5.0000e-005		1.6500e-003	1.6500e-003		1.6500e-003	1.6500e-003	0.0000	4.4682	4.4682	3.1000e-004	0.0000	4.4759
Total	**0.6920**	**0.0267**	**0.0318**	**5.0000e-005**		**1.6500e-003**	**1.6500e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**4.4682**	**4.4682**	**3.1000e-004**	**0.0000**	**4.4759**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.0900e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8186	0.8186	2.0000e-005	0.0000	0.8191
Total	**4.9000e-004**	**3.0000e-004**	**3.0900e-003**	**1.0000e-005**	**9.8000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8186**	**0.8186**	**2.0000e-005**	**0.0000**	**0.8191**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2955	1.0568	3.2404	9.7200e-003	0.8973	8.7800e-003	0.9061	0.2402	8.2100e-003	0.2484	0.0000	892.3612	892.3612	0.0631	0.0000	893.9389
Unmitigated	0.3011	1.1010	3.4207	0.0104	0.9638	9.3500e-003	0.9731	0.2580	8.7400e-003	0.2668	0.0000	953.9741	953.9741	0.0660	0.0000	955.6244

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	887.36	896.76	803.70	2,568,592	2,391,359
Total	887.36	896.76	803.70	2,568,592	2,391,359

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600		

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	8.7435	8.7435	4.0000e-004	8.0000e-005	8.7778
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	239.5684	239.5684	0.0108	2.2400e-003	240.5071
NaturalGas Mitigated	0.0133	0.1132	0.0482	7.2000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1497	131.1497	2.5100e-003	2.4000e-003	131.9291
NaturalGas Unmitigated	0.0133	0.1132	0.0482	7.2000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1497	131.1497	2.5100e-003	2.4000e-003	131.9291

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.45765e+006	0.0133	0.1132	0.0482	7.2000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1497	131.1497	2.5100e-003	2.4000e-003	131.9291
Total		**0.0133**	**0.1132**	**0.0482**	**7.2000e-004**		**9.1600e-003**	**9.1600e-003**		**9.1600e-003**	**9.1600e-003**	**0.0000**	**131.1497**	**131.1497**	**2.5100e-003**	**2.4000e-003**	**131.9291**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.45765e+006	0.0133	0.1132	0.0482	7.2000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1497	131.1497	2.5100e-003	2.4000e-003	131.9291
Total		**0.0133**	**0.1132**	**0.0482**	**7.2000e-004**		**9.1600e-003**	**9.1600e-003**		**9.1600e-003**	**9.1600e-003**	**0.0000**	**131.1497**	**131.1497**	**2.5100e-003**	**2.4000e-003**	**131.9291**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	823510	239.5684	0.0108	2.2400e-003	240.5071
Total		**239.5684**	**0.0108**	**2.2400e-003**	**240.5071**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	30055.6	8.7435	4.0000e-004	8.0000e-005	8.7778
Total		**8.7435**	**4.0000e-004**	**8.0000e-005**	**8.7778**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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	0.7580	0.0720	0.7216	4.4000e-004		9.0000e-003	9.0000e-003		9.0000e-003	9.0000e-003	0.0000	75.1689	75.1689	2.5100e-003	1.3600e-003	75.6361
Unmitigated	0.7583	0.0720	0.7267	4.4000e-004		9.0200e-003	9.0200e-003		9.0200e-003	9.0200e-003	0.0000	75.1792	75.1792	2.5200e-003	1.3600e-003	75.6468

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	0.0688					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6608					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.4800e-003	0.0639	0.0272	4.1000e-004		5.1700e-003	5.1700e-003		5.1700e-003	5.1700e-003	0.0000	74.0391	74.0391	1.4200e-003	1.3600e-003	74.4791
Landscaping	0.0212	8.0700e-003	0.6995	4.0000e-005		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	1.1401	1.1401	1.1000e-003	0.0000	1.1677
Total	**0.7583**	**0.0720**	**0.7267**	**4.5000e-004**		**9.0300e-003**	**9.0300e-003**		**9.0300e-003**	**9.0300e-003**	**0.0000**	**75.1792**	**75.1792**	**2.5200e-003**	**1.3600e-003**	**75.6468**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0688					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6608					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.4800e-003	0.0639	0.0272	4.1000e-004		5.1700e-003	5.1700e-003		5.1700e-003	5.1700e-003	0.0000	74.0391	74.0391	1.4200e-003	1.3600e-003	74.4791
Landscaping	0.0209	8.0200e-003	0.6944	4.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003	0.0000	1.1298	1.1298	1.0900e-003	0.0000	1.1571
Total	**0.7580**	**0.0720**	**0.7216**	**4.5000e-004**		**9.0000e-003**	**9.0000e-003**		**9.0000e-003**	**9.0000e-003**	**0.0000**	**75.1689**	**75.1689**	**2.5100e-003**	**1.3600e-003**	**75.6361**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.9585	0.1602	3.8800e-003	18.1179
Unmitigated	15.5150	0.2002	4.8400e-003	21.9616

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	6.12448 / 3.86108	15.5150	0.2002	4.8400e-003	21.9616
Total		**15.5150**	**0.2002**	**4.8400e-003**	**21.9616**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Single Family Housing	4.89958 / 3.62556	12.9585	0.1602	3.8800e-003	18.1179
Total		**12.9585**	**0.1602**	**3.8800e-003**	**18.1179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.9144	0.2904	0.0000	12.1753
Unmitigated	19.6576	1.1617	0.0000	48.7010

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Single Family Housing	96.84	19.6576	1.1617	0.0000	48.7010
Total		**19.6576**	**1.1617**	**0.0000**	**48.7010**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	24.21	4.9144	0.2904	0.0000	12.1753
Total		**4.9144**	**0.2904**	**0.0000**	**12.1753**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville_Locan_Tract_6239_Phase2 - Fresno County, Winter

Granville_Locan_Tract_6239_Phase2

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	94.00	Dwelling Unit	29.00	169,200.00	269

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - Construction to go from 4/2020 - 3/2021

Off-road Equipment - increased equipment to account for reduced construction schedule from default

Architectural Coating - Avg VOC Content - Rule 4601

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning

Area Coating - Avg VOC Content - Rule 4601

Mobile Land Use Mitigation -

Area Mitigation - Avg VOC Content - Rule 4601

Energy Mitigation - Assumed 3 kw solar sytem size for homes

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2021

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	440.00	115.00
tblFireplaces	NumberGas	51.70	94.00
tblFireplaces	NumberNoFireplace	42.30	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	30.52	29.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00

tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2020	6.2854	53.4938	51.8735	0.0781	18.2141	3.3044	20.4125	9.9699	3.0838	11.9924	0.0000	7,417.3970	7,417.3970	1.9580	0.0000	7,466.3465
2021	39.5725	12.9591	15.0253	0.0239	0.1232	0.6785	0.8017	0.0327	0.6242	0.6569	0.0000	2,313.4094	2,313.4094	0.7165	0.0000	2,331.3222
Maximum	**39.5725**	**53.4938**	**51.8735**	**0.0781**	**18.2141**	**3.3044**	**20.4125**	**9.9699**	**3.0838**	**11.9924**	**0.0000**	**7,417.3970**	**7,417.3970**	**1.9580**	**0.0000**	**7,466.3465**

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					
2020	6.2854	53.4938	51.8735	0.0781	18.2141	3.3044	20.4125	9.9699	3.0838	11.9924	0.0000	7,417.3970	7,417.3970	1.9580	0.0000	7,466.3465
2021	39.5725	12.9591	15.0253	0.0239	0.1232	0.6785	0.8017	0.0327	0.6242	0.6569	0.0000	2,313.4094	2,313.4094	0.7165	0.0000	2,331.3222
Maximum	**39.5725**	**53.4938**	**51.8735**	**0.0781**	**18.2141**	**3.3044**	**20.4125**	**9.9699**	**3.0838**	**11.9924**	**0.0000**	**7,417.3970**	**7,417.3970**	**1.9580**	**0.0000**	**7,466.3465**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	4.4159	1.6490	8.4355	0.0104		0.1689	0.1689		0.1689	0.1689	0.0000	2,004.5522	2,004.5522	0.0517	0.0365	2,016.7195
Energy	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Mobile	1.5373	6.3535	19.3856	0.0564	5.5634	0.0528	5.6163	1.4861	0.0494	1.5355		5,713.4450	5,713.4450	0.4179		5,723.8933
Total	**6.0258**	**8.6230**	**28.0852**	**0.0708**	**5.5634**	**0.2719**	**5.8354**	**1.4861**	**0.2685**	**1.7546**	**0.0000**	**8,510.1494**	**8,510.1494**	**0.4848**	**0.0510**	**8,537.4725**

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	4.4126	1.6484	8.3795	0.0104		0.1686	0.1686		0.1686	0.1686	0.0000	2,004.4264	2,004.4264	0.0515	0.0365	2,016.5889
Energy	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Mobile	1.5066	6.0928	18.4323	0.0528	5.1796	0.0497	5.2292	1.3836	0.0464	1.4300		5,343.9702	5,343.9702	0.4003		5,353.9769
Total	**5.9918**	**8.3618**	**27.0758**	**0.0671**	**5.1796**	**0.2684**	**5.4480**	**1.3836**	**0.2652**	**1.6487**	**0.0000**	**8,140.5489**	**8,140.5489**	**0.4669**	**0.0510**	**8,167.4255**

	ROG	NOx	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	0.56	3.03	3.59	5.16	6.90	1.29	6.64	6.90	1.24	6.03	0.00	4.34	4.34	3.68	0.00	4.33

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	4/6/2020	5/1/2020	5	20	
2	Grading	Grading	5/2/2020	7/3/2020	5	45	
3	Building Construction	Building Construction	7/4/2020	12/11/2020	5	115	
4	Paving	Paving	12/12/2020	1/29/2021	5	35	
5	Architectural Coating	Architectural Coating	1/30/2021	3/19/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 342,630; Residential Outdoor: 114,210; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	12	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	30	34.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0820	0.0540	0.4930	1.3300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.9590	131.9590	3.5900e-003		132.0487
Total	**0.0820**	**0.0540**	**0.4930**	**1.3300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**131.9590**	**131.9590**	**3.5900e-003**		**132.0487**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0820	0.0540	0.4930	1.3300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.9590	131.9590	3.5900e-003		132.0487
Total	**0.0820**	**0.0540**	**0.4930**	**1.3300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**131.9590**	**131.9590**	**3.5900e-003**		**132.0487**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.0911	0.0600	0.5478	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.6211	146.6211	3.9900e-003		146.7208
Total	**0.0911**	**0.0600**	**0.5478**	**1.4700e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**146.6211**	**146.6211**	**3.9900e-003**		**146.7208**

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.0911	0.0600	0.5478	1.4700e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		146.6211	146.6211	3.9900e-003		146.7208
Total	**0.0911**	**0.0600**	**0.5478**	**1.4700e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**146.6211**	**146.6211**	**3.9900e-003**		**146.7208**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758		6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**		**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0384	1.2363	0.2177	2.7800e-003	0.0678	6.6500e-003	0.0744	0.0195	6.3700e-003	0.0259		291.8155	291.8155	0.0394		292.8009
Worker	0.1549	0.1020	0.9313	2.5000e-003	0.2793	1.7500e-003	0.2811	0.0741	1.6100e-003	0.0757		249.2558	249.2558	6.7800e-003		249.4254
Total	**0.1934**	**1.3382**	**1.1490**	**5.2800e-003**	**0.3471**	**8.4000e-003**	**0.3555**	**0.0936**	**7.9800e-003**	**0.1016**		**541.0713**	**541.0713**	**0.0462**		**542.2263**

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	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758	0.0000	6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**	**0.0000**	**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0384	1.2363	0.2177	2.7800e-003	0.0678	6.6500e-003	0.0744	0.0195	6.3700e-003	0.0259		291.8155	291.8155	0.0394		292.8009
Worker	0.1549	0.1020	0.9313	2.5000e-003	0.2793	1.7500e-003	0.2811	0.0741	1.6100e-003	0.0757		249.2558	249.2558	6.7800e-003		249.4254
Total	**0.1934**	**1.3382**	**1.1490**	**5.2800e-003**	**0.3471**	**8.4000e-003**	**0.3555**	**0.0936**	**7.9800e-003**	**0.1016**		**541.0713**	**541.0713**	**0.0462**		**542.2263**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0632	0.0400	0.3720	1.0700e-003	0.1232	7.5000e-004	0.1240	0.0327	6.9000e-004	0.0334		106.1985	106.1985	2.6600e-003		106.2650
Total	**0.0632**	**0.0400**	**0.3720**	**1.0700e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**6.9000e-004**	**0.0334**		**106.1985**	**106.1985**	**2.6600e-003**		**106.2650**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0632	0.0400	0.3720	1.0700e-003	0.1232	7.5000e-004	0.1240	0.0327	6.9000e-004	0.0334		106.1985	106.1985	2.6600e-003		106.2650
Total	**0.0632**	**0.0400**	**0.3720**	**1.0700e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**6.9000e-004**	**0.0334**		**106.1985**	**106.1985**	**2.6600e-003**		**106.2650**

3.6 Architectural Coating - 2021

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	39.3241					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**39.5430**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0295	0.0187	0.1736	5.0000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.2000e-004	0.0156		49.5593	49.5593	1.2400e-003		49.5903
Total	**0.0295**	**0.0187**	**0.1736**	**5.0000e-004**	**0.0575**	**3.5000e-004**	**0.0579**	**0.0153**	**3.2000e-004**	**0.0156**		**49.5593**	**49.5593**	**1.2400e-003**		**49.5903**

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	39.3241					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**39.5430**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0295	0.0187	0.1736	5.0000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.2000e-004	0.0156		49.5593	49.5593	1.2400e-003		49.5903
Total	**0.0295**	**0.0187**	**0.1736**	**5.0000e-004**	**0.0575**	**3.5000e-004**	**0.0579**	**0.0153**	**3.2000e-004**	**0.0156**		**49.5593**	**49.5593**	**1.2400e-003**		**49.5903**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5066	6.0928	18.4323	0.0528	5.1796	0.0497	5.2292	1.3836	0.0464	1.4300		5,343.9702	5,343.9702	0.4003		5,353.9769
Unmitigated	1.5373	6.3535	19.3856	0.0564	5.5634	0.0528	5.6163	1.4861	0.0494	1.5355		5,713.4450	5,713.4450	0.4179		5,723.8933

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	887.36	896.76	803.70	2,568,592	2,391,359
Total	887.36	896.76	803.70	2,568,592	2,391,359

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
NaturalGas Unmitigated	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597

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					
Single Family Housing	6733.29	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Total		**0.0726**	**0.6205**	**0.2641**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**		**792.1523**	**792.1523**	**0.0152**	**0.0145**	**796.8597**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	6.73329	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Total		**0.0726**	**0.6205**	**0.2641**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**		**792.1523**	**792.1523**	**0.0152**	**0.0145**	**796.8597**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4126	1.6484	8.3795	0.0104		0.1686	0.1686		0.1686	0.1686	0.0000	2,004.4264	2,004.4264	0.0515	0.0365	2,016.5889
Unmitigated	4.4159	1.6490	8.4355	0.0104		0.1689	0.1689		0.1689	0.1689	0.0000	2,004.5522	2,004.5522	0.0517	0.0365	2,016.7195

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	0.3771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.6209					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1825	1.5593	0.6635	9.9500e-003		0.1261	0.1261		0.1261	0.1261	0.0000	1,990.5882	1,990.5882	0.0382	0.0365	2,002.4173
Landscaping	0.2355	0.0897	7.7720	4.1000e-004		0.0428	0.0428		0.0428	0.0428		13.9639	13.9639	0.0135		14.3022
Total	**4.4159**	**1.6490**	**8.4355**	**0.0104**		**0.1689**	**0.1689**		**0.1689**	**0.1689**	**0.0000**	**2,004.5522**	**2,004.5522**	**0.0517**	**0.0365**	**2,016.7195**

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	0.3771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.6209					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1825	1.5593	0.6635	9.9500e-003		0.1261	0.1261		0.1261	0.1261	0.0000	1,990.5882	1,990.5882	0.0382	0.0365	2,002.4173
Landscaping	0.2322	0.0892	7.7159	4.1000e-004		0.0425	0.0425		0.0425	0.0425		13.8381	13.8381	0.0133		14.1716
Total	**4.4126**	**1.6484**	**8.3795**	**0.0104**		**0.1686**	**0.1686**		**0.1686**	**0.1686**	**0.0000**	**2,004.4264**	**2,004.4264**	**0.0515**	**0.0365**	**2,016.5889**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville_Locan_Tract_6239_Phase2 - Fresno County, Summer

Granville_Locan_Tract_6239_Phase2

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	94.00	Dwelling Unit	29.00	169,200.00	269

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - Construction to go from 4/2020 - 3/2021

Off-road Equipment - increased equipment to account for reduced construction schedule from default

Architectural Coating - Avg VOC Content - Rule 4601

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning

Area Coating - Avg VOC Content - Rule 4601

Mobile Land Use Mitigation -

Area Mitigation - Avg VOC Content - Rule 4601

Energy Mitigation - Assumed 3 kw solar sytem size for homes

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2021

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaCoating	Area_EF_Residential_Exterior	150	65
tblAreaCoating	Area_EF_Residential_Interior	150	65
tblConstructionPhase	NumDays	440.00	115.00
tblFireplaces	NumberGas	51.70	94.00
tblFireplaces	NumberNoFireplace	42.30	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	30.52	29.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00

tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2020	6.2958	53.4645	52.0011	0.0785	18.2141	3.3043	20.4125	9.9699	3.0837	11.9924	0.0000	7,461.9679	7,461.9679	1.9543	0.0000	7,510.8247
2021	39.5748	12.9532	15.0918	0.0240	0.1232	0.6785	0.8017	0.0327	0.6242	0.6569	0.0000	2,328.3825	2,328.3825	0.7169	0.0000	2,346.3045
Maximum	**39.5748**	**53.4645**	**52.0011**	**0.0785**	**18.2141**	**3.3043**	**20.4125**	**9.9699**	**3.0837**	**11.9924**	**0.0000**	**7,461.9679**	**7,461.9679**	**1.9543**	**0.0000**	**7,510.8247**

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					
2020	6.2958	53.4645	52.0011	0.0785	18.2141	3.3043	20.4125	9.9699	3.0837	11.9924	0.0000	7,461.9679	7,461.9679	1.9543	0.0000	7,510.8247
2021	39.5748	12.9532	15.0918	0.0240	0.1232	0.6785	0.8017	0.0327	0.6242	0.6569	0.0000	2,328.3825	2,328.3825	0.7169	0.0000	2,346.3045
Maximum	**39.5748**	**53.4645**	**52.0011**	**0.0785**	**18.2141**	**3.3043**	**20.4125**	**9.9699**	**3.0837**	**11.9924**	**0.0000**	**7,461.9679**	**7,461.9679**	**1.9543**	**0.0000**	**7,510.8247**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	4.4159	1.6490	8.4355	0.0104		0.1689	0.1689		0.1689	0.1689	0.0000	2,004.5522	2,004.5522	0.0517	0.0365	2,016.7195
Energy	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Mobile	2.1902	5.9993	21.5571	0.0632	5.5634	0.0525	5.6159	1.4861	0.0490	1.5352		6,388.0837	6,388.0837	0.4136		6,398.4228
Total	**6.6788**	**8.2688**	**30.2566**	**0.0775**	**5.5634**	**0.2715**	**5.8350**	**1.4861**	**0.2681**	**1.7542**	**0.0000**	**9,184.7882**	**9,184.7882**	**0.4804**	**0.0510**	**9,212.0020**

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	4.4126	1.6484	8.3795	0.0104		0.1686	0.1686		0.1686	0.1686	0.0000	2,004.4264	2,004.4264	0.0515	0.0365	2,016.5889
Energy	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Mobile	2.1565	5.7648	20.3300	0.0591	5.1796	0.0493	5.2288	1.3836	0.0460	1.4296		5,974.4158	5,974.4158	0.3945		5,984.2781
Total	**6.6417**	**8.0338**	**28.9735**	**0.0734**	**5.1796**	**0.2680**	**5.4476**	**1.3836**	**0.2648**	**1.6484**	**0.0000**	**8,770.9945**	**8,770.9945**	**0.4612**	**0.0510**	**8,797.7267**

	ROG	NOx	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	**0.56**	**2.84**	**4.24**	**5.28**	**6.90**	**1.30**	**6.64**	**6.90**	**1.24**	**6.03**	**0.00**	**4.51**	**4.51**	**4.01**	**0.00**	**4.50**

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	4/6/2020	5/1/2020	5	20	
2	Grading	Grading	5/2/2020	7/3/2020	5	45	
3	Building Construction	Building Construction	7/4/2020	12/11/2020	5	115	
4	Paving	Paving	12/12/2020	1/29/2021	5	35	
5	Architectural Coating	Architectural Coating	1/30/2021	3/19/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 112.5

Acres of Paving: 0

Residential Indoor: 342,630; Residential Outdoor: 114,210; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	12	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	12	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	30	34.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0884	0.0459	0.5789	1.5100e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		150.5688	150.5688	4.0800e-003		150.6707
Total	**0.0884**	**0.0459**	**0.5789**	**1.5100e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**150.5688**	**150.5688**	**4.0800e-003**		**150.6707**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0884	0.0459	0.5789	1.5100e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		150.5688	150.5688	4.0800e-003		150.6707
Total	**0.0884**	**0.0459**	**0.5789**	**1.5100e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**150.5688**	**150.5688**	**4.0800e-003**		**150.6707**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.0982	0.0510	0.6432	1.6800e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		167.2986	167.2986	4.5300e-003		167.4119
Total	**0.0982**	**0.0510**	**0.6432**	**1.6800e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**167.2986**	**167.2986**	**4.5300e-003**		**167.4119**

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					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

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	0.0982	0.0510	0.6432	1.6800e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		167.2986	167.2986	4.5300e-003		167.4119
Total	**0.0982**	**0.0510**	**0.6432**	**1.6800e-003**	**0.1643**	**1.0300e-003**	**0.1653**	**0.0436**	**9.5000e-004**	**0.0445**		**167.2986**	**167.2986**	**4.5300e-003**		**167.4119**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758		6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**		**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0368	1.2222	0.1832	2.8700e-003	0.0678	6.5200e-003	0.0743	0.0195	6.2300e-003	0.0257		301.2345	301.2345	0.0348		302.1043
Worker	0.1670	0.0867	1.0934	2.8600e-003	0.2793	1.7500e-003	0.2811	0.0741	1.6100e-003	0.0757		284.4077	284.4077	7.7000e-003		284.6002
Total	**0.2038**	**1.3089**	**1.2766**	**5.7300e-003**	**0.3471**	**8.2700e-003**	**0.3553**	**0.0936**	**7.8400e-003**	**0.1014**		**585.6422**	**585.6422**	**0.0425**		**586.7044**

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	6.0920	52.1556	50.7245	0.0728		3.2960	3.2960		3.0758	3.0758	0.0000	6,876.3257	6,876.3257	1.9118		6,924.1203
Total	**6.0920**	**52.1556**	**50.7245**	**0.0728**		**3.2960**	**3.2960**		**3.0758**	**3.0758**	**0.0000**	**6,876.3257**	**6,876.3257**	**1.9118**		**6,924.1203**

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	0.0368	1.2222	0.1832	2.8700e-003	0.0678	6.5200e-003	0.0743	0.0195	6.2300e-003	0.0257		301.2345	301.2345	0.0348		302.1043
Worker	0.1670	0.0867	1.0934	2.8600e-003	0.2793	1.7500e-003	0.2811	0.0741	1.6100e-003	0.0757		284.4077	284.4077	7.7000e-003		284.6002
Total	**0.2038**	**1.3089**	**1.2766**	**5.7300e-003**	**0.3471**	**8.2700e-003**	**0.3553**	**0.0936**	**7.8400e-003**	**0.1014**		**585.6422**	**585.6422**	**0.0425**		**586.7044**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

3.5 Paving - 2021

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	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0680	0.0341	0.4385	1.2200e-003	0.1232	7.5000e-004	0.1240	0.0327	6.9000e-004	0.0334		121.1716	121.1716	3.0200e-003		121.2472
Total	**0.0680**	**0.0341**	**0.4385**	**1.2200e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**6.9000e-004**	**0.0334**		**121.1716**	**121.1716**	**3.0200e-003**		**121.2472**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

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	0.0680	0.0341	0.4385	1.2200e-003	0.1232	7.5000e-004	0.1240	0.0327	6.9000e-004	0.0334		121.1716	121.1716	3.0200e-003		121.2472
Total	**0.0680**	**0.0341**	**0.4385**	**1.2200e-003**	**0.1232**	**7.5000e-004**	**0.1240**	**0.0327**	**6.9000e-004**	**0.0334**		**121.1716**	**121.1716**	**3.0200e-003**		**121.2472**

3.6 Architectural Coating - 2021

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	39.3241					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**39.5430**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0317	0.0159	0.2047	5.7000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.2000e-004	0.0156		56.5468	56.5468	1.4100e-003		56.5820
Total	**0.0317**	**0.0159**	**0.2047**	**5.7000e-004**	**0.0575**	**3.5000e-004**	**0.0579**	**0.0153**	**3.2000e-004**	**0.0156**		**56.5468**	**56.5468**	**1.4100e-003**		**56.5820**

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	39.3241					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**39.5430**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0317	0.0159	0.2047	5.7000e-004	0.0575	3.5000e-004	0.0579	0.0153	3.2000e-004	0.0156		56.5468	56.5468	1.4100e-003		56.5820
Total	**0.0317**	**0.0159**	**0.2047**	**5.7000e-004**	**0.0575**	**3.5000e-004**	**0.0579**	**0.0153**	**3.2000e-004**	**0.0156**		**56.5468**	**56.5468**	**1.4100e-003**		**56.5820**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.1565	5.7648	20.3300	0.0591	5.1796	0.0493	5.2288	1.3836	0.0460	1.4296		5,974.4158	5,974.4158	0.3945		5,984.2781
Unmitigated	2.1902	5.9993	21.5571	0.0632	5.5634	0.0525	5.6159	1.4861	0.0490	1.5352		6,388.0837	6,388.0837	0.4136		6,398.4228

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	887.36	896.76	803.70	2,568,592	2,391,359
Total	887.36	896.76	803.70	2,568,592	2,391,359

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
NaturalGas Unmitigated	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597

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					
Single Family Housing	6733.29	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Total		**0.0726**	**0.6205**	**0.2641**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**		**792.1523**	**792.1523**	**0.0152**	**0.0145**	**796.8597**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	6.73329	0.0726	0.6205	0.2641	3.9600e-003		0.0502	0.0502		0.0502	0.0502		792.1523	792.1523	0.0152	0.0145	796.8597
Total		**0.0726**	**0.6205**	**0.2641**	**3.9600e-003**		**0.0502**	**0.0502**		**0.0502**	**0.0502**		**792.1523**	**792.1523**	**0.0152**	**0.0145**	**796.8597**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.4126	1.6484	8.3795	0.0104		0.1686	0.1686		0.1686	0.1686	0.0000	2,004.4264	2,004.4264	0.0515	0.0365	2,016.5889
Unmitigated	4.4159	1.6490	8.4355	0.0104		0.1689	0.1689		0.1689	0.1689	0.0000	2,004.5522	2,004.5522	0.0517	0.0365	2,016.7195

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	0.3771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.6209					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1825	1.5593	0.6635	9.9500e-003		0.1261	0.1261		0.1261	0.1261	0.0000	1,990.5882	1,990.5882	0.0382	0.0365	2,002.4173
Landscaping	0.2355	0.0897	7.7720	4.1000e-004		0.0428	0.0428		0.0428	0.0428		13.9639	13.9639	0.0135		14.3022
Total	**4.4159**	**1.6490**	**8.4355**	**0.0104**		**0.1689**	**0.1689**		**0.1689**	**0.1689**	**0.0000**	**2,004.5522**	**2,004.5522**	**0.0517**	**0.0365**	**2,016.7195**

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	0.3771					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.6209					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1825	1.5593	0.6635	9.9500e-003		0.1261	0.1261		0.1261	0.1261	0.0000	1,990.5882	1,990.5882	0.0382	0.0365	2,002.4173
Landscaping	0.2322	0.0892	7.7159	4.1000e-004		0.0425	0.0425		0.0425	0.0425		13.8381	13.8381	0.0133		14.1716
Total	**4.4126**	**1.6484**	**8.3795**	**0.0104**		**0.1686**	**0.1686**		**0.1686**	**0.1686**	**0.0000**	**2,004.4264**	**2,004.4264**	**0.0515**	**0.0365**	**2,016.5889**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville_Tract6264 - Fresno County, Annual

Granville_Tract6264

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	37.00	Dwelling Unit	5.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - 2020 - 2021 schedule

Off-road Equipment - increased equipment to account for shortened schedule from default

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 - Average VOC Content

Energy Mitigation - Assumed 5 kw solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Architectural Coating - Rule 4601 - Average VOC Content

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblConstructionPhase	NumDays	230.00	115.00
tblFireplaces	NumberGas	20.35	37.00
tblFireplaces	NumberNoFireplace	16.65	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	12.01	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblVehicleTrips	ST_TR	9.91	9.54

tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2020	0.3567	2.1113	1.9076	3.0000e-003	0.0809	0.1240	0.2049	0.0409	0.1158	0.1567	0.0000	259.2939	259.2939	0.0678	0.0000	260.9899
2021	0.1516	7.6700e-003	9.4700e-003	2.0000e-005	1.2000e-004	4.7000e-004	5.9000e-004	3.0000e-005	4.7000e-004	5.0000e-004	0.0000	1.3769	1.3769	9.0000e-005	0.0000	1.3791
Maximum	**0.3567**	**2.1113**	**1.9076**	**3.0000e-003**	**0.0809**	**0.1240**	**0.2049**	**0.0409**	**0.1158**	**0.1567**	**0.0000**	**259.2939**	**259.2939**	**0.0678**	**0.0000**	**260.9899**

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					
2020	0.3567	2.1113	1.9076	3.0000e-003	0.0809	0.1240	0.2049	0.0409	0.1158	0.1567	0.0000	259.2936	259.2936	0.0678	0.0000	260.9896
2021	0.1516	7.6700e-003	9.4700e-003	2.0000e-005	1.2000e-004	4.7000e-004	5.9000e-004	3.0000e-005	4.7000e-004	5.0000e-004	0.0000	1.3769	1.3769	9.0000e-005	0.0000	1.3791
Maximum	**0.3567**	**2.1113**	**1.9076**	**3.0000e-003**	**0.0809**	**0.1240**	**0.2049**	**0.0409**	**0.1158**	**0.1567**	**0.0000**	**259.2936**	**259.2936**	**0.0678**	**0.0000**	**260.9896**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-1-2020**	**8-31-2020**	1.1239	1.1239
2	**9-1-2020**	**11-30-2020**	1.0789	1.0789
3	**12-1-2020**	**2-28-2021**	0.3903	0.3903
		Highest	1.1239	1.1239

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	0.3339	0.0283	0.2860	1.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	29.5918	29.5918	9.9000e-004	5.3000e-004	29.7759
Energy	5.2200e-003	0.0446	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	145.9209	145.9209	5.2500e-003	1.8300e-003	146.5972
Mobile	0.1185	0.4334	1.3465	4.0900e-003	0.3794	3.6800e-003	0.3830	0.1016	3.4400e-003	0.1050	0.0000	375.5004	375.5004	0.0260	0.0000	376.1500
Waste						0.0000	0.0000		0.0000	0.0000	7.7461	0.0000	7.7461	0.4578	0.0000	19.1907
Water						0.0000	0.0000		0.0000	0.0000	0.7648	5.3422	6.1070	0.0788	1.9000e-003	8.6445
Total	**0.4576**	**0.5063**	**1.6515**	**4.5500e-003**	**0.3794**	**0.0108**	**0.3902**	**0.1016**	**0.0106**	**0.1122**	**8.5109**	**556.3554**	**564.8663**	**0.5688**	**4.2600e-003**	**580.3583**

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	0.2984	0.0283	0.2841	1.7000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	29.5878	29.5878	9.9000e-004	5.3000e-004	29.7717
Energy	5.2200e-003	0.0446	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	55.0644	55.0644	1.1500e-003	9.8000e-004	55.3846
Mobile	0.1163	0.4160	1.2755	3.8200e-003	0.3532	3.4600e-003	0.3566	0.0946	3.2300e-003	0.0978	0.0000	351.2486	351.2486	0.0248	0.0000	351.8696
Waste						0.0000	0.0000		0.0000	0.0000	1.9365	0.0000	1.9365	0.1145	0.0000	4.7977
Water						0.0000	0.0000		0.0000	0.0000	0.6118	4.4888	5.1007	0.0631	1.5300e-003	7.1315
Total	**0.4199**	**0.4889**	**1.5785**	**4.2700e-003**	**0.3532**	**0.0106**	**0.3638**	**0.0946**	**0.0104**	**0.1049**	**2.5484**	**440.3895**	**442.9379**	**0.2045**	**3.0400e-003**	**448.9550**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.25**	**3.44**	**4.42**	**6.15**	**6.90**	**2.12**	**6.77**	**6.90**	**2.08**	**6.45**	**70.06**	**20.84**	**21.59**	**64.05**	**28.64**	**22.64**

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	6/1/2020	6/5/2020	5	5	
2	Grading	Grading	6/6/2020	6/17/2020	5	8	
3	Building Construction	Building Construction	6/18/2020	11/25/2020	5	115	
4	Paving	Paving	11/26/2020	12/21/2020	5	18	
5	Architectural Coating	Architectural Coating	12/22/2020	1/14/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 134,865; Residential Outdoor: 44,955; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	16	13.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4253**

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	1.9000e-004	1.2000e-004	1.2500e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3114	0.3114	1.0000e-005	0.0000	0.3116
Total	**1.9000e-004**	**1.2000e-004**	**1.2500e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3114**	**0.3114**	**1.0000e-005**	**0.0000**	**0.3116**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	**0.0102**	**0.1060**	**0.0538**	**1.0000e-004**	**0.0452**	**5.4900e-003**	**0.0507**	**0.0248**	**5.0500e-003**	**0.0299**	**0.0000**	**8.3577**	**8.3577**	**2.7000e-003**	**0.0000**	**8.4252**

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	1.9000e-004	1.2000e-004	1.2500e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3114	0.3114	1.0000e-005	0.0000	0.3116
Total	**1.9000e-004**	**1.2000e-004**	**1.2500e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3114**	**0.3114**	**1.0000e-005**	**0.0000**	**0.3116**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

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	2.6000e-004	1.6000e-004	1.6700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4152	0.4152	1.0000e-005	0.0000	0.4154
Total	**2.6000e-004**	**1.6000e-004**	**1.6700e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4152**	**0.4152**	**1.0000e-005**	**0.0000**	**0.4154**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	**9.7200e-003**	**0.1055**	**0.0642**	**1.2000e-004**	**0.0262**	**5.0900e-003**	**0.0313**	**0.0135**	**4.6900e-003**	**0.0182**	**0.0000**	**10.4235**	**10.4235**	**3.3700e-003**	**0.0000**	**10.5078**

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	2.6000e-004	1.6000e-004	1.6700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4152	0.4152	1.0000e-005	0.0000	0.4154
Total	**2.6000e-004**	**1.6000e-004**	**1.6700e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4152**	**0.4152**	**1.0000e-005**	**0.0000**	**0.4154**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1980	1.7351	1.6181	2.4300e-003		0.1060	0.1060		0.0992	0.0992	0.0000	208.3474	208.3474	0.0549	0.0000	209.7199
Total	**0.1980**	**1.7351**	**1.6181**	**2.4300e-003**		**0.1060**	**0.1060**		**0.0992**	**0.0992**	**0.0000**	**208.3474**	**208.3474**	**0.0549**	**0.0000**	**209.7199**

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	8.6000e-004	0.0285	4.5500e-003	7.0000e-005	1.5200e-003	1.5000e-004	1.6800e-003	4.4000e-004	1.4000e-004	5.8000e-004	0.0000	6.2028	6.2028	7.7000e-004	0.0000	6.2219
Worker	3.2300e-003	2.0500e-003	0.0208	6.0000e-005	5.9800e-003	4.0000e-005	6.0100e-003	1.5900e-003	4.0000e-005	1.6200e-003	0.0000	5.1722	5.1722	1.4000e-004	0.0000	5.1757
Total	**4.0900e-003**	**0.0306**	**0.0253**	**1.3000e-004**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**	**2.0300e-003**	**1.8000e-004**	**2.2000e-003**	**0.0000**	**11.3750**	**11.3750**	**9.1000e-004**	**0.0000**	**11.3977**

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	0.1980	1.7351	1.6181	2.4300e-003		0.1060	0.1060		0.0992	0.0992	0.0000	208.3471	208.3471	0.0549	0.0000	209.7197
Total	**0.1980**	**1.7351**	**1.6181**	**2.4300e-003**		**0.1060**	**0.1060**		**0.0992**	**0.0992**	**0.0000**	**208.3471**	**208.3471**	**0.0549**	**0.0000**	**209.7197**

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	8.6000e-004	0.0285	4.5500e-003	7.0000e-005	1.5200e-003	1.5000e-004	1.6800e-003	4.4000e-004	1.4000e-004	5.8000e-004	0.0000	6.2028	6.2028	7.7000e-004	0.0000	6.2219
Worker	3.2300e-003	2.0500e-003	0.0208	6.0000e-005	5.9800e-003	4.0000e-005	6.0100e-003	1.5900e-003	4.0000e-005	1.6200e-003	0.0000	5.1722	5.1722	1.4000e-004	0.0000	5.1757
Total	**4.0900e-003**	**0.0306**	**0.0253**	**1.3000e-004**	**7.5000e-003**	**1.9000e-004**	**7.6900e-003**	**2.0300e-003**	**1.8000e-004**	**2.2000e-003**	**0.0000**	**11.3750**	**11.3750**	**9.1000e-004**	**0.0000**	**11.3977**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0122	0.1266	0.1319	2.1000e-004		6.7800e-003	6.7800e-003		6.2300e-003	6.2300e-003	0.0000	18.0254	18.0254	5.8300e-003	0.0000	18.1711
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0122**	**0.1266**	**0.1319**	**2.1000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2300e-003**	**6.2300e-003**	**0.0000**	**18.0254**	**18.0254**	**5.8300e-003**	**0.0000**	**18.1711**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.7000e-004	3.7500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9341	0.9341	3.0000e-005	0.0000	0.9347
Total	**5.8000e-004**	**3.7000e-004**	**3.7500e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9341**	**0.9341**	**3.0000e-005**	**0.0000**	**0.9347**

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	0.0122	0.1266	0.1319	2.1000e-004		6.7800e-003	6.7800e-003		6.2300e-003	6.2300e-003	0.0000	18.0254	18.0254	5.8300e-003	0.0000	18.1711

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0122**	**0.1266**	**0.1319**	**2.1000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2300e-003**	**6.2300e-003**	**0.0000**	**18.0254**	**18.0254**	**5.8300e-003**	**0.0000**	**18.1711**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.7000e-004	3.7500e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9341	0.9341	3.0000e-005	0.0000	0.9347
Total	**5.8000e-004**	**3.7000e-004**	**3.7500e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9341**	**0.9341**	**3.0000e-005**	**0.0000**	**0.9347**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1204					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7000e-004	6.7400e-003	7.3300e-003	1.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	1.0213	1.0213	8.0000e-005	0.0000	1.0233
Total	**0.1214**	**6.7400e-003**	**7.3300e-003**	**1.0000e-005**		**4.4000e-004**	**4.4000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**8.0000e-005**	**0.0000**	**1.0233**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0830	0.0830	0.0000	0.0000	0.0831
Total	**5.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0830**	**0.0830**	**0.0000**	**0.0000**	**0.0831**

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	0.1204					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7000e-004	6.7400e-003	7.3300e-003	1.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	1.0213	1.0213	8.0000e-005	0.0000	1.0233
Total	**0.1214**	**6.7400e-003**	**7.3300e-003**	**1.0000e-005**		**4.4000e-004**	**4.4000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**1.0213**	**1.0213**	**8.0000e-005**	**0.0000**	**1.0233**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0830	0.0830	0.0000	0.0000	0.0831
Total	**5.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0830**	**0.0830**	**0.0000**	**0.0000**	**0.0831**

3.6 Architectural Coating - 2021

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	0.1505					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.1516**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	3.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1002	0.1002	0.0000	0.0000	0.1003
Total	**6.0000e-005**	**4.0000e-005**	**3.8000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1002**	**0.1002**	**0.0000**	**0.0000**	**0.1003**

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	0.1505					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.1516**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	3.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1002	0.1002	0.0000	0.0000	0.1003
Total	**6.0000e-005**	**4.0000e-005**	**3.8000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1002**	**0.1002**	**0.0000**	**0.0000**	**0.1003**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1163	0.4160	1.2755	3.8200e-003	0.3532	3.4600e-003	0.3566	0.0946	3.2300e-003	0.0978	0.0000	351.2486	351.2486	0.0248	0.0000	351.8696
Unmitigated	0.1185	0.4334	1.3465	4.0900e-003	0.3794	3.6800e-003	0.3830	0.1016	3.4400e-003	0.1050	0.0000	375.5004	375.5004	0.0260	0.0000	376.1500

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	349.28	352.98	316.35	1,011,041	941,280
Total	349.28	352.98	316.35	1,011,041	941,280

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	3.4416	3.4416	1.6000e-004	3.0000e-005	3.4551
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	94.2982	94.2982	4.2600e-003	8.8000e-004	94.6677
NaturalGas Mitigated	5.2200e-003	0.0446	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	51.6228	51.6228	9.9000e-004	9.5000e-004	51.9295
NaturalGas Unmitigated	5.2200e-003	0.0446	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	51.6228	51.6228	9.9000e-004	9.5000e-004	51.9295

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	967374	5.2200e-003	0.0446	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	51.6228	51.6228	9.9000e-004	9.5000e-004	51.9295
Total		**5.2200e-003**	**0.0446**	**0.0190**	**2.8000e-004**		**3.6000e-003**	**3.6000e-003**		**3.6000e-003**	**3.6000e-003**	**0.0000**	**51.6228**	**51.6228**	**9.9000e-004**	**9.5000e-004**	**51.9295**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	967374	5.2200e-003	0.0446	0.0190	2.8000e-004		3.6000e-003	3.6000e-003		3.6000e-003	3.6000e-003	0.0000	51.6228	51.6228	9.9000e-004	9.5000e-004	51.9295
Total		**5.2200e-003**	**0.0446**	**0.0190**	**2.8000e-004**		**3.6000e-003**	**3.6000e-003**		**3.6000e-003**	**3.6000e-003**	**0.0000**	**51.6228**	**51.6228**	**9.9000e-004**	**9.5000e-004**	**51.9295**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	324147	94.2982	4.2600e-003	8.8000e-004	94.6677
Total		**94.2982**	**4.2600e-003**	**8.8000e-004**	**94.6677**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	11830.4	3.4416	1.6000e-004	3.0000e-005	3.4551
Total		**3.4416**	**1.6000e-004**	**3.0000e-005**	**3.4551**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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	0.2984	0.0283	0.2841	1.7000e-004		3.5400e-003	3.5400e-003		3.5400e-003	3.5400e-003	0.0000	29.5878	29.5878	9.9000e-004	5.3000e-004	29.7717
Unmitigated	0.3339	0.0283	0.2860	1.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	29.5918	29.5918	9.9000e-004	5.3000e-004	29.7759

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	0.0625					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.9400e-003	0.0252	0.0107	1.6000e-004		2.0300e-003	2.0300e-003		2.0300e-003	2.0300e-003	0.0000	29.1430	29.1430	5.6000e-004	5.3000e-004	29.3162
Landscaping	8.3400e-003	3.1800e-003	0.2753	1.0000e-005		1.5200e-003	1.5200e-003		1.5200e-003	1.5200e-003	0.0000	0.4488	0.4488	4.3000e-004	0.0000	0.4596
Total	**0.3339**	**0.0283**	**0.2860**	**1.7000e-004**		**3.5500e-003**	**3.5500e-003**		**3.5500e-003**	**3.5500e-003**	**0.0000**	**29.5918**	**29.5918**	**9.9000e-004**	**5.3000e-004**	**29.7759**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0271					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.9400e-003	0.0252	0.0107	1.6000e-004		2.0300e-003	2.0300e-003		2.0300e-003	2.0300e-003	0.0000	29.1430	29.1430	5.6000e-004	5.3000e-004	29.3162
Landscaping	8.2200e-003	3.1600e-003	0.2733	1.0000e-005		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003	0.0000	0.4447	0.4447	4.3000e-004	0.0000	0.4554
Total	**0.2984**	**0.0283**	**0.2841**	**1.7000e-004**		**3.5400e-003**	**3.5400e-003**		**3.5400e-003**	**3.5400e-003**	**0.0000**	**29.5878**	**29.5878**	**9.9000e-004**	**5.3000e-004**	**29.7717**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.1007	0.0631	1.5300e-003	7.1315
Unmitigated	6.1070	0.0788	1.9000e-003	8.6445

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.4107 / 1.51979	6.1070	0.0788	1.9000e-003	8.6445
Total		**6.1070**	**0.0788**	**1.9000e-003**	**8.6445**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.92856 / 1.42708	5.1007	0.0631	1.5300e-003	7.1315
Total		**5.1007**	**0.0631**	**1.5300e-003**	**7.1315**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.9365	0.1145	0.0000	4.7977
Unmitigated	7.7461	0.4578	0.0000	19.1907

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	38.16	7.7461	0.4578	0.0000	19.1907
Total		**7.7461**	**0.4578**	**0.0000**	**19.1907**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	9.54	1.9365	0.1145	0.0000	4.7977
Total		**1.9365**	**0.1145**	**0.0000**	**4.7977**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville_Tract6264

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	37.00	Dwelling Unit	5.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - 2020 - 2021 schedule

Off-road Equipment - increased equipment to account for shortened schedule from default

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 - Average VOC Content

Energy Mitigation - Assumed 5 kw solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Architectural Coating - Rule 4601 - Average VOC Content

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblConstructionPhase	NumDays	230.00	115.00
tblFireplaces	NumberGas	20.35	37.00
tblFireplaces	NumberNoFireplace	16.65	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	12.01	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblVehicleTrips	ST_TR	9.91	9.54

tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2020	30.3532	42.4713	28.5837	0.0443	18.2141	2.1983	20.4125	9.9699	2.0225	11.9924	0.0000	4,206.1805	4,206.1805	1.1954	0.0000	4,232.9520
2021	30.3289	1.5348	1.8920	3.1800e-003	0.0246	0.0943	0.1189	6.5400e-003	0.0942	0.1008	0.0000	302.6878	302.6878	0.0198	0.0000	303.1839
Maximum	**30.3532**	**42.4713**	**28.5837**	**0.0443**	**18.2141**	**2.1983**	**20.4125**	**9.9699**	**2.0225**	**11.9924**	**0.0000**	**4,206.1805**	**4,206.1805**	**1.1954**	**0.0000**	**4,232.9520**

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					
2020	30.3532	42.4713	28.5837	0.0443	18.2141	2.1983	20.4125	9.9699	2.0225	11.9924	0.0000	4,206.1805	4,206.1805	1.1954	0.0000	4,232.9520
2021	30.3289	1.5348	1.8920	3.1800e-003	0.0246	0.0943	0.1189	6.5400e-003	0.0942	0.1008	0.0000	302.6878	302.6878	0.0198	0.0000	303.1839
Maximum	**30.3532**	**42.4713**	**28.5837**	**0.0443**	**18.2141**	**2.1983**	**20.4125**	**9.9699**	**2.0225**	**11.9924**	**0.0000**	**4,206.1805**	**4,206.1805**	**1.1954**	**0.0000**	**4,232.9520**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	1.9323	0.6491	3.3204	4.0800e-003		0.0665	0.0665		0.0665	0.0665	0.0000	789.0259	789.0259	0.0203	0.0144	793.8151
Energy	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Mobile	0.6051	2.5009	7.6305	0.0222	2.1899	0.0208	2.2107	0.5850	0.0194	0.6044		2,248.9092	2,248.9092	0.1645		2,253.0219
Total	**2.5659**	**3.3942**	**11.0548**	**0.0279**	**2.1899**	**0.1070**	**2.2969**	**0.5850**	**0.1057**	**0.6906**	**0.0000**	**3,349.7397**	**3,349.7397**	**0.1908**	**0.0201**	**3,360.4945**

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	1.7369	0.6489	3.2983	4.0800e-003		0.0664	0.0664		0.0664	0.0664	0.0000	788.9763	788.9763	0.0203	0.0144	793.7637
Energy	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Mobile	0.5930	2.3982	7.2553	0.0208	2.0388	0.0195	2.0583	0.5446	0.0183	0.5629		2,103.4776	2,103.4776	0.1576		2,107.4165
Total	**2.3585**	**3.2913**	**10.6575**	**0.0264**	**2.0388**	**0.1057**	**2.1444**	**0.5446**	**0.1044**	**0.6490**	**0.0000**	**3,204.2586**	**3,204.2586**	**0.1838**	**0.0201**	**3,214.8377**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**8.09**	**3.03**	**3.59**	**5.13**	**6.90**	**1.30**	**6.64**	**6.90**	**1.23**	**6.03**	**0.00**	**4.34**	**4.34**	**3.68**	**0.00**	**4.33**

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	6/1/2020	6/5/2020	5	5	
2	Grading	Grading	6/6/2020	6/17/2020	5	8	
3	Building Construction	Building Construction	6/18/2020	11/25/2020	5	115	
4	Paving	Paving	11/26/2020	12/21/2020	5	18	
5	Architectural Coating	Architectural Coating	12/22/2020	1/14/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 134,865; Residential Outdoor: 44,955; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	16	13.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0820	0.0540	0.4930	1.3300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.9590	131.9590	3.5900e-003		132.0487
Total	**0.0820**	**0.0540**	**0.4930**	**1.3300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**131.9590**	**131.9590**	**3.5900e-003**		**132.0487**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0820	0.0540	0.4930	1.3300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		131.9590	131.9590	3.5900e-003		132.0487
Total	**0.0820**	**0.0540**	**0.4930**	**1.3300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**131.9590**	**131.9590**	**3.5900e-003**		**132.0487**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4439	30.1759	28.1405	0.0422		1.8434	1.8434		1.7255	1.7255		3,994.1506	3,994.1506	1.0525		4,020.4631
Total	**3.4439**	**30.1759**	**28.1405**	**0.0422**		**1.8434**	**1.8434**		**1.7255**	**1.7255**		**3,994.1506**	**3,994.1506**	**1.0525**		**4,020.4631**

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	0.0154	0.4945	0.0871	1.1100e-003	0.0271	2.6600e-003	0.0298	7.8000e-003	2.5500e-003	0.0104		116.7262	116.7262	0.0158		117.1204
Worker	0.0592	0.0390	0.3561	9.6000e-004	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0289		95.3037	95.3037	2.5900e-003		95.3685
Total	**0.0746**	**0.5335**	**0.4432**	**2.0700e-003**	**0.1339**	**3.3300e-003**	**0.1372**	**0.0361**	**3.1700e-003**	**0.0393**		**212.0299**	**212.0299**	**0.0184**		**212.4889**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4439	30.1759	28.1405	0.0422		1.8434	1.8434		1.7255	1.7255	0.0000	3,994.1506	3,994.1506	1.0525		4,020.4631

Total	**3.4439**	**30.1759**	**28.1405**	**0.0422**		**1.8434**	**1.8434**		**1.7255**	**1.7255**	**0.0000**	**3,994.1506**	**3,994.1506**	**1.0525**		**4,020.4631**

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	0.0154	0.4945	0.0871	1.1100e-003	0.0271	2.6600e-003	0.0298	7.8000e-003	2.5500e-003	0.0104		116.7262	116.7262	0.0158		117.1204
Worker	0.0592	0.0390	0.3561	9.6000e-004	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0289		95.3037	95.3037	2.5900e-003		95.3685
Total	**0.0746**	**0.5335**	**0.4432**	**2.0700e-003**	**0.1339**	**3.3300e-003**	**0.1372**	**0.0361**	**3.1700e-003**	**0.0393**		**212.0299**	**212.0299**	**0.0184**		**212.4889**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0683	0.0450	0.4108	1.1000e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.9658	109.9658	2.9900e-003		110.0406
Total	**0.0683**	**0.0450**	**0.4108**	**1.1000e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.9658**	**109.9658**	**2.9900e-003**		**110.0406**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**30.3396**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0137	9.0000e-003	0.0822	2.2000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6800e-003		21.9932	21.9932	6.0000e-004		22.0081
Total	**0.0137**	**9.0000e-003**	**0.0822**	**2.2000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6800e-003**		**21.9932**	**21.9932**	**6.0000e-004**		**22.0081**

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	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**30.3396**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0137	9.0000e-003	0.0822	2.2000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6800e-003		21.9932	21.9932	6.0000e-004		22.0081
Total	**0.0137**	**9.0000e-003**	**0.0822**	**2.2000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6800e-003**		**21.9932**	**21.9932**	**6.0000e-004**		**22.0081**

3.6 Architectural Coating - 2021

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	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**30.3163**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0126	8.0000e-003	0.0744	2.1000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6700e-003		21.2397	21.2397	5.3000e-004		21.2530
Total	**0.0126**	**8.0000e-003**	**0.0744**	**2.1000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6700e-003**		**21.2397**	**21.2397**	**5.3000e-004**		**21.2530**

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	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**30.3163**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0126	8.0000e-003	0.0744	2.1000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6700e-003		21.2397	21.2397	5.3000e-004		21.2530
Total	**0.0126**	**8.0000e-003**	**0.0744**	**2.1000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6700e-003**		**21.2397**	**21.2397**	**5.3000e-004**		**21.2530**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Mitigated	0.5930	2.3982	7.2553	0.0208	2.0388	0.0195	2.0583	0.5446	0.0183	0.5629		2,103.4776	2,103.4776	0.1576		2,107.4165
Unmitigated	0.6051	2.5009	7.6305	0.0222	2.1899	0.0208	2.2107	0.5850	0.0194	0.6044		2,248.9092	2,248.9092	0.1645		2,253.0219

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	349.28	352.98	316.35	1,011,041	941,280
Total	349.28	352.98	316.35	1,011,041	941,280

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

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

Category	lb/day											lb/day				
NaturalGas Mitigated	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
NaturalGas Unmitigated	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575

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					
Single Family Housing	2650.34	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Total		**0.0286**	**0.2443**	**0.1039**	**1.5600e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**		**311.8046**	**311.8046**	**5.9800e-003**	**5.7200e-003**	**313.6575**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	2.65034	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Total		**0.0286**	**0.2443**	**0.1039**	**1.5600e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**		**311.8046**	**311.8046**	**5.9800e-003**	**5.7200e-003**	**313.6575**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.7369	0.6489	3.2983	4.0800e-003		0.0664	0.0664		0.0664	0.0664	0.0000	788.9763	788.9763	0.0203	0.0144	793.7637
Unmitigated	1.9323	0.6491	3.3204	4.0800e-003		0.0665	0.0665		0.0665	0.0665	0.0000	789.0259	789.0259	0.0203	0.0144	793.8151

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	0.3425					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Consumer Products	1.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0718	0.6138	0.2612	3.9200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	783.5294	783.5294	0.0150	0.0144	788.1855
Landscaping	0.0927	0.0353	3.0592	1.6000e-004		0.0169	0.0169		0.0169	0.0169		5.4964	5.4964	5.3300e-003		5.6296
Total	**1.9323**	**0.6491**	**3.3204**	**4.0800e-003**		**0.0665**	**0.0665**		**0.0665**	**0.0665**	**0.0000**	**789.0259**	**789.0259**	**0.0204**	**0.0144**	**793.8151**

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	0.1484					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0718	0.6138	0.2612	3.9200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	783.5294	783.5294	0.0150	0.0144	788.1855
Landscaping	0.0914	0.0351	3.0371	1.6000e-004		0.0167	0.0167		0.0167	0.0167		5.4469	5.4469	5.2500e-003		5.5782
Total	**1.7369**	**0.6489**	**3.2983**	**4.0800e-003**		**0.0664**	**0.0664**		**0.0664**	**0.0664**	**0.0000**	**788.9763**	**788.9763**	**0.0203**	**0.0144**	**793.7637**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville_Tract6264 - Fresno County, Summer

Granville_Tract6264

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	37.00	Dwelling Unit	5.00	66,600.00	106

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase - 2020 - 2021 schedule

Off-road Equipment - increased equipment to account for shortened schedule from default

Vehicle Trips - TIS and ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 - Average VOC Content

Energy Mitigation - Assumed 5 kw solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Architectural Coating - Rule 4601 - Average VOC Content

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblConstructionPhase	NumDays	230.00	115.00
tblFireplaces	NumberGas	20.35	37.00
tblFireplaces	NumberNoFireplace	16.65	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	12.01	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	6.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblVehicleTrips	ST_TR	9.91	9.54

tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2020	30.3543	42.4632	28.6318	0.0444	18.2141	2.1983	20.4125	9.9699	2.0225	11.9924	0.0000	4,223.3885	4,223.3885	1.1959	0.0000	4,250.1225
2021	30.3299	1.5337	1.9053	3.2100e-003	0.0246	0.0943	0.1189	6.5400e-003	0.0942	0.1008	0.0000	305.6824	305.6824	0.0199	0.0000	306.1804
Maximum	**30.3543**	**42.4632**	**28.6318**	**0.0444**	**18.2141**	**2.1983**	**20.4125**	**9.9699**	**2.0225**	**11.9924**	**0.0000**	**4,223.3885**	**4,223.3885**	**1.1959**	**0.0000**	**4,250.1225**

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					
2020	30.3543	42.4632	28.6318	0.0444	18.2141	2.1983	20.4125	9.9699	2.0225	11.9924	0.0000	4,223.3885	4,223.3885	1.1959	0.0000	4,250.1225
2021	30.3299	1.5337	1.9053	3.2100e-003	0.0246	0.0943	0.1189	6.5400e-003	0.0942	0.1008	0.0000	305.6824	305.6824	0.0199	0.0000	306.1804
Maximum	**30.3543**	**42.4632**	**28.6318**	**0.0444**	**18.2141**	**2.1983**	**20.4125**	**9.9699**	**2.0225**	**11.9924**	**0.0000**	**4,223.3885**	**4,223.3885**	**1.1959**	**0.0000**	**4,250.1225**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	1.9323	0.6491	3.3204	4.0800e-003		0.0665	0.0665		0.0665	0.0665	0.0000	789.0259	789.0259	0.0203	0.0144	793.8151
Energy	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Mobile	0.8621	2.3614	8.4852	0.0249	2.1899	0.0207	2.2105	0.5850	0.0193	0.6043		2,514.4585	2,514.4585	0.1628		2,518.5281
Total	**2.8230**	**3.2547**	**11.9095**	**0.0305**	**2.1899**	**0.1069**	**2.2968**	**0.5850**	**0.1055**	**0.6905**	**0.0000**	**3,615.2890**	**3,615.2890**	**0.1891**	**0.0201**	**3,626.0008**

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	1.7369	0.6489	3.2983	4.0800e-003		0.0664	0.0664		0.0664	0.0664	0.0000	788.9763	788.9763	0.0203	0.0144	793.7637
Energy	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Mobile	0.8488	2.2691	8.0022	0.0233	2.0388	0.0194	2.0582	0.5446	0.0181	0.5627		2,351.6318	2,351.6318	0.1553		2,355.5137
Total	**2.6143**	**3.1622**	**11.4045**	**0.0289**	**2.0388**	**0.1055**	**2.1443**	**0.5446**	**0.1042**	**0.6488**	**0.0000**	**3,452.4127**	**3,452.4127**	**0.1815**	**0.0201**	**3,462.9350**

	ROG	NOx	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	**7.39**	**2.84**	**4.24**	**5.28**	**6.90**	**1.30**	**6.64**	**6.90**	**1.24**	**6.03**	**0.00**	**4.51**	**4.51**	**4.01**	**0.00**	**4.50**

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	6/1/2020	6/5/2020	5	5	
2	Grading	Grading	6/6/2020	6/17/2020	5	8	
3	Building Construction	Building Construction	6/18/2020	11/25/2020	5	115	
4	Paving	Paving	11/26/2020	12/21/2020	5	18	
5	Architectural Coating	Architectural Coating	12/22/2020	1/14/2021	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 134,865; Residential Outdoor: 44,955; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	6	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	6	7.00	97	0.37
Building Construction	Welders	2	8.00	46	0.45

Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	16	13.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0884	0.0459	0.5789	1.5100e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		150.5688	150.5688	4.0800e-003		150.6707
Total	**0.0884**	**0.0459**	**0.5789**	**1.5100e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**150.5688**	**150.5688**	**4.0800e-003**		**150.6707**

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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	0.0884	0.0459	0.5789	1.5100e-003	0.1479	9.3000e-004	0.1488	0.0392	8.5000e-004	0.0401		150.5688	150.5688	4.0800e-003		150.6707
Total	**0.0884**	**0.0459**	**0.5789**	**1.5100e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.5000e-004**	**0.0401**		**150.5688**	**150.5688**	**4.0800e-003**		**150.6707**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**6.5523**	**1.2734**	**7.8258**	**3.3675**	**1.1716**	**4.5390**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4439	30.1759	28.1405	0.0422		1.8434	1.8434		1.7255	1.7255		3,994.1506	3,994.1506	1.0525		4,020.4631
Total	**3.4439**	**30.1759**	**28.1405**	**0.0422**		**1.8434**	**1.8434**		**1.7255**	**1.7255**		**3,994.1506**	**3,994.1506**	**1.0525**		**4,020.4631**

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	0.0147	0.4889	0.0733	1.1500e-003	0.0271	2.6100e-003	0.0297	7.8000e-003	2.4900e-003	0.0103		120.4938	120.4938	0.0139		120.8417
Worker	0.0639	0.0332	0.4181	1.0900e-003	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0289		108.7441	108.7441	2.9400e-003		108.8177
Total	**0.0786**	**0.5220**	**0.4913**	**2.2400e-003**	**0.1339**	**3.2800e-003**	**0.1372**	**0.0361**	**3.1100e-003**	**0.0392**		**229.2379**	**229.2379**	**0.0169**		**229.6594**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4439	30.1759	28.1405	0.0422		1.8434	1.8434		1.7255	1.7255	0.0000	3,994.1506	3,994.1506	1.0525		4,020.4631

Total	**3.4439**	**30.1759**	**28.1405**	**0.0422**		**1.8434**	**1.8434**		**1.7255**	**1.7255**	**0.0000**	**3,994.1506**	**3,994.1506**	**1.0525**		**4,020.4631**

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	0.0147	0.4889	0.0733	1.1500e-003	0.0271	2.6100e-003	0.0297	7.8000e-003	2.4900e-003	0.0103		120.4938	120.4938	0.0139		120.8417
Worker	0.0639	0.0332	0.4181	1.0900e-003	0.1068	6.7000e-004	0.1075	0.0283	6.2000e-004	0.0289		108.7441	108.7441	2.9400e-003		108.8177
Total	**0.0786**	**0.5220**	**0.4913**	**2.2400e-003**	**0.1339**	**3.2800e-003**	**0.1372**	**0.0361**	**3.1100e-003**	**0.0392**		**229.2379**	**229.2379**	**0.0169**		**229.6594**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

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	0.0737	0.0383	0.4824	1.2600e-003	0.1232	7.7000e-004	0.1240	0.0327	7.1000e-004	0.0334		125.4740	125.4740	3.4000e-003		125.5589
Total	**0.0737**	**0.0383**	**0.4824**	**1.2600e-003**	**0.1232**	**7.7000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**125.4740**	**125.4740**	**3.4000e-003**		**125.5589**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**30.3396**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0147	7.6500e-003	0.0965	2.5000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6800e-003		25.0948	25.0948	6.8000e-004		25.1118
Total	**0.0147**	**7.6500e-003**	**0.0965**	**2.5000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6800e-003**		**25.0948**	**25.0948**	**6.8000e-004**		**25.1118**

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	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**30.3396**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0147	7.6500e-003	0.0965	2.5000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6800e-003		25.0948	25.0948	6.8000e-004		25.1118
Total	**0.0147**	**7.6500e-003**	**0.0965**	**2.5000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6800e-003**		**25.0948**	**25.0948**	**6.8000e-004**		**25.1118**

3.6 Architectural Coating - 2021

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	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**30.3163**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0136	6.8100e-003	0.0877	2.4000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6700e-003		24.2343	24.2343	6.0000e-004		24.2495
Total	**0.0136**	**6.8100e-003**	**0.0877**	**2.4000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6700e-003**		**24.2343**	**24.2343**	**6.0000e-004**		**24.2495**

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	30.0974					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**30.3163**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

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	0.0136	6.8100e-003	0.0877	2.4000e-004	0.0246	1.5000e-004	0.0248	6.5400e-003	1.4000e-004	6.6700e-003		24.2343	24.2343	6.0000e-004		24.2495
Total	**0.0136**	**6.8100e-003**	**0.0877**	**2.4000e-004**	**0.0246**	**1.5000e-004**	**0.0248**	**6.5400e-003**	**1.4000e-004**	**6.6700e-003**		**24.2343**	**24.2343**	**6.0000e-004**		**24.2495**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

Mitigated	0.8488	2.2691	8.0022	0.0233	2.0388	0.0194	2.0582	0.5446	0.0181	0.5627		2,351.6318	2,351.6318	0.1553		2,355.5137
Unmitigated	0.8621	2.3614	8.4852	0.0249	2.1899	0.0207	2.2105	0.5850	0.0193	0.6043		2,514.4585	2,514.4585	0.1628		2,518.5281

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	349.28	352.98	316.35	1,011,041	941,280
Total	349.28	352.98	316.35	1,011,041	941,280

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

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

Category	lb/day											lb/day				
NaturalGas Mitigated	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
NaturalGas Unmitigated	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575

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					
Single Family Housing	2650.34	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Total		**0.0286**	**0.2443**	**0.1039**	**1.5600e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**		**311.8046**	**311.8046**	**5.9800e-003**	**5.7200e-003**	**313.6575**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	2.65034	0.0286	0.2443	0.1039	1.5600e-003		0.0198	0.0198		0.0198	0.0198		311.8046	311.8046	5.9800e-003	5.7200e-003	313.6575
Total		**0.0286**	**0.2443**	**0.1039**	**1.5600e-003**		**0.0198**	**0.0198**		**0.0198**	**0.0198**		**311.8046**	**311.8046**	**5.9800e-003**	**5.7200e-003**	**313.6575**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.7369	0.6489	3.2983	4.0800e-003		0.0664	0.0664		0.0664	0.0664	0.0000	788.9763	788.9763	0.0203	0.0144	793.7637
Unmitigated	1.9323	0.6491	3.3204	4.0800e-003		0.0665	0.0665		0.0665	0.0665	0.0000	789.0259	789.0259	0.0203	0.0144	793.8151

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	0.3425					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Consumer Products	1.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0718	0.6138	0.2612	3.9200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	783.5294	783.5294	0.0150	0.0144	788.1855
Landscaping	0.0927	0.0353	3.0592	1.6000e-004		0.0169	0.0169		0.0169	0.0169		5.4964	5.4964	5.3300e-003		5.6296
Total	**1.9323**	**0.6491**	**3.3204**	**4.0800e-003**		**0.0665**	**0.0665**		**0.0665**	**0.0665**	**0.0000**	**789.0259**	**789.0259**	**0.0204**	**0.0144**	**793.8151**

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	0.1484					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4252					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0718	0.6138	0.2612	3.9200e-003		0.0496	0.0496		0.0496	0.0496	0.0000	783.5294	783.5294	0.0150	0.0144	788.1855
Landscaping	0.0914	0.0351	3.0371	1.6000e-004		0.0167	0.0167		0.0167	0.0167		5.4469	5.4469	5.2500e-003		5.5782
Total	**1.7369**	**0.6489**	**3.2983**	**4.0800e-003**		**0.0664**	**0.0664**		**0.0664**	**0.0664**	**0.0000**	**788.9763**	**788.9763**	**0.0203**	**0.0144**	**793.7637**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville - Tracts 6239 and 6264 2021

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	199.00	Dwelling Unit	50.00	358,200.00	569

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Renewable Portfolio Standard

Land Use - Tract Maps

Construction Phase - Operational only

Off-road Equipment - operational only

Trips and VMT - Operational only

Architectural Coating - Rule 4601 Average Architectural Coating VOC Content

Vehicle Trips - TIS, ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning devices

Energy Use -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC content

Energy Mitigation - Assumed 5 kW solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblFireplaces	NumberGas	109.45	199.00
tblFireplaces	NumberNoFireplace	89.55	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	64.61	50.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	14.00	0.00
tblVehicleTrips	ST_TR	9.91	9.54

tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.4569	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**1.4569**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	1.4569	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**1.4569**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**6-3-2019**	**9-2-2019**	1.4190	1.4190
		Highest	1.4190	1.4190

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	1.7959	0.1524	1.5384	9.4000e-004		0.0191	0.0191		0.0191	0.0191	0.0000	159.1559	159.1559	5.3400e-003	2.8700e-003	160.1459
Energy	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	784.8181	784.8181	0.0283	9.8300e-003	788.4552
Mobile	0.6373	2.3308	7.2418	0.0220	2.0404	0.0198	2.0602	0.5462	0.0185	0.5647	0.0000	2,019.5834	2,019.5834	0.1398	0.0000	2,023.0773
Waste						0.0000	0.0000		0.0000	0.0000	41.5807	0.0000	41.5807	2.4574	0.0000	103.0144
Water						0.0000	0.0000		0.0000	0.0000	4.1134	28.7322	32.8456	0.4238	0.0102	46.4931
Total	**2.4613**	**2.7230**	**8.8822**	**0.0245**	**2.0404**	**0.0583**	**2.0986**	**0.5462**	**0.0570**	**0.6032**	**45.6941**	**2,992.2896**	**3,037.9836**	**3.0545**	**0.0229**	**3,121.1858**

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	1.6047	0.1523	1.5277	9.4000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	159.1342	159.1342	5.3100e-003	2.8700e-003	160.1233

Energy	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	296.1438	296.1438	6.1600e-003	5.2600e-003	297.8662
Mobile	0.6255	2.2372	6.8600	0.0206	1.8996	0.0186	1.9182	0.5085	0.0174	0.5259	0.0000	1,889.1476	1,889.1476	0.1336	0.0000	1,892.4876
Waste						0.0000	0.0000		0.0000	0.0000	10.3952	0.0000	10.3952	0.6143	0.0000	25.7536
Water						0.0000	0.0000		0.0000	0.0000	3.2907	24.1426	27.4333	0.3391	8.2100e-003	38.3559
Total	**2.2583**	**2.6293**	**8.4898**	**0.0230**	**1.8996**	**0.0570**	**1.9566**	**0.5085**	**0.0558**	**0.5643**	**13.6859**	**2,368.5682**	**2,382.2541**	**1.0985**	**0.0163**	**2,414.5866**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.25**	**3.44**	**4.42**	**5.81**	**6.90**	**2.18**	**6.77**	**6.90**	**2.11**	**6.45**	**70.05**	**20.84**	**21.58**	**64.04**	**28.77**	**22.64**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/3/2019	8/16/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 725,355; Residential Outdoor: 241,785; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	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
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4569**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.4569					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4569**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6255	2.2372	6.8600	0.0206	1.8996	0.0186	1.9182	0.5085	0.0174	0.5259	0.0000	1,889.1476	1,889.1476	0.1336	0.0000	1,892.4876
Unmitigated	0.6373	2.3308	7.2418	0.0220	2.0404	0.0198	2.0602	0.5462	0.0185	0.5647	0.0000	2,019.5834	2,019.5834	0.1398	0.0000	2,023.0773

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,878.56	1,898.46	1701.45	5,437,764	5,062,558
Total	1,878.56	1,898.46	1,701.45	5,437,764	5,062,558

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	18.4971	18.4971	8.4000e-004	1.7000e-004	18.5696
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	507.1713	507.1713	0.0229	4.7400e-003	509.1586
NaturalGas Mitigated	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
NaturalGas Unmitigated	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.2029e+006	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
Total		**0.0281**	**0.2397**	**0.1020**	**1.5300e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**277.6467**	**277.6467**	**5.3200e-003**	**5.0900e-003**	**279.2966**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.2029e+006	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
Total		**0.0281**	**0.2397**	**0.1020**	**1.5300e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**277.6467**	**277.6467**	**5.3200e-003**	**5.0900e-003**	**279.2966**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.74339e+006	507.1713	0.0229	4.7400e-003	509.1586
Total		**507.1713**	**0.0229**	**4.7400e-003**	**509.1586**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	63583.3	18.4971	8.4000e-004	1.7000e-004	18.5696
Total		**18.4971**	**8.4000e-004**	**1.7000e-004**	**18.5696**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6047	0.1523	1.5277	9.4000e-004		0.0190	0.0190		0.0190	0.0190	0.0000	159.1342	159.1342	5.3100e-003	2.8700e-003	160.1233
Unmitigated	1.7959	0.1524	1.5384	9.4000e-004		0.0191	0.0191		0.0191	0.0191	0.0000	159.1559	159.1559	5.3400e-003	2.8700e-003	160.1459

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	0.3362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products	1.3990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0158	0.1353	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping	0.0449	0.0171	1.4808	8.0000e-005		8.1600e-003	8.1600e-003		8.1600e-003	8.1600e-003	0.0000	2.4136	2.4136	2.3400e-003	0.0000	2.4721
Total	**1.7959**	**0.1524**	**1.5384**	**9.4000e-004**		**0.0191**	**0.0191**		**0.0191**	**0.0191**	**0.0000**	**159.1559**	**159.1559**	**5.3400e-003**	**2.8700e-003**	**160.1459**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1457					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0158	0.1353	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping	0.0442	0.0170	1.4701	8.0000e-005		8.1000e-003	8.1000e-003		8.1000e-003	8.1000e-003	0.0000	2.3919	2.3919	2.3100e-003	0.0000	2.4495
Total	**1.6047**	**0.1523**	**1.5277**	**9.4000e-004**		**0.0190**	**0.0190**		**0.0190**	**0.0190**	**0.0000**	**159.1342**	**159.1342**	**5.3100e-003**	**2.8700e-003**	**160.1233**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e

Category	MT/yr			
Mitigated	27.4333	0.3391	8.2100e-003	38.3559
Unmitigated	32.8456	0.4238	0.0102	46.4931

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	12.9657 / 8.174	32.8456	0.4238	0.0102	46.4931
Total		**32.8456**	**0.4238**	**0.0102**	**46.4931**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.3725 / 7.67538	27.4333	0.3391	8.2100e-003	38.3559
Total		**27.4333**	**0.3391**	**8.2100e-003**	**38.3559**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.3952	0.6143	0.0000	25.7536
Unmitigated	41.5807	2.4574	0.0000	103.0144

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	204.84	41.5807	2.4574	0.0000	103.0144
Total		**41.5807**	**2.4574**	**0.0000**	**103.0144**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	51.21	10.3952	0.6143	0.0000	25.7536
Total		**10.3952**	**0.6143**	**0.0000**	**25.7536**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville - Tracts 6239 and 6264 2021

Fresno County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	199.00	Dwelling Unit	50.00	358,200.00	569

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Renewable Portfolio Standard

Land Use - Tract Maps

Construction Phase - Operational only

Off-road Equipment - operational only

Trips and VMT - Operational only

Architectural Coating - Rule 4601 Average Architectural Coating VOC Content

Vehicle Trips - TIS, ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning devices

Energy Use -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC content

Energy Mitigation - Assumed 5 kW solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblFireplaces	NumberGas	109.45	199.00
tblFireplaces	NumberNoFireplace	89.55	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	64.61	50.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	14.00	0.00
tblVehicleTrips	ST_TR	9.91	9.54

tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	52.9773	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**52.9773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	52.9773	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**52.9773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	10.3925	3.4910	17.8581	0.0219		0.3576	0.3576		0.3576	0.3576	0.0000	4,243.6796	4,243.6796	0.1094	0.0773	4,269.4381
Energy	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Mobile	3.2544	13.4505	41.0398	0.1195	11.7779	0.1119	11.8898	3.1461	0.1046	3.2507		12,095.4846	12,095.4846	0.8848		12,117.6040
Total	**13.8006**	**18.2552**	**59.4569**	**0.1498**	**11.7779**	**0.5757**	**12.3536**	**3.1461**	**0.5684**	**3.7145**	**0.0000**	**18,016.1674**	**18,016.1674**	**1.0263**	**0.1080**	**18,074.0110**

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	9.3415	3.4898	17.7395	0.0219		0.3569	0.3569		0.3569	0.3569	0.0000	4,243.4133	4,243.4133	0.1090	0.0773	4,269.1616
Energy	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Mobile	3.1894	12.8986	39.0215	0.1118	10.9652	0.1051	11.0703	2.9291	0.0983	3.0273		11,313.2985	11,313.2985	0.8474		11,334.4831
Total	**12.6847**	**17.7020**	**57.3200**	**0.1421**	**10.9652**	**0.5682**	**11.5334**	**2.9291**	**0.5614**	**3.4904**	**0.0000**	**17,233.7151**	**17,233.7151**	**0.9885**	**0.1080**	**17,290.6136**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**8.09**	**3.03**	**3.59**	**5.16**	**6.90**	**1.30**	**6.64**	**6.90**	**1.24**	**6.03**	**0.00**	**4.34**	**4.34**	**3.68**	**0.00**	**4.33**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/3/2019	8/16/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 725,355; Residential Outdoor: 241,785; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	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
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2019

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Archit. Coating	52.9773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	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	**52.9773**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	52.9773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	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	**52.9773**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1894	12.8986	39.0215	0.1118	10.9652	0.1051	11.0703	2.9291	0.0983	3.0273		11,313.2985	11,313.2985	0.8474		11,334.4831

Unmitigated	3.2544	13.4505	41.0398	0.1195	11.7779	0.1119	11.8898	3.1461	0.1046	3.2507		12,095.4846	12,095.4846	0.8848		12,117.6040

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,878.56	1,898.46	1701.45	5,437,764	5,062,558
Total	1,878.56	1,898.46	1,701.45	5,437,764	5,062,558

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

NaturalGas Mitigated	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
NaturalGas Unmitigated	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689

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					
Single Family Housing	14254.5	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Total		**0.1537**	**1.3137**	**0.5590**	**8.3900e-003**		**0.1062**	**0.1062**		**0.1062**	**0.1062**		**1,677.0033**	**1,677.0033**	**0.0321**	**0.0308**	**1,686.9689**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	14.2545	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Total		**0.1537**	**1.3137**	**0.5590**	**8.3900e-003**		**0.1062**	**0.1062**		**0.1062**	**0.1062**		**1,677.0033**	**1,677.0033**	**0.0321**	**0.0308**	**1,686.9689**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	9.3415	3.4898	17.7395	0.0219		0.3569	0.3569		0.3569	0.3569	0.0000	4,243.4133	4,243.4133	0.1090	0.0773	4,269.1616
Unmitigated	10.3925	3.4910	17.8581	0.0219		0.3576	0.3576		0.3576	0.3576	0.0000	4,243.6796	4,243.6796	0.1094	0.0773	4,269.4381

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.8422					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3863	3.3011	1.4047	0.0211		0.2669	0.2669		0.2669	0.2669	0.0000	4,214.1177	4,214.1177	0.0808	0.0773	4,239.1600

Landscaping	0.4985	0.1899	16.4534	8.7000e-004		0.0907	0.0907		0.0907	0.0907		29.5619	29.5619	0.0287		30.2781
Total	**10.3925**	**3.4910**	**17.8581**	**0.0219**		**0.3576**	**0.3576**		**0.3576**	**0.3576**	**0.0000**	**4,243.6796**	**4,243.6796**	**0.1094**	**0.0773**	**4,269.4381**

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	0.7983					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3863	3.3011	1.4047	0.0211		0.2669	0.2669		0.2669	0.2669	0.0000	4,214.1177	4,214.1177	0.0808	0.0773	4,239.1600
Landscaping	0.4915	0.1887	16.3348	8.6000e-004		0.0900	0.0900		0.0900	0.0900		29.2956	29.2956	0.0282		30.0016
Total	**9.3415**	**3.4898**	**17.7395**	**0.0219**		**0.3569**	**0.3569**		**0.3569**	**0.3569**	**0.0000**	**4,243.4133**	**4,243.4133**	**0.1090**	**0.0773**	**4,269.1616**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville - Tracts 6239 and 6264 2021 - Fresno County, Summer

Granville - Tracts 6239 and 6264 2021

Fresno County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	199.00	Dwelling Unit	50.00	358,200.00	569

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Renewable Portfolio Standard

Land Use - Tract Maps

Construction Phase - Operational only

Off-road Equipment - operational only

Trips and VMT - Operational only

Architectural Coating - Rule 4601 Average Architectural Coating VOC Content

Vehicle Trips - TIS, ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning devices

Energy Use -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC content

Energy Mitigation - Assumed 5 kW solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblFireplaces	NumberGas	109.45	199.00
tblFireplaces	NumberNoFireplace	89.55	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.49	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.4000e-003
tblFleetMix	LHD2	4.7320e-003	9.0000e-004
tblFleetMix	MCY	5.1540e-003	2.6000e-003
tblFleetMix	MDV	0.12	0.05
tblFleetMix	MH	6.2900e-004	1.6000e-003
tblFleetMix	MHD	0.03	9.0000e-003
tblFleetMix	OBUS	2.3660e-003	0.00
tblFleetMix	SBUS	1.0970e-003	9.0000e-004
tblFleetMix	UBUS	1.5900e-003	4.4000e-003
tblLandUse	LotAcreage	64.61	50.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	14.00	0.00
tblVehicleTrips	ST_TR	9.91	9.54

tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	52.9773	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**52.9773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	52.9773	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**52.9773**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**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	10.3925	3.4910	17.8581	0.0219		0.3576	0.3576		0.3576	0.3576	0.0000	4,243.6796	4,243.6796	0.1094	0.0773	4,269.4381
Energy	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Mobile	4.6368	12.7005	45.6368	0.1338	11.7779	0.1111	11.8890	3.1461	0.1038	3.2499		13,523.7092	13,523.7092	0.8755		13,545.5972
Total	**15.1830**	**17.5052**	**64.0540**	**0.1641**	**11.7779**	**0.5749**	**12.3528**	**3.1461**	**0.5676**	**3.7137**	**0.0000**	**19,444.3920**	**19,444.3920**	**1.0171**	**0.1080**	**19,502.0043**

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	9.3415	3.4898	17.7395	0.0219		0.3569	0.3569		0.3569	0.3569	0.0000	4,243.4133	4,243.4133	0.1090	0.0773	4,269.1616
Energy	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Mobile	4.5652	12.2042	43.0390	0.1251	10.9652	0.1043	11.0695	2.9291	0.0975	3.0265		12,647.9654	12,647.9654	0.8352		12,668.8442
Total	**14.0605**	**17.0077**	**61.3376**	**0.1554**	**10.9652**	**0.5674**	**11.5326**	**2.9291**	**0.5606**	**3.4896**	**0.0000**	**18,568.3820**	**18,568.3820**	**0.9763**	**0.1080**	**18,624.9747**

	ROG	NOx	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	**7.39**	**2.84**	**4.24**	**5.28**	**6.90**	**1.30**	**6.64**	**6.90**	**1.24**	**6.03**	**0.00**	**4.51**	**4.51**	**4.01**	**0.00**	**4.50**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/3/2019	8/16/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 725,355; Residential Outdoor: 241,785; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	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
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2019

Unmitigated Construction On-Site

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

Category	lb/day										lb/day					
Archit. Coating	52.9773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	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	**52.9773**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	52.9773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	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	**52.9773**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.5652	12.2042	43.0390	0.1251	10.9652	0.1043	11.0695	2.9291	0.0975	3.0265		12,647.9654	12,647.9654	0.8352		12,668.8442

Unmitigated	4.6368	12.7005	45.6368	0.1338	11.7779	0.1111	11.8890	3.1461	0.1038	3.2499		13,523.7092	13,523.7092	0.8755		13,545.5972

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,878.56	1,898.46	1701.45	5,437,764	5,062,558
Total	1,878.56	1,898.46	1,701.45	5,437,764	5,062,558

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.537300	0.200000	0.167100	0.054200	0.001400	0.000900	0.009000	0.020600	0.000000	0.004400	0.002600	0.000900	0.001600

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					

NaturalGas Mitigated	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
NaturalGas Unmitigated	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689

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					
Single Family Housing	14254.5	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Total		**0.1537**	**1.3137**	**0.5590**	**8.3900e-003**		**0.1062**	**0.1062**		**0.1062**	**0.1062**		**1,677.0033**	**1,677.0033**	**0.0321**	**0.0308**	**1,686.9689**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	14.2545	0.1537	1.3137	0.5590	8.3900e-003		0.1062	0.1062		0.1062	0.1062		1,677.0033	1,677.0033	0.0321	0.0308	1,686.9689
Total		**0.1537**	**1.3137**	**0.5590**	**8.3900e-003**		**0.1062**	**0.1062**		**0.1062**	**0.1062**		**1,677.0033**	**1,677.0033**	**0.0321**	**0.0308**	**1,686.9689**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	9.3415	3.4898	17.7395	0.0219		0.3569	0.3569		0.3569	0.3569	0.0000	4,243.4133	4,243.4133	0.1090	0.0773	4,269.1616
Unmitigated	10.3925	3.4910	17.8581	0.0219		0.3576	0.3576		0.3576	0.3576	0.0000	4,243.6796	4,243.6796	0.1094	0.0773	4,269.4381

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.8422					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3863	3.3011	1.4047	0.0211		0.2669	0.2669		0.2669	0.2669	0.0000	4,214.1177	4,214.1177	0.0808	0.0773	4,239.1600

Landscaping	0.4985	0.1899	16.4534	8.7000e-004		0.0907	0.0907		0.0907	0.0907		29.5619	29.5619	0.0287		30.2781
Total	**10.3925**	**3.4910**	**17.8581**	**0.0219**		**0.3576**	**0.3576**		**0.3576**	**0.3576**	**0.0000**	**4,243.6796**	**4,243.6796**	**0.1094**	**0.0773**	**4,269.4381**

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	0.7983					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.6655					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.3863	3.3011	1.4047	0.0211		0.2669	0.2669		0.2669	0.2669	0.0000	4,214.1177	4,214.1177	0.0808	0.0773	4,239.1600
Landscaping	0.4915	0.1887	16.3348	8.6000e-004		0.0900	0.0900		0.0900	0.0900		29.2956	29.2956	0.0282		30.0016
Total	**9.3415**	**3.4898**	**17.7395**	**0.0219**		**0.3569**	**0.3569**		**0.3569**	**0.3569**	**0.0000**	**4,243.4133**	**4,243.4133**	**0.1090**	**0.0773**	**4,269.1616**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville - Tracts 6239 and 6264 2020 - Fresno County, Annual

Granville - Tracts 6239 and 6264 2020

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	199.00	Dwelling Unit	50.00	358,200.00	569

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Renewable Portfolio Standard

Land Use - Tract Maps

Construction Phase - Operational only

Off-road Equipment - operational only

Trips and VMT - Operational only

Architectural Coating - Rule 4601 Average Architectural Coating VOC Content

Vehicle Trips - TIS, ITE Trip Generation Manual 10th Edition, Land Use 210

Woodstoves - No woodburning devices

Energy Use -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC content

Energy Mitigation - Assumed 5 kW solar systems for residences

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide diversion/recycling mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	65.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	65.00
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblFireplaces	NumberGas	109.45	199.00
tblFireplaces	NumberNoFireplace	89.55	0.00
tblFleetMix	HHD	0.12	0.02
tblFleetMix	LDA	0.48	0.54
tblFleetMix	LDT1	0.03	0.20
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.02	1.6000e-003
tblFleetMix	LHD2	4.9970e-003	9.0000e-004
tblFleetMix	MCY	5.2610e-003	2.6000e-003
tblFleetMix	MDV	0.13	0.05
tblFleetMix	MH	6.6700e-004	1.5000e-003
tblFleetMix	MHD	0.03	9.1000e-003
tblFleetMix	OBUS	2.3690e-003	0.00
tblFleetMix	SBUS	1.1150e-003	1.1000e-003
tblFleetMix	UBUS	1.6750e-003	4.4000e-003
tblLandUse	LotAcreage	64.61	50.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	641.35	290

tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblTripsAndVMT	WorkerTripNumber	14.00	0.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	159.1559	159.1559	5.3600e-003	2.8700e-003	160.1462
Energy											0.0000	506.9750	506.9750	0.0227	9.0400e-003	510.2381
Mobile											0.0000	2,081.2149	2,081.2149	0.1479	0.0000	2,084.9125
Waste											41.5807	0.0000	41.5807	2.4574	0.0000	103.0144
Water											4.1134	12.9919	17.1053	0.4235	0.0102	30.7316
Total											**45.6941**	**2,760.3376**	**2,806.0317**	**3.0568**	**0.0221**	**2,889.0428**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Area											0.0000	159.1342	159.1342	5.3200e-003	2.8700e-003	160.1236
Energy											0.0000	286.0106	286.0106	5.9600e-003	5.2300e-003	287.7193
Mobile											0.0000	1,946.6979	1,946.6979	0.1413	0.0000	1,950.2313
Waste											10.3952	0.0000	10.3952	0.6143	0.0000	25.7536
Water											3.2907	10.9166	14.2073	0.3388	8.1700e-003	25.1121
Total											**13.6859**	**2,402.7592**	**2,416.4451**	**1.1058**	**0.0163**	**2,448.9399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**70.05**	**12.95**	**13.88**	**63.83**	**26.41**	**15.23**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	6/3/2019	8/16/2019	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 725,355; Residential Outdoor: 241,785; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	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
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	1,946.6979	1,946.6979	0.1413	0.0000	1,950.2313
Unmitigated											0.0000	2,081.2149	2,081.2149	0.1479	0.0000	2,084.9125

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,878.56	1,898.46	1701.45	5,437,764	5,062,558
Total	1,878.56	1,898.46	1,701.45	5,437,764	5,062,558

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.540200	0.197200	0.166800	0.054000	0.001600	0.000900	0.009100	0.020600	0.000000	0.004400	0.002600	0.001100	0.001500

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	8.3639	8.3639	6.3000e-004	1.4000e-004	8.4227
Electricity Unmitigated											0.0000	229.3283	229.3283	0.0174	3.9500e-003	230.9415
NaturalGas Mitigated											0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
NaturalGas Unmitigated											0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.2029e+006											0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
Total												**0.0000**	**277.6467**	**277.6467**	**5.3200e-003**	**5.0900e-003**	**279.2966**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.2029e+006											0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
Total												**0.0000**	**277.6467**	**277.6467**	**5.3200e-003**	**5.0900e-003**	**279.2966**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.74339e+006	229.3283	0.0174	3.9500e-003	230.9415
Total		**229.3283**	**0.0174**	**3.9500e-003**	**230.9415**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	63583.3	8.3639	6.3000e-004	1.4000e-004	8.4227
Total		**8.3639**	**6.3000e-004**	**1.4000e-004**	**8.4227**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	159.1342	159.1342	5.3200e-003	2.8700e-003	160.1236
Unmitigated											0.0000	159.1559	159.1559	5.3600e-003	2.8700e-003	160.1462

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					

Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping											0.0000	2.4136	2.4136	2.3500e-003	0.0000	2.4725
Total											**0.0000**	**159.1559**	**159.1559**	**5.3500e-003**	**2.8700e-003**	**160.1462**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping											0.0000	2.3919	2.3919	2.3200e-003	0.0000	2.4499
Total											**0.0000**	**159.1342**	**159.1342**	**5.3200e-003**	**2.8700e-003**	**160.1236**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.2073	0.3388	8.1700e-003	25.1121
Unmitigated	17.1053	0.4235	0.0102	30.7316

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	12.9657 / 8.174	17.1053	0.4235	0.0102	30.7316
Total		**17.1053**	**0.4235**	**0.0102**	**30.7316**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.3725 / 7.67538	14.2073	0.3388	8.1700e-003	25.1121
Total		**14.2073**	**0.3388**	**8.1700e-003**	**25.1121**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.3952	0.6143	0.0000	25.7536
Unmitigated	41.5807	2.4574	0.0000	103.0144

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	204.84	41.5807	2.4574	0.0000	103.0144
Total		**41.5807**	**2.4574**	**0.0000**	**103.0144**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	51.21	10.3952	0.6143	0.0000	25.7536
Total		**10.3952**	**0.6143**	**0.0000**	**25.7536**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville Trqcts 6239 and 6264 2030

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	199.00	Dwelling Unit	50.00	358,200.00	569

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2030
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	240.7	**CH4 Intensity (lb/MWhr)**	0.018	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Renewable Portfolio Standard

Land Use - Tract Maps

Construction Phase -

Off-road Equipment - Operational Only

Trips and VMT - Operational only

Vehicle Trips - TIS, ITE Trip Generation 10th Edition, Land Use 210

Woodstoves - No woodburning devices

Area Coating -

Energy Use -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Average VOC Content

Energy Mitigation - Assumed 5 kW solar system - annual kWh generated per system = 8441

Water Mitigation - Model Water Efficient Landscape Ordinance, Green Building Code

Waste Mitigation - 75 percent statewide recycling/diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	150	65
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	150	65
tblFireplaces	NumberGas	109.45	199.00
tblFireplaces	NumberNoFireplace	89.55	0.00
tblFleetMix	HHD	0.13	0.02
tblFleetMix	LDA	0.52	0.51
tblFleetMix	LDT1	0.03	0.22
tblFleetMix	LDT2	0.18	0.17
tblFleetMix	LHD1	9.7000e-003	8.0000e-004
tblFleetMix	LHD2	3.4040e-003	1.0000e-003
tblFleetMix	MCY	4.5630e-003	2.5000e-003
tblFleetMix	MDV	0.09	0.06
tblFleetMix	MH	4.3600e-004	3.0000e-003
tblFleetMix	MHD	0.03	7.4000e-003
tblFleetMix	OBUS	2.3060e-003	0.00
tblFleetMix	SBUS	9.9800e-004	1.2000e-003
tblFleetMix	UBUS	1.1850e-003	4.4000e-003
tblLandUse	LotAcreage	64.61	50.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	641.35	240.7

tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44

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					
2029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	1.7951	0.1523	1.5313	9.4000e-004		0.0191	0.0191		0.0191	0.0191	0.0000	159.1559	159.1559	5.3000e-003	2.8700e-003	160.1449
Energy	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	467.9892	467.9892	0.0196	8.2500e-003	470.9376
Mobile	0.3442	1.2275	3.8672	0.0166	2.0395	0.0112	2.0507	0.5459	0.0104	0.5564	0.0000	1,534.7014	1,534.7014	0.0769	0.0000	1,536.6242
Waste						0.0000	0.0000		0.0000	0.0000	41.5807	0.0000	41.5807	2.4574	0.0000	103.0144
Water						0.0000	0.0000		0.0000	0.0000	4.1134	10.7833	14.8967	0.4233	0.0102	28.5052
Total	**2.1673**	**1.6196**	**5.5005**	**0.0191**	**2.0395**	**0.0497**	**2.0892**	**0.5459**	**0.0489**	**0.5949**	**45.6941**	**2,172.6297**	**2,218.3238**	**2.9824**	**0.0213**	**2,299.2262**

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	1.6039	0.1522	1.5207	9.4000e-004		0.0191	0.0191		0.0191	0.0191	0.0000	159.1342	159.1342	5.2700e-003	2.8700e-003	160.1223

Energy	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	284.5887	284.5887	5.8400e-003	5.2100e-003	286.2860
Mobile	0.3379	1.1877	3.6556	0.0156	1.8987	0.0106	1.9093	0.5083	9.8000e-003	0.5181	0.0000	1,435.4646	1,435.4646	0.0735	0.0000	1,437.3009
Waste						0.0000	0.0000		0.0000	0.0000	10.3952	0.0000	10.3952	0.6143	0.0000	25.7536
Water						0.0000	0.0000		0.0000	0.0000	3.2907	9.0608	12.3515	0.3387	8.1300e-003	23.2413
Total	**1.9699**	**1.5796**	**5.2783**	**0.0180**	**1.8987**	**0.0490**	**1.9477**	**0.5083**	**0.0483**	**0.5565**	**13.6859**	**1,888.2483**	**1,901.9342**	**1.0376**	**0.0162**	**1,932.7040**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**9.11**	**2.47**	**4.04**	**5.65**	**6.90**	**1.49**	**6.77**	**6.90**	**1.41**	**6.45**	**70.05**	**13.09**	**14.26**	**65.21**	**23.83**	**15.94**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/1/2029	1/9/2030	5	50	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Demolition - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

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

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Mitigated	0.3379	1.1877	3.6556	0.0156	1.8987	0.0106	1.9093	0.5083	9.8000e-003	0.5181	0.0000	1,435.4646	1,435.4646	0.0735	0.0000	1,437.3009
Unmitigated	0.3442	1.2275	3.8672	0.0166	2.0395	0.0112	2.0507	0.5459	0.0104	0.5564	0.0000	1,534.7014	1,534.7014	0.0769	0.0000	1,536.6242

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,878.56	1,898.46	1701.45	5,437,764	5,062,558
Total	1,878.56	1,898.46	1,701.45	5,437,764	5,062,558

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.511000	0.223100	0.169000	0.059300	0.000800	0.001000	0.007400	0.017300	0.000000	0.004400	0.002500	0.001200	0.003000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive 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	6.9420	6.9420	5.2000e-004	1.2000e-004	6.9894
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	190.3425	190.3425	0.0142	3.1600e-003	191.6409
NaturalGas Mitigated	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
NaturalGas Unmitigated	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.2029e+006	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
Total		**0.0281**	**0.2397**	**0.1020**	**1.5300e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**277.6467**	**277.6467**	**5.3200e-003**	**5.0900e-003**	**279.2966**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	5.2029e+006	0.0281	0.2397	0.1020	1.5300e-003		0.0194	0.0194		0.0194	0.0194	0.0000	277.6467	277.6467	5.3200e-003	5.0900e-003	279.2966
Total		**0.0281**	**0.2397**	**0.1020**	**1.5300e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**277.6467**	**277.6467**	**5.3200e-003**	**5.0900e-003**	**279.2966**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.74339e+006	190.3425	0.0142	3.1600e-003	191.6409
Total		**190.3425**	**0.0142**	**3.1600e-003**	**191.6409**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	63583.3	6.9420	5.2000e-004	1.2000e-004	6.9894
Total		**6.9420**	**5.2000e-004**	**1.2000e-004**	**6.9894**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - 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	1.6039	0.1522	1.5207	9.4000e-004		0.0191	0.0191		0.0191	0.0191	0.0000	159.1342	159.1342	5.2700e-003	2.8700e-003	160.1223
Unmitigated	1.7951	0.1523	1.5313	9.4000e-004		0.0191	0.0191		0.0191	0.0191	0.0000	159.1559	159.1559	5.3000e-003	2.8700e-003	160.1449

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	0.3362					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0158	0.1353	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping	0.0441	0.0170	1.4737	8.0000e-005		8.1900e-003	8.1900e-003		8.1900e-003	8.1900e-003	0.0000	2.4136	2.4136	2.3000e-003	0.0000	2.4711
Total	**1.7951**	**0.1523**	**1.5313**	**9.4000e-004**		**0.0191**	**0.0191**		**0.0191**	**0.0191**	**0.0000**	**159.1559**	**159.1559**	**5.3000e-003**	**2.8700e-003**	**160.1449**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1457					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0158	0.1353	0.0576	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping	0.0435	0.0169	1.4631	8.0000e-005		8.1300e-003	8.1300e-003		8.1300e-003	8.1300e-003	0.0000	2.3919	2.3919	2.2700e-003	0.0000	2.4486
Total	**1.6039**	**0.1522**	**1.5207**	**9.4000e-004**		**0.0191**	**0.0191**		**0.0191**	**0.0191**	**0.0000**	**159.1342**	**159.1342**	**5.2700e-003**	**2.8700e-003**	**160.1223**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.3515	0.3387	8.1300e-003	23.2413
Unmitigated	14.8967	0.4233	0.0102	28.5052

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	12.9657 / 8.174	14.8967	0.4233	0.0102	28.5052
Total		**14.8967**	**0.4233**	**0.0102**	**28.5052**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.3725 / 7.67538	12.3515	0.3387	8.1300e-003	23.2413
Total		**12.3515**	**0.3387**	**8.1300e-003**	**23.2413**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	10.3952	0.6143	0.0000	25.7536
Unmitigated	41.5807	2.4574	0.0000	103.0144

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	204.84	41.5807	2.4574	0.0000	103.0144
Total		**41.5807**	**2.4574**	**0.0000**	**103.0144**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	51.21	10.3952	0.6143	0.0000	25.7536
Total		**10.3952**	**0.6143**	**0.0000**	**25.7536**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Granville Tracts 6239 and 6264 BAU - Fresno County, Annual

Granville Tracts 6239 and 6264 BAU

Fresno County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	199.00	Dwelling Unit	50.00	358,200.00	569

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Tract Map

Construction Phase -

Off-road Equipment - Operational only

Trips and VMT - Operational only

Vehicle Trips - TIS, ITE 10th Edition

Fleet Mix - SJVAPCD Fleet mix for closest year 2013

Woodstoves - No woodburning devices

Energy Use -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	11/7/2008	11/7/2005
tblConstructionPhase	PhaseStartDate	8/23/2008	8/23/2005
tblEnergyUse	T24E	1,243.06	1,243.06
tblEnergyUse	T24NG	28,148.14	28,148.14
tblFireplaces	NumberGas	109.45	199.00
tblFireplaces	NumberNoFireplace	89.55	0.00
tblLandUse	LotAcreage	64.61	50.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	WorkerTripNumber	14.00	0.00
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	50.00	0.00
tblWoodstoves	NumberNoncatalytic	50.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2005											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
2005											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	159.1559	159.1559	6.8700e-003	2.8700e-003	160.1840
Energy											0.0000	822.6859	822.6859	0.0278	0.0110	826.6436
Mobile											0.0000	3,755.3190	3,755.3190	0.9634	0.0000	3,779.4032
Waste											41.5807	0.0000	41.5807	2.4574	0.0000	103.0144

Water											4.1134	28.7322	32.8456	0.4238	0.0102	46.4931
Total											**45.6941**	**4,765.8931**	**4,811.5871**	**3.8791**	**0.0241**	**4,915.7383**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	159.1559	159.1559	6.8700e-003	2.8700e-003	160.1840
Energy											0.0000	822.6859	822.6859	0.0278	0.0110	826.6436
Mobile											0.0000	3,527.9746	3,527.9746	0.9463	0.0000	3,551.6326
Waste											41.5807	0.0000	41.5807	2.4574	0.0000	103.0144
Water											4.1134	28.7322	32.8456	0.4238	0.0102	46.4931
Total											**45.6941**	**4,538.5487**	**4,584.2427**	**3.8621**	**0.0241**	**4,687.9677**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.77**	**4.72**	**0.44**	**0.00**	**4.63**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	8/23/2005	11/7/2005	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 725,355; Residential Outdoor: 241,785; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	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
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling												0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor												0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker												0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total												**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	3,527.9746	3,527.9746	0.9463	0.0000	3,551.6326
Unmitigated											0.0000	3,755.3190	3,755.3190	0.9634	0.0000	3,779.4032

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	1,878.56	1,898.46	1701.45	5,437,764	5,062,558
Total	1,878.56	1,898.46	1,701.45	5,437,764	5,062,558

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	48.40	15.90	35.70	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.415876	0.061183	0.150996	0.176036	0.035163	0.006973	0.031964	0.109874	0.002099	0.001787	0.005269	0.001212	0.001569

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	459.9980	459.9980	0.0208	4.3000e-003	461.8004
Electricity Unmitigated											0.0000	459.9980	459.9980	0.0208	4.3000e-003	461.8004
NaturalGas Mitigated											0.0000	362.6879	362.6879	6.9500e-003	6.6500e-003	364.8432
NaturalGas Unmitigated											0.0000	362.6879	362.6879	6.9500e-003	6.6500e-003	364.8432

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.79652e+006											0.0000	362.6879	362.6879	6.9500e-003	6.6500e-003	364.8432
Total												**0.0000**	**362.6879**	**362.6879**	**6.9500e-003**	**6.6500e-003**	**364.8432**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	6.79652e+006											0.0000	362.6879	362.6879	6.9500e-003	6.6500e-003	364.8432
Total												**0.0000**	**362.6879**	**362.6879**	**6.9500e-003**	**6.6500e-003**	**364.8432**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.58123e+006	459.9980	0.0208	4.3000e-003	461.8004
Total		**459.9980**	**0.0208**	**4.3000e-003**	**461.8004**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.58123e+006	459.9980	0.0208	4.3000e-003	461.8004
Total		**459.9980**	**0.0208**	**4.3000e-003**	**461.8004**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	159.1559	159.1559	6.8700e-003	2.8700e-003	160.1840
Unmitigated											0.0000	159.1559	159.1559	6.8700e-003	2.8700e-003	160.1840

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping											0.0000	2.4136	2.4136	3.8700e-003	0.0000	2.5103
Total											**0.0000**	**159.1559**	**159.1559**	**6.8700e-003**	**2.8700e-003**	**160.1840**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											0.0000	156.7423	156.7423	3.0000e-003	2.8700e-003	157.6738
Landscaping											0.0000	2.4136	2.4136	3.8700e-003	0.0000	2.5103
Total											**0.0000**	**159.1559**	**159.1559**	**6.8700e-003**	**2.8700e-003**	**160.1840**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	32.8456	0.4238	0.0102	46.4931
Unmitigated	32.8456	0.4238	0.0102	46.4931

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	12.9657 / 8.174	32.8456	0.4238	0.0102	46.4931
Total		**32.8456**	**0.4238**	**0.0102**	**46.4931**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Single Family Housing	12.9657 / 8.174	32.8456	0.4238	0.0102	46.4931
Total		**32.8456**	**0.4238**	**0.0102**	**46.4931**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	41.5807	2.4574	0.0000	103.0144
Unmitigated	41.5807	2.4574	0.0000	103.0144

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	204.84	41.5807	2.4574	0.0000	103.0144
Total		**41.5807**	**2.4574**	**0.0000**	**103.0144**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	204.84	41.5807	2.4574	0.0000	103.0144
Total		**41.5807**	**2.4574**	**0.0000**	**103.0144**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Stantec Consulting Services Inc.
7502 North Colonial Avenue Suite 101 , Fresno CA 93711-5862

August 14, 2019
File: 185704562

Attention: Drew Phelps
1396 West Herndon Avenue, Suite 101
Fresno, CA 93711

Dear Mr. Phelps,

Reference: Update to Air Quality and Greenhouse Gas Report
Tracts 6239 and 6264

The Air Quality and Greenhouse Gas Impact Analysis Report prepared for Tracts 6239 and 6264 found that the proposed project would have less than significant impacts with respect to all Appendix G CEQA Guidelines Checklist Questions for air quality and greenhouse gases. The summary of analysis results is provided below:

SUMMARY OF ANALYSIS RESULTS

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

Impact AIR-2: The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. **Less Than Significant Impact.**

Impact AIR-3: The Project would not expose sensitive receptors to substantial pollutant concentrations. **Less Than Significant impact.**

Impact AIR-4: The Project would not result in other emissions (such as those leading to odors) affecting a substantial number of people. **Less Than Significant Impact.**

Impact GHG-1: The Project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less Than Significant Impact.**

Impact GHG-2: The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less Than Significant Impact.**

Since completion of the Air Quality and Greenhouse Gas Impact Analysis Report there has been a project modification that will add eight additional housing units (lots) to Tract 6239 totaling 2.39 acres. The increase to the project represents an approximately five percent increase. The air quality and greenhouse gas emissions would increase proportionally. As shown in Table 1, the proposed project's construction

emissions would not exceed San Joaquin Valley Air Pollution Control District thresholds regardless of which phase the eight additional units are developed.

Table 1 Summary of Construction-Generated Emissions of Criteria Air Pollutants

Year	Emissions (Tons/Year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
2019 – Project East – Tract 6239	0.21	1.98	1.46	<0.01	0.34	0.21
Subtotal with additional 8 units	**0.22**	**2.08**	**1.53**	**<0.01**	**0.36**	**0.22**
2020 – Project East Tract 6239	1.33	5.59	5.32	<0.01	0.75	0.51
2020 – Project West – Tract 6264	0.36	2.113	1.9076	<0.01	0.20	0.16
Subtotal for 2020	1.69	7.70	7.23	0.01	0.95	0.67
Subtotal with additional 8 units	**1.77**	**8.09**	**7.59**	**0.01**	**0.99**	**0.70**
2021 – Project East Tract 6239	0.71	0.16	0.1927	<0.01	0.01	<0.01
2021 – Project West – Tract 6264	0.15	<0.01	.00947	<0.01	<0.01	<0.01
Subtotal for 2021	0.86	0.17	0.20217	<0.01	0.01	<0.01
Subtotal with additional 8 units	**0.90**	**0.18**	**0.21**	**<0.01**	**0.011**	**<0.01**
Significance Thresholds	10	10	100	27	15	15
Any Year Exceed Significance Thresholds?	No	No	No	No	No	No

Reference: **Update to Air Quality and Greenhouse Gas ReportTracts 6239 and 6264**

As shown in Table 2, operational emissions would not exceed the Air District's significance threshold with the addition of eight additional units.

Table 2 Summary of Operational Emissions of Criteria Air Pollutants

Source	Emissions (tons/year)					
	ROG	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Area	1.79	0.15	1.54	<0.01	0.02	0.02
Energy	0.03	0.24	0.10	<0.01	0.02	0.02
Mobile	0.64	2.33	7.24	0.02	2.06	0.56
2021 Total	**2.46**	**2.72**	**8.88**	**0.02**	**2.09**	**0.60**
Total with additional 8 units	**2.58**	**2.86**	**9.32**	**0.021**	**2.19**	**0.63**
Significance Thresholds	10	10	100	27	15	15
Exceed Significance Thresholds?	No	No	No	No	No	No

The addition of the eight additional units would not cause a localized impact as shown in Table 3 below.

Reference: **Update to Air Quality and Greenhouse Gas ReportTracts 6239 and 6264**

Table 3 Localized Concentrations of PM_{10}, $PM_{2.5}$, CO, and NO_2 for Construction and Operation

Source	Emissions (pounds per day)			
	NOx	**CO**	**PM_{10}**	**$PM_{2.5}$**
2019 Construction[1]	58.24	52.38	20.60	12.17
Subtotal with additional 8 units	61.15	54.99	21.63	12.77
2020 – Project East Tract 6239 (Phase 1)[1]	53.09	51.53	3.55	3.15
2020 – Project East Tract 6239 (Phase 2)[1]	53.49	51.87	20.41	11.99
2020 – Project West – Tract 6264[1]	42.47	28.58	20.41	11.99
Subtotal 2020	95.96	80.45	40.82	23.98
Subtotal with additional 8 units	**100.76**	**84.47**	**42.86**	**25.18**
2021 – Project East Tract 6239[1]	12.96	15.03	0.80	0.66
2021 – Project West – Tract 6264[1]	1.53	1.89	0.12	0.10
Subtotal 2021	14.49	16.92	0.92	0.76
Subtotal with additional 8 units	**15.21**	**17.76**	**0.96**	**0.79**
Operation[1]	18.26	59.46	12.35	3.71
Total with additional 8 units	**19.17**	**62.43**	**12.96**	**3.89**
Significance Thresholds	100	100	100	100
Exceed Significance Thresholds?	No	No	No	No

Notes:

1. Maximum daily construction and operational emissions reflect emissions reported for Winter as it has higher emissions than summer.

Source: Stantec Consulting Services Inc., CalEEMod 2016.3.2

Reference: **Update to Air Quality and Greenhouse Gas ReportTracts 6239 and 6264**

Construction greenhouse gas emissions would increase slightly as shown in Table 4 below.

Table 4 Summary of Construction-Generated Greenhouse Gas Emissions

Construction Activity	$MTCO_{2e}$
2019	212
2020	994
2021	29
Total	1,235
Total with additional 8 units	**1,296**
Amortized over 30 years[1]	**43**
Notes: 1. GHG emissions are amortized over the 30-year life of the proposed project Source: Stantec Consulting Services Inc., CalEEMod 2016.3.2	

As shown in Table 5 and Table 6, the proposed project would still achieve the required greenhouse gas reductions.

Table 5 2020 Project Operational Greenhouse Gases

Source	Emissions ($MTCO_{2e}$ per year)	
	Business as Usual	**2020 (with Regulation and Design Features)**
Subtotal	4,688	2,449
Subtotal with additional 8 units	**4,922**	**2,571**
Amortized Construction Emissions	-	43
Total	**4,922**	**2,614**
Reduction		**47%**
Significance Threshold		29%
Are emissions significant?		No
Notes: $MTCO_{2e}$ = metric tons of carbon dioxide equivalents		

Reference: **Update to Air Quality and Greenhouse Gas ReportTracts 6239 and 6264**

Table 6 2030 Project Operational Greenhouse Gases

Source	Emissions ($MTCO_2e$ per year)	
	Business as Usual	**2030 (with Regulation and Design Features)**
Subtotal	4,688	1,932
Subtotal with additional 8 units	**4,922**	**2,029**
Amortized Construction Emissions	-	43
Total	**4,922**	**2,072**
Reduction		**57.9%**
Significance Threshold		29%
Are emissions significant?		No

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents

In summary, the impact analysis results from the original Air Quality and Greenhouse Gas Report remain valid.

Regards,

Stantec Consulting Services Inc.

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