GLOBAL CLIMATE CHANGE

Hoskings Ranch TM 5312 RPL2
County of San Diego, CA

Lead Agency:

County of San Diego
Department of Planning and Land Use
Contact: Robert Hingtgen
5201 Ruffin Road, Suite B
San Diego, CA 92123
858-694-3712

Prepared By:

Jeremy Louden
Ldn Consulting, Inc.
42428 Chisolm Trail
Murrieta, CA 92562
760-473-1253

Project For:

Ms. Lettie Flower
Genesee Properties
3550 General Atomics Ct.
San Diego, CA 92121

October 22, 2015

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LIST OF ACRONYMS

Assembly Bill 32 (AB32)

Business as Usual (BAU)

California Air Pollution Control Officers Association's (CAPCOA)

California Air Resource Board (CARB)

California Climate Action Registry General Reporting Protocol Version 3.1 (CCARGRPV3.1)

California Environmental Quality Act (CEQA)

Carbon Dioxide (CO2)

Cubic Yards (CY)

Environmental Protection Agency (EPA)

Green House Gas (GHG)

International Residential Code (IRC)

Low Carbon Fuel Standard (LCFS)

Methane (CH4)

Nitrous Oxide (N2O)

San Diego Air Basin (SDAB)

San Diego Air Pollution Control District (SDAPCD)

South Coast Air Quality Management District (SCAQMD)

Senate Bill 97 (SB97)

Vehicle Miles Traveled (VMT)

EXECUTIVE SUMMARY

This analysis has been completed in order to quantify Greenhouse Gas (GHG) emissions from the project and was prepared according to guidelines established within the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32), Senate Bill 97 (SB97), California Environmental Quality Act (CEQA) and the County of San Diego's Guidelines. Greenhouse Gasses analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify greenhouse gas calculations, both CH_4 and N_2O are converted to equivalent amounts of CO_2 and are identified as CO_2e.

The Project proposes the subdivision of 1,416.5 acres into 24 lots ranging in size from 40 to 196 acres with a maximum of 5 acres of graded space per lot. Primary use of the lots will be mixed agricultural with a maximum of ~~80~~ 60 heads of cattle for the entire site, which is a reduction from the currently sustainable use allowing ~~maximum of~~ 140 heads of cattle. Livestock will be restricted from protected habitat areas by a 200-foot buffer with fencing along that boundary.

A Conservation Grazing Management Plan (CGMP) will remain in effect as long as grazing continues in open space and will be reviewed annually. Hoskings Ranch will not be phased since the proponent does not plan to construct homes as part of the project. If homes are built on the site, they will be developed on an individual lot basis. Owners will be responsible for pad grading, home construction, and associated water well and septic system facilities. For purposes of this report, it is conservatively assumed that the site will be constructed with 24 rural estates which would be assumed to be fully constructed as part of this GHG analysis. All construction activities (i.e. grading, trenching, paving and construction) for the proposed Project are anticipated to start in 2016 with construction and full Buildout sometime in mid to late 2017.

During construction of the project, it ~~i~~is expected that approximately 510.63 Metric Tons (MT) of GHGs will be generated. Given this, the project would generate 25.53 MT per year over the assumed 20 year minimum life of the project.

The proposed project will emit approximately 639.68 MT~~etric Tons~~ of CO_2e during a typical operational year and combining the amortized construction emissions, the construction/operation emissions would be 665.22 MT. The proposed project would also ~~reduce~~ sequestered GHG emissions by 51.72 MTs each year by reducing vegetation through the residential building footprints. Given this the total amount of GHGs the project would produce would be 742.47 MT each year ~~The proposed project will emit approximately 642.96 Metric Tons of CO_2e during a typical operational year~~ which would not exceed the County's Screening thresholds of 900 Metric Tons per Year. Therefore, the proposed project would not generate~~s~~ significant cumulative GHG emissions and would not be considered an impact under CEQA.

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~~The proposed project will emit GHGs directly through the burning of carbon-based fuels such as gasoline and natural gas as well as indirectly through usage of electricity, water and from the anaerobic bacterial breakdown of organic solid waste. Based on GHG modeling using CalEEMod, the project would generate 617.43 Metric Tons CO_2e each year excluding construction. Adding the 25.53 Metric Tons CO_2e from construction, the project would generate 642.96 Metric Tons CO_2e each year.~~

~~Given this, all projected emissions would be less than the County's acceptable screening threshold of 900 Metric Tons per year. Therefore, no County or CEQA impacts would be expected from GHGs related to this project.~~

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Green House Gas Assessment (GHG) is to show conformance to the California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB32) and Senate Bill 97 (SB97). AB32 requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels and SB97 a "companion" bill directed amendments to the California Environmental Quality Act (CEQA) statute to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. Should impacts be determined, the intent of this study would be to recommend suitable design measures to bring the project to a level considered less than significant.

1.2 Project Location

The proposed project site is located on approximately 1,416.5-acres in the unincorporated area of east-central San Diego County, approximately one mile west of the unincorporated town of Julian. State Route 78 (SR 78) forms the most northern boundary of the site, with Pine Hills Road to the east providing the main access route to the project site. The project site is an undeveloped rural property known as Hoskings Ranch, which is currently used for agricultural uses including cattle grazing/breeding. The project site generally has between 60 and 140 cattle onsite any given year though for purposes of this analysis, it was assumed the site only contains 60 cattle. There are no residential structures on the site.

Uses surrounding the property consist of agriculture, open space, open land, and estate residential lots. The elevation of the project site ranges from 3,100 feet above mean sea level (AMSL) to 4,200 feet AMSL. A general project vicinity map is shown in Figure 1-A on Page 3 of this report.

1.3 Project Description

The proposed project consists of the subdivision of the approximately 1,416.5-acre Hoskings Ranch into 24 parcels ranging in size from 40 to 196 acres with a maximum of 5 acres to be graded per parcel. Each parcel would accommodate active agriculture and a single family home. Open space preservation for biological purposes is proposed throughout the site as well as grazing over portions of the open space. The proposed project would be served by groundwater and individual septic systems.

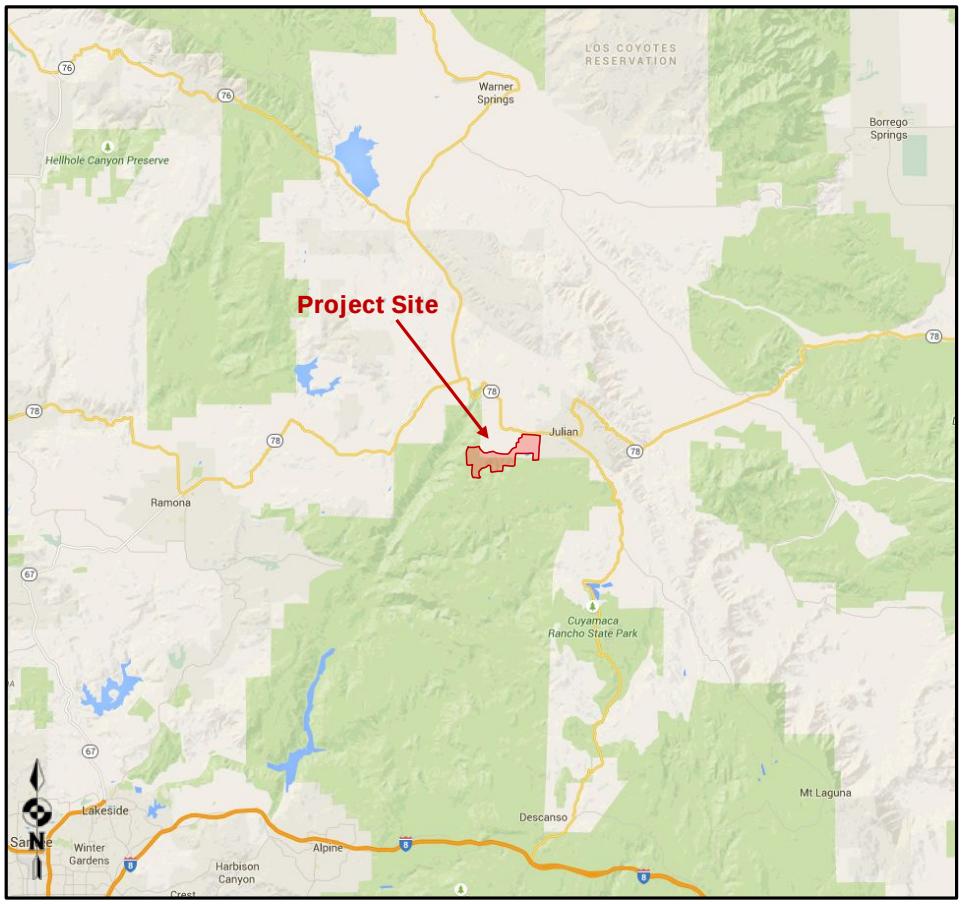
Primary access to the proposed project is from Pine Hills Road (a two lane public road) on the site's eastern boundary, with secondary access off Daley Flat Road (a two lane private road)

to the northwest. The project site configuration and layout is provided in Figure 1-B on Page 4 of this report.

The project grading would not exceed 120 acres or roughly 5 acres per lot and would include all roads. The proponent does not plan to construct homes as part of the project, however this analysis assumes all homes will be completed during the standard construction period proposed later in this report.

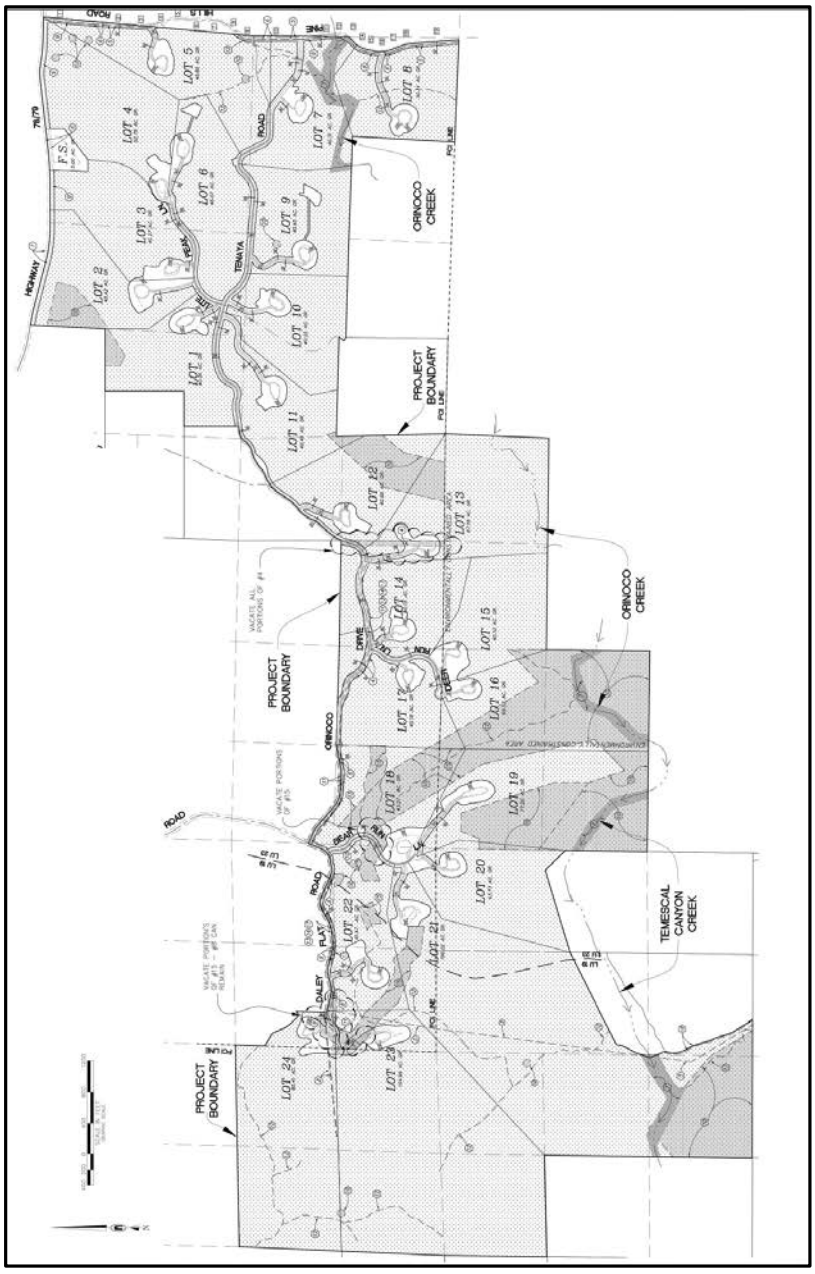
Access in support of grazing will be designated and will consist of unimproved roads using existing traveled ways on the site. It is anticipated that the four existing ponds will continue to be used. The number of livestock to be grazed on the project site will decrease in intensity from an allowed 140 heads of cattle to a reduced number limited to a maximum of ~~80~~ 60 heads of cattle.

Figure 1-A: Project Vicinity Map



Source: (Google, 2015)

Figure 1-B: Proposed Project Site Plan



Source: (TRS Consultants, 2013)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding Greenhouse Gasses

Greenhouse gases such as water vapor and carbon dioxide are abundant in the earth's atmosphere. These gases are called "Greenhouse Gases" because they absorb and emit thermal infrared radiation which acts like an insulator to the planet. Without these gases, the earth's ambient temperature would either be extremely hot during the day or blistering cold at night. However, because these gases can both absorb and emit heat, the earth's temperature does not sway too far in either direction.

Over the years as human activities require the use of burning fossil fuels stored carbon is released into the air in the form of CO_2 and to a much lesser extent CO. Additionally, over the years scientist have measured this rise in Carbon Dioxide and fear that it may be heating the planet too. Additionally, it is thought that other greenhouse gases such as Methane and Nitrous Oxide are to blame.

Greenhouse Gasses of concern as analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simply greenhouse gas calculations, both CH_4 and N_2O can be converted to an equivalent amount of CO_2 or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). The U.S. Environmental Protection Agency publishes GWPs for various GHGs and reports that the GWP for CH_4 and N_2O is 21 and 310, respectively.

2.2 Existing Setting

The Project site lies in the east-central portion of San Diego County, approximately one mile west of the unincorporated town of Julian and just south of the State Route 78. The location of the project is an undeveloped rural site, which is currently used for cattle grazing/breeding. There are no residences on the site, and the only structures present are a cattle loading chute and corral located near the northeast corner.

The Hoskings Ranch project site is predominantly composed of rocks of the Southern California Batholith with elevations ranging from approximately 3,100 to 4,200 feet AMSL with gradients ranging from nearly level pasture areas along the northeastern portion of the property to steep cliffs along the southwestern side of the property. Land uses directly surrounding the project are agriculture, open space, open land, and estate residential lots.

The site has historically been used primarily for cattle grazing and breeding. Currently, the site is used to graze and breed ~~up~~ between 60 and ~~to~~ 140 heads of cattle onsite on any given

year. This land use is assumed to be a part of existing baseline inventories and would therefore not be considered within the proposed project since operations for existing uses pre-date any GHG laws.

2.3 Climate and Meteorology

Julian's climate is generally temperate, however, due to its elevation, highs and lows are a little more extreme than in the coastal regions of San Diego County. Four seasonal changes occur in Julian and they are more distinct than in other areas of the County because of the variation in temperature. The warmest months of summer are usually July and August with average highs around 86 degrees Fahrenheit (°F) and average lows around 59°F. Temperatures steadily drop through the fall months, leading to winters with average highs in December and January of 52°F, and average lows of 35°F. Average annual precipitation in the Julian area is approximately 24 inches and average snowfall is about 24 inches per year (TRS Consultants, January 2013).

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Regulatory Standards (Assembly Bill 32)

The Global Warming Solutions Act of 2006 (AB 32), requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels or from about 545 metric tons as projected as a 2020 baseline to 427 metric tons which would be required to meet the goal. Significance thresholds have not been adopted but are currently being discussed. AB 32 is specific as to when thresholds shall be defined. The pertinent sections are referenced within Part 4 of AB 32 Titled *Greenhouse Gas Emissions Reductions* are shown below:

Section 38560.5 (b) states:

On or before January 1, 2010, the state board shall adopt regulations to implement the measures identified on the list published pursuant to subdivision (a).

Section 38562 states:

(A) On or before January 1, 2011, the state board shall adopt greenhouse gas emission limits and emission reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit, to become operative beginning on January 1, 2012.

(B) In adopting regulations pursuant to this section and Part 5 (commencing with Section (38570), to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

1. *Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions.*
2. *Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.*
3. *Ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions.*
4. *Ensure that activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.*
5. *Consider cost-effectiveness of these regulations.*
6. *Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health.*
7. *Minimize the administrative burden of implementing and complying with these regulations.*

8. Minimize leakage.
9. Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases.

(C) In furtherance of achieving the statewide greenhouse gas emissions limit, by January 1, 2011, the state board may adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that the state board determines will achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, in the aggregate, from those sources or categories of sources.

(D) Any regulation adopted by the state board pursuant to this part or Part 5 (commencing with Section 38570) shall ensure all of the following:

1. The greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable by the state board.
2. For regulations pursuant to Part 5 (commencing with Section 38570), the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.
3. If applicable, the greenhouse gas emission reduction occurs over the same time period and is equivalent in amount to any direct emission reduction required pursuant to this division.

3.2 Regulatory Standards (Assembly Bill 341)

This bill makes a legislative declaration that it is the policy goal of the state that not less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020, and would require the Department of Resources Recycling and Recovery, by January 1, 2014, to provide a report to the Legislature that provides strategies to achieve that policy goal and also includes other specified information and recommendations.

This bill will increase diversion requirements by an additional 25% over Business as Usual as was defined under AB 939 and SB 1322 which were signed into law as the Integrated Waste Management Act of 1989, which as of the year 2000 only required 50 percent diversion.

3.3 Regulatory Standards (Senate Bill 97)

SB 97 requires the Office of Planning and Research to prepare and transmit to the Resources Agency, guidelines and directed amendments to the CEQA statute specifically for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions.

3.4 Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (GPO, 2007) is an energy policy law adopted by congress which consists mainly of provisions designed to increase energy efficiency and the availability of renewable energy. The law will require automakers to boost fleet wide gas mileage averages from the current 25 mpg to 35 mpg by 2020, which will reduce energy needs by 28.5%. This fleet wide average is known as the Corporate Average Fuel Economy (CAFE) standard.

3.5 AB 1493 (Pavley Standards)

AB 1493 regulations are similar to CAFE Standards but are expected to produce a GHG benefit greater than that of the CAFE Standards doubling the amount of GHGs saved under CAFE. The Pavley rules (also referred to as California Standards) are designed to regulate GHG emissions while the federal standards are aimed at reducing the nation's fuel consumption.

Under Pavley I, starting with vehicles produced in 2009, manufacturers have the flexibility in meeting California standards through a combination of reducing tailpipe emissions of CO_2, N_2O, CH_4, and hydrofluorocarbons from vehicle air conditioning systems. Furthermore, the California standards are estimated to increase fuel efficiency to 35.7 miles per gallon by 2016, and under more stringent emission limits (Pavley II), would increase efficiency to 42.5 miles per gallon by 2020 (California Air Resourrce Board, 2013).

3.6 Advanced Clean Car Program

Pavley II along with other Low-Emission Vehicle (LEV) regulations including new approaches to increase zero emission vehicles and hybrids have since been combined into a single program termed Advanced Clean Cars (California Air Resource Board, 2014). The new effort uses a number of emission control programs to reduce smog, soot and global warming and would be in effect from 2017 to 2015. This program is estimated to reduce GHGs by 4.0 million metric tons or roughly 2.4% beyond that of Pavley I (California Air Resource Board, 2011).

3.7 Vehicle Efficiency Measures

Vehicle efficiency measures within the Scoping Plan include Low Friction Oil, Tire Pressure Regulation, Tire Tread Program, and Solar Reflective Automotive Paint and specialized window glazing to reduce GHGs by 4.5 MMTCO2e in 2020. To date, however, some of these reduction measures are still under review with the exception of the Tire Pressure Regulations which are estimated to remove 0.6 MMTCO2e.

3.8 Executive Order S-01-07

Executive Order S-01-07 was signed by Governor Arnold Schwarzenegger in January 2007 and is effectively known as the Low Carbon Fuel Standard (LCFS). The Executive Order seeks to reduce the carbon intensity of California's passenger vehicle fuels by at least 10% by 2020. The LCFS will require fuel providers in California to ensure that the mix of fuel they sell into the California market meet, on average, a declining standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold.

3.9 Executive Order S-3-05

Executive Order S-3-05 was signed by Governor Arnold Schwarzenegger in June 2005. That the following greenhouse gas emission reduction targets are hereby established for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

3.10 Executive Order B-30-15

Executive Order B-30-15 was signed by Governor Edmund Brown Jr. in April 2015. The executive order seeks to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 which would help the state meet targets of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050 covered under EO S-3-05 (Office of Governor Edmund G. Brown Jr., 2015).

3.11 Executive Order S-14-08

Executive Order S-14-08 was signed by Governor Arnold Schwarzenegger and is effectively known as the Renewable Portfolio Standard (RPS). According to S-14-08, the RPS will require that all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020. State government agencies are hereby directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines.

It should be noted that Governor Jerry Brown is committed to increasing this regulation such that the renewable portfolio in 2030 would be at least 50%. This commitment was entered into agreement with multiple international states signed on May 19, 2015 by California. (Subnational Global Climate Leadership Memorandum of Understanding, 2015). Though this is not law, for purposes of speculative GHG forecasting into 2030 and 2050, it's reasonable to assume that it will be a requirement.

3.12 Title 24 Standards

The California Energy Code, or Title 24, Part 6 of the California Code of Regulations, also titled The Energy Efficiency Standards for Residential and Nonresidential Buildings, were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods (Wikipedia).

The Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards for some of the following reasons and would reduce both Natural Gas and Electrical demand:

1. *To provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy.*
2. *To respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020.*
3. *To pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.*
4. *To act on the findings of California's Integrated Energy Policy Report (IEPR) that Standards are the most cost effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing greenhouse gas emissions.*
5. *To meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.*
6. *To meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.*

Title 24 2008 has been found reduce electrical emissions by 22.7% when comparing prototype buildings built to the minimum standards in 2005 and then comparing the prototypes within duplicate models built to standards in 2008. (Architectural Energy Corporation for California Energy Commission, November 7, 2007)

Title 24 2010 incorporated Cal Green standards and added a voluntary tiered approach which compared efficiency over Title 24 2008. (California Building Standards Commission, June 2010). The latest standards are have been updated (Title 24 2013) and are effective as of July 1, 2014. Looking at the entire construction outlook for low-rise single-family detached homes, electricity use is reduced by 36.4 percent and natural gas consumption is reduced by 6.5 percent (Architectural Energy Corporation (AEC), 2013). Nonresidential Newly Constructed

Buildings would have a reduction from the 2008 Standards of 22 percent for electricity and 17 percent for natural gas.

3.13 California Environmental Quality Act (CEQA) Significance Thresholds

As directed by SB 97, the Natural Resources Agency adopted Amendments to Title 14 Division 6 Chapter 3 CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010. The pertinent sections are shown below:

Section 15064.4 - Determining the Significance of Impacts from Greenhouse Gas

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

1. *Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or*
2. *Rely on a qualitative analysis or performance-based standards.*

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

1. *The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;*
2. *Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*
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 requirements must be adopted by the relevant public agency through a public review process and must 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.*

General Questions recommended within the environmental checklist are:

(a) Will the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

(b) Will the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

3.14 Scoping Plan Measures

In response to AB 32, California Air Resource Board (ARB) developed the Climate Change Scoping Plan. In that plan, ARB developed GHG emission reduction strategies which expanded energy efficiency programs, increased utility renewable energy requirements, developed clean car standards and LCFS, developed the cap-and-trade program, and identified adopted discretionary measures to assist the state in meeting the 2020 limits established by AB 32.

In May 2014, the ARB adopted the first update to the original Scoping Plan which was necessary to establish long-term GHG policies to make deep GHG emission reductions to achieve an 80% reduction below 1990 levels by 2050. The update includes key recommendations for six key economic sectors (energy, transportation, agriculture, water, waste management, and natural and working lands) as well as short-lived climate pollutants, green buildings, and the Cap-and-Trade Program. The findings largely affect regulatory measures that will indirectly reduce GHG emissions and generate a need to update local policies.

3.15 County of San Diego Thresholds of Significance

In January 2015, the County developed the latest Guidelines for Determining Significance (County of San Diego Planning and Development Services, January 21, 2015). In that document, the County suggests using screening thresholds published by CAPCOA for determining the need for additional analyses and mitigation for GHG-related impacts under CEQA which suggest projects producing less than 900 metric tons would be considered less than significant (California Air Pollution Control Officers Association, 2008).

The San Diego County Planning and Development Services (PDS) has indicated that projects that emit more than 900 MT of GHGs would be required to conduct a GHG analysis and show a 16% reduction in GHG emissions through mitigation. The draft guidelines have been developed from the requirements of AB 32 and address potential cumulative impacts that a project's GHG emissions could have on GCC.

In addition to calculations for 2020, the County also recommends conducting an emissions inventory for the horizon years 2030 and 2050, consistent with Executive Orders B-30-15 and S-3-05, and demonstrate the progress the project would make towards achieving the GHG reduction goals for these years. ~~3.1 Regulatory Standards (Assembly Bill 32)~~

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~~The Global Warming Solutions Act of 2006 (AB 32), requires that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels or roughly a 16% reduction. Significance thresholds have not been adopted but are currently being discussed. AB 32 is specific as to~~

when thresholds shall be defined. The pertinent sections are referenced within Part 4 of AB 32 Titled *Greenhouse Gas Emissions Reductions* are shown below:

Section 38560.5 (b) states:

On or before January 1, 2010, the state board shall adopt regulations to implement the measures identified on the list published pursuant to subdivision (a).

Section 38562 states:

(A) On or before January 1, 2011, the state board shall adopt greenhouse gas emission limits and emission reduction measures by regulation to achieve the maximum technologically feasible and cost effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit, to become operative beginning on January 1, 2012.

(B) In adopting regulations pursuant to this section and Part 5 (commencing with Section (38570), to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the state board shall do all of the following:

1. Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to California, and encourages early action to reduce greenhouse gas emissions.
2. Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.
3. Ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions.
4. Ensure that activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.
5. Consider cost effectiveness of these regulations.
6. Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health.
7. Minimize the administrative burden of implementing and complying with these regulations.
8. Minimize leakage.
9. Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases.

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~~*(C) In furtherance of achieving the statewide greenhouse gas emissions limit, by January 1, 2011, the state board may adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that the state board determines will achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, in the aggregate, from those sources or categories of sources.*~~

~~*(D) Any regulation adopted by the state board pursuant to this part or Part 5 (commencing with Section 38570) shall ensure all of the following:*~~

~~*1. The greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable by the state board.*~~

~~*2. For regulations pursuant to Part 5 (commencing with Section 38570), the reduction is in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur.*~~

~~*3. If applicable, the greenhouse gas emission reduction occurs over the same time period and is equivalent in amount to any direct emission reduction required pursuant to this division.*~~

~~3.2 Regulatory Standards (Assembly Bill 341)~~

~~This bill makes a legislative declaration that it is the policy goal of the state that no less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020, and would require CalRecycle, by January 1, 2014, to provide a report to the Legislature that provides strategies to achieve that policy goal and also includes other specified information and recommendations.~~

~~This bill will increase diversion requirements by an additional 25% over Business as Usual as was defined under AB 939 and SB 1322 which were signed into law as the Integrated Waste Management Act of 1989, which as of the year 2000 only required 50 percent diversion.~~

~~3.3 Regulatory Standards (Senate Bill 97)~~

~~SB 97 requires the Office of Planning and Research to prepare and transmit to the Resources Agency, guidelines and directed amendments to the CEQA statute specifically for the mitigation of greenhouse gas~~GHG ~~emissions or the effects of greenhouse gas~~GHG ~~emissions.~~

~~3.4 Energy Independence and Security Act of 2007~~

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~~The Energy Independence and Security Act of 2007 (P.L. 110-140, H.R. 6) is an energy policy law adopted by congress which consists mainly of provisions designed to increase energy efficiency and the availability of renewable energy. The law will require automakers to boost fleet wide gas mileage averages from the current 25 mpg to 35 mpg by 2020. The rule was updated in 2010 which required fleet wide fuel economy standard to be set at 34.1 miles per gallon by 2016 and affect cars built in 2012 through 2016. Also, in October 2012, the rules were further changed to 54.5 mpg for cars and light-duty trucks by Model Year 2025. This fleet wide average is known as the Corporate Average Fuel Economy (CAFE) standard.~~

~~CAFE Standards are similar to requirements developed within AB 1493 regulations however would not reduce greenhouse gas levels as quickly. The United States Environmental Protection Agency (U.S. EPA) denied the state of California from implementing AB 1493.~~

~~3.5 AB 1493 (Pavley Standards)~~

~~AB 1493 regulations are similar to CAFE Standards however are expected to produce a Greenhouse Gas Benefit greater to that of the CAFE Standard and would be expected to double the amount of GHGs saved under CAFE. The Pavley rules or also referred to as California Standards are designed to regulate GHG emissions while the federal standards are aimed at reducing the nation's fuel consumption.~~

~~Under Pavley starting with vehicles produced in 2009, manufactures have the flexibility in meeting California standards through a combination of reducing tailpipe emissions of Carbon Dioxide, Nitrous Oxide, Methane and hydrofluorocarbons from vehicle air conditions systems. Furthermore, the California standards are estimated to increase fuel efficiency to 35.7 miles per gallon by 2016 and under more stringent emission limits called originally termed Pavley II would increase efficiency to 42.5 miles per gallon by 2020 (California Air Resource Board, 2013).~~

~~3.6 Advanced Clean Car Program~~

~~Pavley II along with other low-Emission Vehicle (LEV) regulations including new approaches to increase zero emission vehicles and hybrids have since been combined into a single effort program termed Advanced Clean Cars (California Air Resource Board, 2014). The new effort uses a number of emission control programs to control smog, soot and global warming and would be in effect in 2017. This program is estimated to reduce GHGs emissions at least 2.4% beyond that of Pavley I (California Air Resource Board, 2011).~~

~~3.7 Executive Order S-01-07~~

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Executive Order S-01-07 was signed by Governor Arnold Schwarzenegger in January 2007 and is effectively known as the Low Carbon Fuel Standard (LCFS). The executive order seeks to reduce the carbon intensity of California's passenger vehicle fuels by at least 10% by 2020. The LCFS will require fuel providers in California to ensure that the mix of fuel they sell into the California market meet, on average, a declining standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold.

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3.8 Title 24 Standards

The California Energy Code, or Title 24, Part 6 of the California Code of Regulations, also titled The Energy Efficiency Standards for Residential and Nonresidential Buildings, were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods (California Energy Code, 2015)

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The Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards for some of the following reasons and would reduce both Natural Gas and Electrical demand:

1. To provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy.
2. To respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its greenhouse gas emissions to 1990 levels by 2020.
3. To pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.
4. To act on the findings of California's Integrated Energy Policy Report (IEPR) that Standards are the most cost effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing greenhouse gas emissions.
5. To meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.
6. To meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.

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Title 24 2008 has been found reduce electrical emissions by 22.7% when comparing prototype buildings built to the minimum standards in 2005 and then comparing the prototypes within duplicate models built to standards in 2008. (Architectural Energy Corporation for California Energy Commission, November 7, 2007)

~~Title 24 2010 incorporated Cal Green standards and added a voluntary tiered approach which compared efficiency over Title 24 2008. (California Building Standards Commission, June 2010). The latest standards are Title 24 2013 and are effective as of July 1, 2014. The Energy Commission's 2013 Building Energy Efficiency Standards are 25 percent more efficient than previous standards for residential construction and 30 percent better for nonresidential construction. (California Energy Commission, 2012)~~

~~3.9 California Environmental Quality Act (CEQA) Significance Thresholds~~

~~As directed by SB 97, the Natural Resources Agency adopted Amendments to Title 14 Division 6 Chapter 3 CEQA Guidelines for greenhouse gas emissions on December 30, 2009. On February 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010. The pertinent sections are shown below:~~

~~*Section 15064.4 - Determining the Significance of Impacts from Greenhouse Gas*~~

~~*(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:*~~

~~*1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or*~~

~~*2. Rely on a qualitative analysis or performance based standards.*~~

~~*(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:*~~

~~*1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;*~~

~~*2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*~~

~~*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 requirements must be adopted by the relevant public agency through a public review process and must 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*~~

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~~*notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*~~

~~*General Questions recommended within the environmental checklist are:*~~

~~*(a)* Will the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?~~

~~*(b)* Will the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?~~

~~3.10 Scoping Plan Measures~~

~~In response to AB 32, the California Air Resource Board (ARB) developed the Climate Change Scoping Plan. In that plan, the Board developed GHG emission reduction strategies which expanded energy efficiency programs, increased utility renewable energy requirements, developed clean car and Low Carbon Fuel Standards (LCFS), developed the cap and trade program and identified adopted discretionary measures to assist the state in meeting the 2020 limits established by AB 32.~~

~~In May 2014, the ARB adopted the first update to the original scoping plan which was necessary to establish long term GHG policies to make deep GHG emission reductions to work towards achievement of an 80% reduction below 1990 levels by 2050. The update includes key recommendations for six key economic sectors (energy, transportation, agriculture, water, waste management, and natural and working lands) as well as short lived climate pollutants, green buildings, and the Cap and Trade Program. The findings largely affect regulatory measures that will indirectly reduce GHG emissions and generate a need to update local policies.~~

~~3.11 County of San Diego Thresholds of Significance~~

~~The California Air Pollution Control Officers Association (CAPCOA) published a white paper, which suggested a screening criterion of 900 metric tons per year of GHGs. County Guidelines recommend the use of this screening level and require all projects producing more than 900 metric tons per year of GHGs produce an inventory of project gases GHG emissions and demonstrate reasonable mitigation measures necessary to reduce GHG's to an acceptable level. For all pProjects generating expected to generate an excess of 900 MT would be required to show a 16 percent reduction through the use of acceptable mitigation measures (County of San Diego Planning and Development Services (PDS), 2015).~~

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4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

The Project construction would be expected to take approximately 12 months to complete. The grading operations are expected to take up to six months. After grading is complete trenching and paving operations would take an additional two months and then the residential buildings will be built out over the following 6-months. The entire build out of the Project would be expected no sooner than mid- to late 2017.

Table 4.1 below shows the expected timeframes for the construction processes for all the project infrastructure, facilities, improvements and residential structures at the proposed project location. It should be noted that this analysis assumes the construction of the residential structures though the project proponent would only be selling off individual lots per market demands. This analysis assumes worst case scenario. Furthermore, it's assumed that each trip would ~~originate~~ follow a rural setting as modeled within CalEEMod.~~.30 miles from the site.~~ .

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Completion	Quantity
Mass Site Grading	6/2/2016	12/15/2016	
Graders			1
Off-Highway Trucks			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			1
Trenching	1/1/2017	3/15/2017	
Excavators			2
Other General Industrial Equipment			1
Paving	1/1/2017	3/15/2017	
Pavers			1
Paving Equipment			2
Rollers			2
Building Construction	1/1/2017	6/15/2017	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	1/1/2017	6/15/2017	

This equipment list is based upon equipment inventory within CALEEMOD. The quantity and types are based upon assumptions from Projects of similar size and scope in the County of San Diego.

GHG impacts related to construction ~~will be~~were calculated using the latest CalEEMod 2013.2.2 air quality model which was developed by ENVIRON International Corporation for South Coast Air Quality Management District (SCAQMD). CalEEMod incorporates emission factors from the EMFAC2011 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. Because ~~CO_2~~ GHG emissions from construction only occur at the beginning of a project, emissions will be averaged over a 20-year period.

4.2 Operational Emissions Calculation Methodology

Once construction is completed the proposed project would generate air ~~quality~~ and GHG emissions from daily operations which would include sources such as Area, Energy, Mobile, Solid waste and Water uses, which are calculated within CalEEMod. Area Sources include usage of fireplaces in all units, ~~wood stoves,~~ consumer products, landscaping and architectural coatings as part of regular maintenance. Energy sources would be from uses such as electricity and natural gas. Solid waste generated in the form of trash is also considered as decomposition of organic material breaks down to form GHGs.

Whenever land uses are changed and alterations are made to the landscaping the amount of carbon dioxide that the vegetation can sequester is also changed. The proposed project would be a rural residential development and each lot is assumed to reduce the amount of vegetative environment by ½ acre. The overall change in sequestered CO_2 is the summation of sequestered CO_2 from initial land use type multiplied by area of land for initial land use type subtracted by the summation of sequestered CO_2 from final land use type multiplied by area of land for final land use type. The operational source module with CalEEMod was used for these calculations.

GHGs from water are also indirectly generated through the conveyance of the resource via pumping throughout the state and as necessary for wastewater treatment. Finally the project would also generate air quality emissions and GHG through the use of carbon fuel burning vehicles for transportation. The annual CalEEMod inputs are shown in ***Attachments A*** at the end of this report.

5.0 FINDINGS

5.1 Project Related Construction Emissions

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, we find that grading and construction of the project will produce approximately 510.63 Metric Tons of CO_2e over the construction life of the project. Given the fact that the total emissions will ultimately contribute to yearly emission levels, it is acceptable to ~~average~~ amortize the total construction emission over a 20 year period which would be 25.53 MT per year. A summary of the construction emissions is shown in Table 5.1 below.

Table 5.1: Expected Construction CO_2e Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2016	0.00	237.46	237.46	0.06	0.00	238.81
2017	0.00	270.54	270.54	0.06	0.00	271.82
Total						510.63
Yearly Average Construction Emissions (Metric Tons/year over 20 years)						**25.53**

Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 4.1 above.

5.2 Project Related Operational Emissions/Conclusions

As previously discussed, emissions generated from Area, Energy, Mobile, Solid Waste and Water uses is also calculated within CalEEMod. The program is largely based on default settings which are automatically populated throughout the model based on the imputed land use. The ~~Statewide~~ San Diego project location and the San Diego Gas and Electric averages for utility emissions were utilized for the calculations throughout the model. The calculated unmitigated operational emissions are presented in Table 5.2 on the following page.

The proposed project will emit approximately 665.22~~M~~ MT~~etric Tons~~ of CO_2e during a typical operational year. Additionally, the proposed project would be a rural residential development and through the construction of a residential structure and driveways, each lot is assumed to have a reduction in vegetative environment by ½ acre. This reduction in vegetation will reduce the amount of sequestered CO_2e by 51.72 MTs each year. Given this the total amount of GHGs the project would produce would be 742.47 MT each year ~~The proposed project will emit approximately 642.96 Metric Tons of CO_2e during a typical operational year~~ which would not exceed the ~~CAPCOA~~ County's Screening thresholds of 900 Metric Tons per Year.

Therefore, the proposed project would not generate significant cumulative GHG emissions and would not be considered an impact under CEQA.

Table 5.2: Expected Operational Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Area	56.97 24.79	0.29 10.69	57.26 35.48	0.00 0.02	0.01 0.00	58.83 36.57
Energy	0.00 0.00	91.30 91.30	91.30 91.30	0.00 0.00e	0.00 0.00	91.70 91.70
Mobile	0.00 0.00	463.71 463.71	463.71 463.71	0.02 0.02	0.00 0.00	464.08 464.08
Waste	5.74 5.74	0.00 0.00	5.74 5.74	0.34 0.34	0.00 0.00	12.87 12.87
Water	0.50 0.50	10.23 10.23	10.73 10.73	0.05 0.05	0.00 0.00	12.21 12.21
Total						639.68 **617.43**
Amortized Construction Emissions (Table 5.1 above)						25.53 **25.53**
Total Operations and Construction						665.22 **642.96**
Sequestered Carbon from Land Use Change						51.72
Total GHG Emissions (CO_2e)						742.47

Data is presented in decimal format and may have rounding errors.
Mobile sources are assumed to travel be rural in nature 30 miles each trip to and from the project site at a rate of 12 trips per dwelling unit

6.0 REFERENCES

Architectural Energy Corporation for California Energy Commission. (November 7, 2007). *2008 Update to the California Energy Efficiency Standards for Residential and Nonresidential Buildings.* Sacramento, California.

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TRS Consultants. (January 2013). *Hoskings Ranch TM 5312, Log No. 03-10-005 - Draft Conservation Grazing Management Plan.*

7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the projected CO_2e emissions from the proposed Hoskings Ranch development based upon the best available information at the time of preparation. The report was prepared by Jeremy Louden; a County approved CEQA Consultant for Air Quality and Greenhouse Gas.

Jeremy Louden, Principal

Date ~~June~~ October 10~~19~~, 2015

Ldn Consulting, Inc.
(760) 473-1253
jlouden@ldnconsulting.net

ATTACHMENT A

CALEEMOD 2013.2.2

Hoskings Ranch

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	80.00	User Defined Unit	1,296.50	0.00	0
Single Family Housing	24.00	Dwelling Unit	120.00	43,200.00	69

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Proprosed grading would not exceed 5 acres maximum per lot, not to exceed 120 acres in total. Industrial Land Use is Agricultural for this analysis. Total head of cattle not to exceed 80 per the proposed grazing plan on the remaining acreage.

Construction Phase - Proposed Construction

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed equipment.

Off-road Equipment - Project Equipment

Trips and VMT - Default settings were increased to 30 miles

Grading - acres

Vehicle Trips - Proposed VMTs

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - All Units to have fireplaces

Land Use Change -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	11,000.00	119.00
tblConstructionPhase	NumDays	155,000.00	119.00
tblConstructionPhase	NumDays	15,500.00	141.00
tblConstructionPhase	NumDays	11,000.00	53.00
tblConstructionPhase	PhaseEndDate	8/29/2017	6/15/2017
tblConstructionPhase	PhaseEndDate	8/29/2017	6/15/2017
tblConstructionPhase	PhaseEndDate	8/29/2017	3/15/2017
tblConstructionPhase	PhaseEndDate	2/28/2017	3/15/2017
tblConstructionPhase	PhaseStartDate	3/16/2017	1/1/2017
tblConstructionPhase	PhaseStartDate	3/16/2017	1/1/2017

tblConstructionPhase	PhaseStartDate	6/16/2017	1/1/2017
tblConstructionPhase	PhaseStartDate	12/16/2016	1/1/2017
tblFireplaces	NumberGas	13.20	0.00
tblFireplaces	NumberNoFireplace	2.40	0.00
tblFireplaces	NumberWood	8.40	24.00
tblGrading	AcresOfGrading	70.50	120.00
tblLandUse	LotAcreage	0.00	1,296.50
tblLandUse	LotAcreage	7.79	120.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	VendorTripLength	6.60	30.00
tblTripsAndVMT	VendorTripLength	6.60	30.00
tblTripsAndVMT	VendorTripLength	6.60	30.00
tblTripsAndVMT	VendorTripLength	6.60	30.00
tblTripsAndVMT	VendorTripLength	6.60	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripLength	16.80	30.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00

tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	13.00	15.00
tblVehicleTrips	CC_TL	6.60	16.80
tblVehicleTrips	CC_TTP	0.00	50.00
tblVehicleTrips	CNW_TL	6.60	7.90
tblVehicleTrips	CNW_TTP	0.00	25.00
tblVehicleTrips	CW_TL	14.70	7.10
tblVehicleTrips	CW_TTP	0.00	25.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	10.08	12.00
tblVehicleTrips	ST_TR	0.00	0.47
tblVehicleTrips	SU_TR	8.77	12.00
tblVehicleTrips	SU_TR	0.00	0.47
tblVehicleTrips	WD_TR	9.57	12.00
tblVehicleTrips	WD_TR	0.00	0.47
tblWoodstoves	NumberCatalytic	1.20	0.00
tblWoodstoves	NumberNoncatalytic	1.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2570	2.7206	1.7621	2.5900e-003	0.5196	0.1334	0.6529	0.2486	0.1227	0.3713	0.0000	237.4560	237.4560	0.0644	0.0000	238.8087
2017	0.9585	2.4892	1.8838	3.0600e-003	0.0299	0.1592	0.1892	8.0500e-003	0.1494	0.1574	0.0000	270.5382	270.5382	0.0611	0.0000	271.8221
Total	**1.2155**	**5.2097**	**3.6460**	**5.6500e-003**	**0.5495**	**0.2926**	**0.8421**	**0.2566**	**0.2721**	**0.5287**	**0.0000**	**507.9941**	**507.9941**	**0.1256**	**0.0000**	**510.6308**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.2570	2.7206	1.7621	2.5900e-003	0.5196	0.1334	0.6529	0.2486	0.1227	0.3713	0.0000	237.4557	237.4557	0.0644	0.0000	238.8085
2017	0.9585	2.4891	1.8838	3.0600e-003	0.0299	0.1592	0.1892	8.0500e-003	0.1494	0.1574	0.0000	270.5379	270.5379	0.0611	0.0000	271.8218
Total	**1.2155**	**5.2097**	**3.6460**	**5.6500e-003**	**0.5495**	**0.2926**	**0.8421**	**0.2566**	**0.2721**	**0.5287**	**0.0000**	**507.9936**	**507.9936**	**0.1256**	**0.0000**	**510.6303**

	ROG	NOx	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	tons/yr										MT/yr					
Area	4.4715	0.0501	4.8452	1.0000e-005		0.6401	0.6401		0.6401	0.6401	56.9706	0.2925	57.2631	2.9000e-004	5.0300e-003	58.8275
Energy	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	91.2953	91.2953	2.9300e-003	1.1100e-003	91.7023
Mobile	0.1972	0.4995	2.2507	6.6800e-003	0.4633	7.5500e-003	0.4708	0.1239	6.9700e-003	0.1309	0.0000	463.7078	463.7078	0.0176	0.0000	464.0773
Waste						0.0000	0.0000		0.0000	0.0000	5.7426	0.0000	5.7426	0.3394	0.0000	12.8696
Water						0.0000	0.0000		0.0000	0.0000	0.4961	10.2334	10.7295	0.0514	1.2900e-003	12.2076
Total	**4.6723**	**0.5802**	**7.1089**	**6.8900e-003**	**0.4633**	**0.6501**	**1.1134**	**0.1239**	**0.6495**	**0.7734**	**63.2093**	**565.5290**	**628.7384**	**0.4116**	**7.4300e-003**	**639.6842**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4715	0.0501	4.8452	1.0000e-005		0.6401	0.6401		0.6401	0.6401	56.9706	0.2925	57.2631	2.9000e-004	5.0300e-003	58.8275
Energy	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	91.2953	91.2953	2.9300e-003	1.1100e-003	91.7023
Mobile	0.1972	0.4995	2.2507	6.6800e-003	0.4633	7.5500e-003	0.4708	0.1239	6.9700e-003	0.1309	0.0000	463.7078	463.7078	0.0176	0.0000	464.0773
Waste						0.0000	0.0000		0.0000	0.0000	5.7426	0.0000	5.7426	0.3394	0.0000	12.8696
Water						0.0000	0.0000		0.0000	0.0000	0.4961	10.2334	10.7295	0.0514	1.2900e-003	12.2068
Total	**4.6723**	**0.5802**	**7.1089**	**6.8900e-003**	**0.4633**	**0.6501**	**1.1134**	**0.1239**	**0.6495**	**0.7734**	**63.2093**	**565.5290**	**628.7384**	**0.4116**	**7.4300e-003**	**639.6834**

	ROG	NOx	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**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-51.7200
Total	**-51.7200**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/2/2016	12/15/2016	5	141	
2	Trenching	Trenching	1/1/2017	3/15/2017	5	53	
3	Building Construction	Building Construction	1/1/2017	6/15/2017	5	119	
4	Paving	Paving	1/1/2017	3/15/2017	5	53	
5	Architectural Coating	Architectural Coating	1/1/2017	6/15/2017	5	119	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 120

Acres of Paving: 0

Residential Indoor: 87,480; Residential Outdoor: 29,160; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	2	8.00	162	0.38
Trenching	Other General Industrial Equipment	1	8.00	87	0.34
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	20.00	0.00	0.00	30.00	30.00	30.00	LD_Mix	HDT_Mix	HHDT
Trenching	3	3.00	0.00	0.00	30.00	30.00	30.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	9.00	3.00	0.00	30.00	30.00	30.00	LD_Mix	HDT_Mix	HHDT
Paving	5	15.00	0.00	0.00	30.00	30.00	30.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	30.00	30.00	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4882	0.0000	0.4882	0.2402	0.0000	0.2402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2495	2.7042	1.6130	2.2100e-003		0.1331	0.1331		0.1225	0.1225	0.0000	208.7132	208.7132	0.0630	0.0000	210.0353
Total	**0.2495**	**2.7042**	**1.6130**	**2.2100e-003**	**0.4882**	**0.1331**	**0.6213**	**0.2402**	**0.1225**	**0.3627**	**0.0000**	**208.7132**	**208.7132**	**0.0630**	**0.0000**	**210.0353**

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	7.4300e-003	0.0164	0.1492	3.8000e-004	0.0314	2.2000e-004	0.0316	8.3400e-003	2.0000e-004	8.5400e-003	0.0000	28.7427	28.7427	1.4600e-003	0.0000	28.7734
Total	**7.4300e-003**	**0.0164**	**0.1492**	**3.8000e-004**	**0.0314**	**2.2000e-004**	**0.0316**	**8.3400e-003**	**2.0000e-004**	**8.5400e-003**	**0.0000**	**28.7427**	**28.7427**	**1.4600e-003**	**0.0000**	**28.7734**

3.2 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4882	0.0000	0.4882	0.2402	0.0000	0.2402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2495	2.7042	1.6130	2.2100e-003		0.1331	0.1331		0.1225	0.1225	0.0000	208.7130	208.7130	0.0630	0.0000	210.0350
Total	**0.2495**	**2.7042**	**1.6130**	**2.2100e-003**	**0.4882**	**0.1331**	**0.6213**	**0.2402**	**0.1225**	**0.3627**	**0.0000**	**208.7130**	**208.7130**	**0.0630**	**0.0000**	**210.0350**

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	7.4300e-003	0.0164	0.1492	3.8000e-004	0.0314	2.2000e-004	0.0316	8.3400e-003	2.0000e-004	8.5400e-003	0.0000	28.7427	28.7427	1.4600e-003	0.0000	28.7734
Total	**7.4300e-003**	**0.0164**	**0.1492**	**3.8000e-004**	**0.0314**	**2.2000e-004**	**0.0316**	**8.3400e-003**	**2.0000e-004**	**8.5400e-003**	**0.0000**	**28.7427**	**28.7427**	**1.4600e-003**	**0.0000**	**28.7734**

3.3 Trenching - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0283	0.2920	0.2366	3.5000e-004		0.0170	0.0170		0.0156	0.0156	0.0000	32.2465	32.2465	9.8800e-003	0.0000	32.4540
Total	**0.0283**	**0.2920**	**0.2366**	**3.5000e-004**		**0.0170**	**0.0170**		**0.0156**	**0.0156**	**0.0000**	**32.2465**	**32.2465**	**9.8800e-003**	**0.0000**	**32.4540**

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	3.7000e-004	8.4000e-004	7.5700e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5579	1.5579	8.0000e-005	0.0000	1.5596
Total	**3.7000e-004**	**8.4000e-004**	**7.5700e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5579**	**1.5579**	**8.0000e-005**	**0.0000**	**1.5596**

3.3 Trenching - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0283	0.2920	0.2366	3.5000e-004		0.0170	0.0170		0.0156	0.0156	0.0000	32.2464	32.2464	9.8800e-003	0.0000	32.4539
Total	**0.0283**	**0.2920**	**0.2366**	**3.5000e-004**		**0.0170**	**0.0170**		**0.0156**	**0.0156**	**0.0000**	**32.2464**	**32.2464**	**9.8800e-003**	**0.0000**	**32.4539**

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	3.7000e-004	8.4000e-004	7.5700e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5579	1.5579	8.0000e-005	0.0000	1.5596
Total	**3.7000e-004**	**8.4000e-004**	**7.5700e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5579**	**1.5579**	**8.0000e-005**	**0.0000**	**1.5596**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1846	1.5711	1.0787	1.6000e-003		0.1060	0.1060		0.0995	0.0995	0.0000	142.4901	142.4901	0.0351	0.0000	143.2265
Total	**0.1846**	**1.5711**	**1.0787**	**1.6000e-003**		**0.1060**	**0.1060**		**0.0995**	**0.0995**	**0.0000**	**142.4901**	**142.4901**	**0.0351**	**0.0000**	**143.2265**

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	3.7300e-003	0.0530	0.0346	1.6000e-004	4.7600e-003	8.9000e-004	5.6400e-003	1.3600e-003	8.1000e-004	2.1700e-003	0.0000	14.7055	14.7055	1.0000e-004	0.0000	14.7075
Worker	2.5000e-003	5.6600e-003	0.0510	1.4000e-004	0.0119	8.0000e-005	0.0120	3.1700e-003	8.0000e-005	3.2400e-003	0.0000	10.4941	10.4941	5.1000e-004	0.0000	10.5049
Total	**6.2300e-003**	**0.0587**	**0.0856**	**3.0000e-004**	**0.0167**	**9.7000e-004**	**0.0176**	**4.5300e-003**	**8.9000e-004**	**5.4100e-003**	**0.0000**	**25.1995**	**25.1995**	**6.1000e-004**	**0.0000**	**25.2124**

3.4 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1846	1.5711	1.0787	1.6000e-003		0.1060	0.1060		0.0995	0.0995	0.0000	142.4899	142.4899	0.0351	0.0000	143.2264
Total	**0.1846**	**1.5711**	**1.0787**	**1.6000e-003**		**0.1060**	**0.1060**		**0.0995**	**0.0995**	**0.0000**	**142.4899**	**142.4899**	**0.0351**	**0.0000**	**143.2264**

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	3.7300e-003	0.0530	0.0346	1.6000e-004	4.7600e-003	8.9000e-004	5.6400e-003	1.3600e-003	8.1000e-004	2.1700e-003	0.0000	14.7055	14.7055	1.0000e-004	0.0000	14.7075
Worker	2.5000e-003	5.6600e-003	0.0510	1.4000e-004	0.0119	8.0000e-005	0.0120	3.1700e-003	8.0000e-005	3.2400e-003	0.0000	10.4941	10.4941	5.1000e-004	0.0000	10.5049
Total	**6.2300e-003**	**0.0587**	**0.0856**	**3.0000e-004**	**0.0167**	**9.7000e-004**	**0.0176**	**4.5300e-003**	**8.9000e-004**	**5.4100e-003**	**0.0000**	**25.1995**	**25.1995**	**6.1000e-004**	**0.0000**	**25.2124**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0410	0.4310	0.3151	4.7000e-004		0.0249	0.0249		0.0229	0.0229	0.0000	43.7306	43.7306	0.0134	0.0000	44.0119
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0410**	**0.4310**	**0.3151**	**4.7000e-004**		**0.0249**	**0.0249**		**0.0229**	**0.0229**	**0.0000**	**43.7306**	**43.7306**	**0.0134**	**0.0000**	**44.0119**

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	1.8600e-003	4.2000e-003	0.0379	1.1000e-004	8.8500e-003	6.0000e-005	8.9100e-003	2.3500e-003	6.0000e-005	2.4100e-003	0.0000	7.7897	7.7897	3.8000e-004	0.0000	7.7978
Total	**1.8600e-003**	**4.2000e-003**	**0.0379**	**1.1000e-004**	**8.8500e-003**	**6.0000e-005**	**8.9100e-003**	**2.3500e-003**	**6.0000e-005**	**2.4100e-003**	**0.0000**	**7.7897**	**7.7897**	**3.8000e-004**	**0.0000**	**7.7978**

3.5 Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0410	0.4310	0.3151	4.7000e-004		0.0249	0.0249		0.0229	0.0229	0.0000	43.7305	43.7305	0.0134	0.0000	44.0119
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0410**	**0.4310**	**0.3151**	**4.7000e-004**		**0.0249**	**0.0249**		**0.0229**	**0.0229**	**0.0000**	**43.7305**	**43.7305**	**0.0134**	**0.0000**	**44.0119**

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	1.8600e-003	4.2000e-003	0.0379	1.1000e-004	8.8500e-003	6.0000e-005	8.9100e-003	2.3500e-003	6.0000e-005	2.4100e-003	0.0000	7.7897	7.7897	3.8000e-004	0.0000	7.7978
Total	**1.8600e-003**	**4.2000e-003**	**0.0379**	**1.1000e-004**	**8.8500e-003**	**6.0000e-005**	**8.9100e-003**	**2.3500e-003**	**6.0000e-005**	**2.4100e-003**	**0.0000**	**7.7897**	**7.7897**	**3.8000e-004**	**0.0000**	**7.7978**

3.6 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6758					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1300	0.1112	1.8000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	15.1919	15.1919	1.6000e-003	0.0000	15.2255
Total	**0.6956**	**0.1300**	**0.1112**	**1.8000e-004**		**0.0103**	**0.0103**		**0.0103**	**0.0103**	**0.0000**	**15.1919**	**15.1919**	**1.6000e-003**	**0.0000**	**15.2255**

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	5.6000e-004	1.2600e-003	0.0113	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.3320	2.3320	1.1000e-004	0.0000	2.3344
Total	**5.6000e-004**	**1.2600e-003**	**0.0113**	**3.0000e-005**	**2.6500e-003**	**2.0000e-005**	**2.6700e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.3320**	**2.3320**	**1.1000e-004**	**0.0000**	**2.3344**

3.6 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6758					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1300	0.1112	1.8000e-004		0.0103	0.0103		0.0103	0.0103	0.0000	15.1918	15.1918	1.6000e-003	0.0000	15.2255
Total	**0.6956**	**0.1300**	**0.1112**	**1.8000e-004**		**0.0103**	**0.0103**		**0.0103**	**0.0103**	**0.0000**	**15.1918**	**15.1918**	**1.6000e-003**	**0.0000**	**15.2255**

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	5.6000e-004	1.2600e-003	0.0113	3.0000e-005	2.6500e-003	2.0000e-005	2.6700e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.3320	2.3320	1.1000e-004	0.0000	2.3344
Total	**5.6000e-004**	**1.2600e-003**	**0.0113**	**3.0000e-005**	**2.6500e-003**	**2.0000e-005**	**2.6700e-003**	**7.0000e-004**	**2.0000e-005**	**7.2000e-004**	**0.0000**	**2.3320**	**2.3320**	**1.1000e-004**	**0.0000**	**2.3344**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1972	0.4995	2.2507	6.6800e-003	0.4633	7.5500e-003	0.4708	0.1239	6.9700e-003	0.1309	0.0000	463.7078	463.7078	0.0176	0.0000	464.0773
Unmitigated	0.1972	0.4995	2.2507	6.6800e-003	0.4633	7.5500e-003	0.4708	0.1239	6.9700e-003	0.1309	0.0000	463.7078	463.7078	0.0176	0.0000	464.0773

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	288.00	288.00	288.00	1,065,790	1,065,790
User Defined Industrial	37.60	37.60	37.60	166,290	166,290
Total	325.60	325.60	325.60	1,232,080	1,232,080

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	16.80	7.10	7.90	41.60	18.80	39.60	86	11	3
User Defined Industrial	7.10	16.80	7.90	25.00	50.00	25.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	55.8786	55.8786	2.2500e-003	4.7000e-004	56.0701
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	55.8786	55.8786	2.2500e-003	4.7000e-004	56.0701
NaturalGas Mitigated	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4167	35.4167	6.8000e-004	6.5000e-004	35.6322
NaturalGas Unmitigated	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4167	35.4167	6.8000e-004	6.5000e-004	35.6322

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	663684	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4167	35.4167	6.8000e-004	6.5000e-004	35.6322
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.5800e-003**	**0.0306**	**0.0130**	**2.0000e-004**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**35.4167**	**35.4167**	**6.8000e-004**	**6.5000e-004**	**35.6322**

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	663684	3.5800e-003	0.0306	0.0130	2.0000e-004		2.4700e-003	2.4700e-003		2.4700e-003	2.4700e-003	0.0000	35.4167	35.4167	6.8000e-004	6.5000e-004	35.6322
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.5800e-003**	**0.0306**	**0.0130**	**2.0000e-004**		**2.4700e-003**	**2.4700e-003**		**2.4700e-003**	**2.4700e-003**	**0.0000**	**35.4167**	**35.4167**	**6.8000e-004**	**6.5000e-004**	**35.6322**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	170982	55.8786	2.2500e-003	4.7000e-004	56.0701
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**55.8786**	**2.2500e-003**	**4.7000e-004**	**56.0701**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	170982	55.8786	2.2500e-003	4.7000e-004	56.0701
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**55.8786**	**2.2500e-003**	**4.7000e-004**	**56.0701**

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	4.4715	0.0501	4.8452	1.0000e-005		0.6401	0.6401		0.6401	0.6401	56.9706	0.2925	57.2631	2.9000e-004	5.0300e-003	58.8275
Unmitigated	4.4715	0.0501	4.8452	1.0000e-005		0.6401	0.6401		0.6401	0.6401	56.9706	0.2925	57.2631	2.9000e-004	5.0300e-003	58.8275

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	0.0676					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.2297	0.0480	4.6656	0.0000		0.6391	0.6391		0.6391	0.6391	56.9706	0.0000	56.9706	0.0000	5.0300e-003	58.5289
Landscaping	5.5100e-003	2.0700e-003	0.1795	1.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	0.2925	0.2925	2.9000e-004	0.0000	0.2986
Total	**4.4715**	**0.0501**	**4.8452**	**1.0000e-005**		**0.6401**	**0.6401**		**0.6401**	**0.6401**	**56.9706**	**0.2925**	**57.2631**	**2.9000e-004**	**5.0300e-003**	**58.8275**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0676					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1687					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.2297	0.0480	4.6656	0.0000		0.6391	0.6391		0.6391	0.6391	56.9706	0.0000	56.9706	0.0000	5.0300e-003	58.5289
Landscaping	5.5100e-003	2.0700e-003	0.1795	1.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	0.2925	0.2925	2.9000e-004	0.0000	0.2986
Total	**4.4715**	**0.0501**	**4.8452**	**1.0000e-005**		**0.6401**	**0.6401**		**0.6401**	**0.6401**	**56.9706**	**0.2925**	**57.2631**	**2.9000e-004**	**5.0300e-003**	**58.8275**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.7295	0.0514	1.2900e-003	12.2068
Unmitigated	10.7295	0.0514	1.2900e-003	12.2076

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.5637 / 0.985809	10.7295	0.0514	1.2900e-003	12.2076
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**10.7295**	**0.0514**	**1.2900e-003**	**12.2076**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	1.5637 / 0.985809	10.7295	0.0514	1.2900e-003	12.2068
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**10.7295**	**0.0514**	**1.2900e-003**	**12.2068**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.7426	0.3394	0.0000	12.8696
Unmitigated	5.7426	0.3394	0.0000	12.8696

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	28.29	5.7426	0.3394	0.0000	12.8696
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**5.7426**	**0.3394**	**0.0000**	**12.8696**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	28.29	5.7426	0.3394	0.0000	12.8696
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**5.7426**	**0.3394**	**0.0000**	**12.8696**

9.0 Operational Offroad

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

10.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-51.7200	0.0000	0.0000	-51.7200

10.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Grassland	1416.5 / 1404.5	-51.7200	0.0000	0.0000	-51.7200
Total		**-51.7200**	**0.0000**	**0.0000**	**-51.7200**