

# **GLOBAL CLIMATE CHANGE**

**Shadow Run Ranch Residential Development  
TM 5223 RPL<sup>3</sup>, ER 00-02-035, P00-030  
County of San Diego, CA**

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## **LIST OF ACRONYMS**

Assembly Bill 32 (AB32)

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 (CO<sub>2</sub>)

Cubic Yards (CY)

Environmental Protection Agency (EPA)

Green House Gas (GHG)

International Residential Code (IRC)

Low Carbon Fuel Standard (LCFS)

Methane (CH<sub>4</sub>)

Nitrous Oxide (N<sub>2</sub>O)

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 project specific methodology. Greenhouse Gases analyzed in this study are Carbon Dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), and Nitrous Oxide (N<sub>2</sub>O). To simplify greenhouse gas calculations, both CH<sub>4</sub> and N<sub>2</sub>O are converted to equivalent amounts of CO<sub>2</sub> and are identified as CO<sub>2</sub>e.

The Project proposes the subdivision of 248.2 acres into 44 residential lots on 105.1 acres, a biological open space lot of 91.3 acres, a recreation lot containing an existing man-made pond on 8 acres, and an agricultural lot of 39.2 acres on which existing agricultural groves will be maintained by the Project's Homeowner's Association (HOA). Existing structures, consisting of a manager's residence, sheds, and a barn, will be demolished before construction of the proposed uses. All phases (i.e. grading, trenching, paving and construction) of the proposed Project are anticipated to start in 2017 with construction and full Buildout sometime in mid to late 2018 with full operations in 2019.

During construction of the project, it is expected that approximately 776.14 Metric Tons (MT) of GHGs will be generated. Given this, the project would generate 38.81 MT per year over the amortized 20 year minimum life of the project.

During operations, 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 generated by the project.

Project GHG emissions were calculated by combining regulatory measures such as Advanced Clean Cars, Low Carbon Fuel Standards, Tire Pressure Regulations, and Utility renewable portfolio reductions, with project design features including installing 440 – 285 Watt Solar Panels, implementing a waste recycling program, reducing water demand with low flow fixtures, and requiring only natural gas hearth options. Based on these regulatory measures, the project as designed will generate roughly 890 MT per year. Since this is less than the screening level of 900 MT as identified by CAPCOA, CEQA impacts related to project-generated GHGs would be less than significant (California Air Pollution Control Officers Association, 2008).

## **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 GHG 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 mitigation measures to bring the project to a level considered less than significant.

### 1.2 Project Location

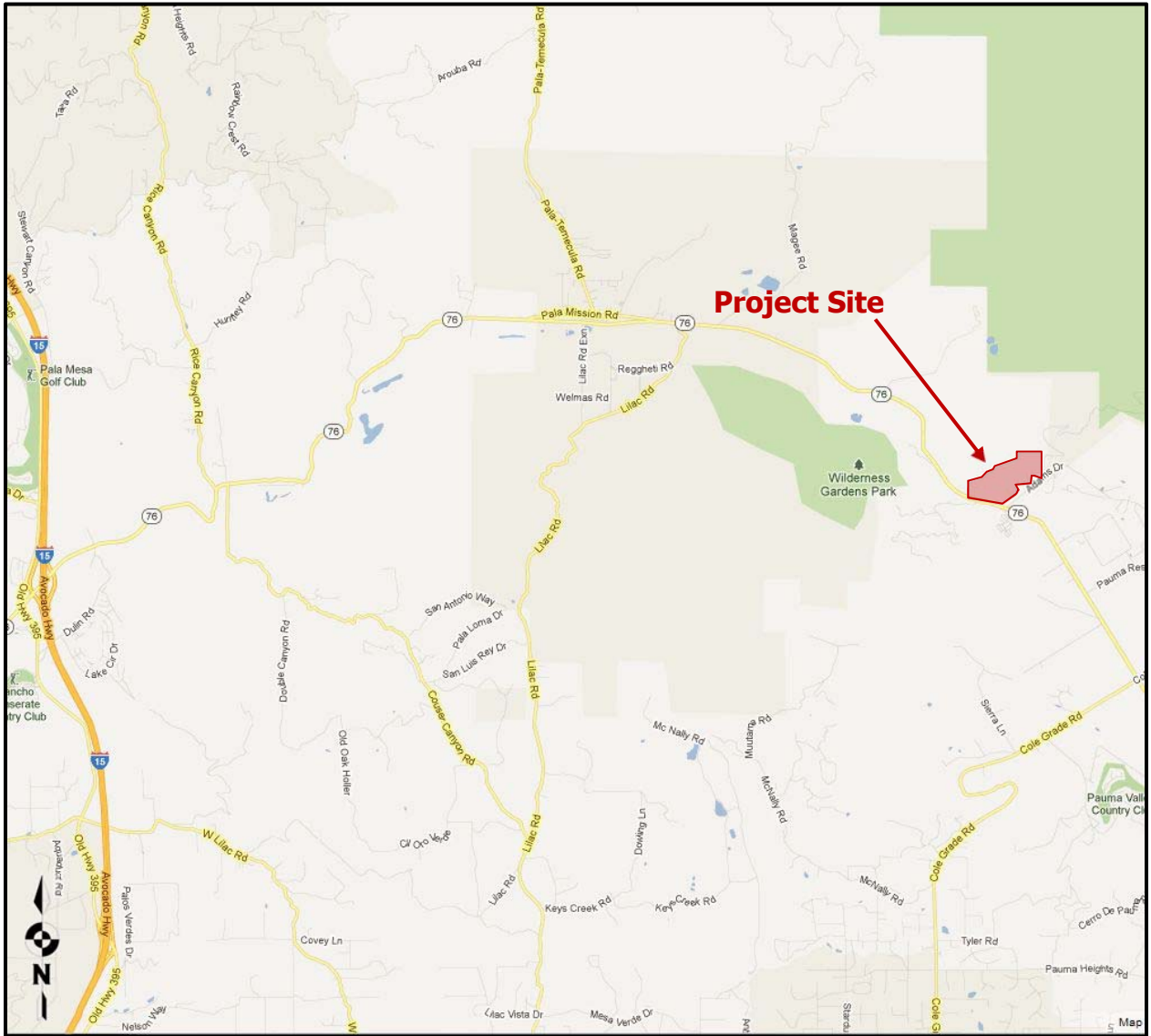
The proposed development is located in the unincorporated County of San Diego, approximately ten miles east of Interstate 15. The Project is adjacent to State Route 76 (SR 76) just north of Adams Drive. Access to the Project site is provided by SR 76. State Route 76 and Pala Temecula Road are arterials that connect the Project to other arterials. Interstate 15 provides regional access to the Project site. A general project vicinity map is shown in Figure 1–A on the following page.

### 1.3 Project Description

The proposed project seeks the development of 47 lots consisting of 44 residential uses and 3 open space areas over a 248.26 acre project site in the Pala/Pauma Subregional Area. Out of the 248.26 acres only approximately 110 acres will be graded for residential lots and the rest will be used as open space. Grading will include a total of 63,660 cubic yards (cu yd.) of earthwork and is expected to balance. Grading would start sometime in the middle of 2017 and full Buildout could be as soon as 14-months later or in August of 2018 and full operations in 2019.

Also, as part of this project, existing agricultural groves outside of the pads and roads on each lot will be retained while maintenance of these groves will be covered by the HOA. Existing structures, consisting of a manager's residence, sheds, and a barn, will be demolished to make way for the development. A site development plan is shown in Figure 1-B on Page 3 of this report.

**Figure 1-A: Project Vicinity Map**



Source: (Google, 2012)







## **2.0 EXISTING ENVIRONMENTAL SETTING**

### 2.1 Understanding Greenhouse Gasses

Greenhouse gases such as water vapor and carbon dioxide (CO<sub>2</sub>) 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<sub>2</sub> and to a much lesser extent CO. Additionally, over the years scientists have measured this rise in CO<sub>2</sub> and concluded that it is heating the planet. Additionally, it is thought that other greenhouse gases such as Methane and Nitrous Oxide contribute to this effect.

Greenhouse Gasses of concern as analyzed in this study are CO<sub>2</sub>, Methane (CH<sub>4</sub>), and Nitrous Oxide (N<sub>2</sub>O). To simplify greenhouse gas calculations, both CH<sub>4</sub> and N<sub>2</sub>O can be converted to an equivalent amount of CO<sub>2</sub> or CO<sub>2</sub>e. CO<sub>2</sub>e is calculated by multiplying the calculated levels of CH<sub>4</sub> and N<sub>2</sub>O by a Global Warming Potential (GWP). According to the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report, the GWPs for CH<sub>4</sub> and N<sub>2</sub>O are 21 and 310, respectively.

### 2.2 Existing Setting

The Project site lies in the northern portion of San Diego County 10 miles east of Interstate 15, approximately 40 miles north of the City of San Diego, north of Pala Road (State Route 76) and northwest of Adams Drive. The Pala Band of Mission Indians Reservation lies west of the proposed Shadow Run development. Current uses onsite consist of active agricultural operations with associated caretaker residence, offices, and other buildings related to the farming enterprise. The existing buildings will be demolished before construction of the proposed uses. Existing emissions are part of baseline inventories and the increase over baseline emissions is considered when analyzing the proposed project. The increase in GHG emissions associated with developed proposed under the project is analyzed in this Study.

The Project area is generally represented by a diverse topography with elevations ranging from 720 feet to 1,620 feet above mean sea level. The northern portion of the site is generally steep sloped generally transitioning into a moderately sloped topography to the south. Land uses directly surrounding the project is agricultural and undeveloped lands.

The Pala Casino Resort is located west of the Project site and contains on-site facilities for numerous amenities such as shopping, a day spa, golfing, dining, entertainment, a resort hotel, and a small commercial center. The Pala Casino Resort facilities have recently undergone a major renovation and expansion, which created parking structures.

### 2.3 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) area often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heat up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

### **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 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.*

*(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 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 (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 miles per gallon (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 mpg 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.

### 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 conditioning systems. Furthermore, the California standards are estimated to increase fuel efficiency to 35.7 mpg by 2016 (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 from 2017 to 2025. 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). It should be noted that the 2.4% reductions would only be applied to the passenger cars and light duty trucks which account for roughly 78% of the vehicles used onsite. Given this, the expected reduction would be only 1.87%.

### 3.7 Vehicle Efficiency Measures

Additional 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 and according to the scoping plan will reduce GHGs by 4.5 MMTCO<sub>2e</sub> in 2020. To date however, some of the reduction measures under Vehicle Efficacy are still under review with the exception of the Tire Pressure Regulations which estimate to remove 0.6 MMTCO<sub>2e</sub>.

### 3.8 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.

### 3.9 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 or 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<sub>2e</sub> grams per unit of fuel energy sold.

### 3.10 Executive Order B-30-15 and Senate Bill 32

Executive Order B-30-15 established a statewide emissions reduction target of 40% below 1990 levels by 2030. This interim measure was identified by the Governor as one way to keep the State on a trajectory needed to meet the 2050 goal of reducing GHG emissions to 80% below 1990 levels by 2050 pursuant to Executive Order S-3-05. The 2030 and 2050 goals described in both these Executive Orders are an expression of executive policy and (and not adopted legislative or regulatory action). (Office of Governor Edmund G. Brown Jr., 2015). The framework of B-30-15 was signed into law under SB 32. The executive order specifically requires the Air Resources Board (ARB) to approve statewide greenhouse gas (GHG) emissions limits equivalent to 40% below the 1990 level by 2030 and 80% below the 1990 level by 2050. Prohibits ARB from implementing the next update of the California Global Warming Solutions Act of 2006 (AB 32) Scoping Plan until ARB has taken specified actions, including submitting the Scoping Plan to the Legislature for review.



### 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. For purposes of the post-2020 analysis, the emission reduction benefits of achieving a 50 percent RPS by 2030 has been quantified as a 17 percent increase over RPS in 2020 and 30 percent over what has already been achieved.

### 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 (California Energy Code, 2015).

The latest standards being required at the time this report was written was Title 24 2013 which were 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 23.3 percent for multi-family uses and natural gas consumption is reduced by 6.5 percent for single family developments and 3.8% for multi-family structures (Architectural Energy Corporation (AEC), 2013). Nonresidential Newly Constructed Buildings would have a reduction from the 2008 Standards of 21.8 percent for electricity and 16.8 percent for natural gas. These reductions are applied to the Title 24 energy sources within the model.

In addition, the 2016 Title 24 standards have been approved and will be required on January 1, 2017. Further, both the CEC and CPUC remain committed to their goal that all new residential construction in California achieves zero net energy standards by 2020. The

GHG emission and energy savings associated with those standards have not been quantified at this time and have not been quantified in this report.

The California Energy Commission estimates that implementation of the 2016 Standards will reduce statewide annual electricity consumption by about 281 gigawatt-hours per year (GWh/yr), and natural gas consumption by 16 million therms per year. The potential effect of these energy savings to air quality are a net reduction in the emission of nitric oxides (NO<sub>x</sub>) by roughly 508 tons per year, sulfur oxides (SO<sub>x</sub>) by 13 tons/year, carbon monoxide (CO) by 41 tons/year and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) by 13.75 tons per year. Additionally, the implementation of the 2016 Standards will reduce statewide carbon dioxide equivalent (CO<sub>2</sub>e) emissions by 160 thousand metric tons per year (California Energy Commission, 2015). The exact reductions these homes will realize isn't fully established yet so reductions for these requirements are not included within this analysis.

### 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 (CARB) 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 help 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 Project Specific Guidelines

For projects that exceed the CAPCOA threshold of 900 MT CO<sub>2</sub>e, CARB recommends that CEQA Lead Agencies "...quantify the GHG emissions, apportion the forecast emissions to relevant source categories, and develop GHG mitigation measures to reduce their emissions" the California Air Pollution Control Officers Association (CAPCOA) for determining the need for additional analysis and mitigation for GHG-related impacts under CEQA. The CAPCOA white paper recommends a 900 MT CO<sub>2</sub>e/year screening level to determine the size of

projects that would be likely to have a less than considerable contribution to the cumulative impact of climate change. Project exceeding this would require further analysis and mitigation, as necessary (California Air Pollution Control Officers Association, 2008).

A number of air districts in the State of California have recommended or adopted efficiency metric or "service population" thresholds as a method for analyzing cumulative GHG emissions and significance of impacts under CEQA. A project's "service population" refers to a project's residents plus employees that would be generated by the proposed project's development. This efficiency metric is expressed as MT CO<sub>2</sub>e per service population per year (MT CO<sub>2</sub>e/year/service population).

## 4.0 METHODOLOGY

### 4.1 Construction CO<sub>2</sub>e Emissions Calculation Methodology

The Project construction would be expected to take approximately 14 months to complete. Existing onsite structures will be demolished within roughly nine days. 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 August 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.

**Table 4.1: Expected Construction Equipment**

Equipment Identification	Proposed Start	Proposed Completion	Quantity
<b>Demolition</b>	5/20/2017	5/31/2017	
Excavators			1
<b>Mass Site Grading</b>	6/1/2017	12/15/2017	
Scrapers			3
Tractors/Loaders/Backhoes			3
Excavators			1
Graders			1
Rubber Tired Dozers			1
Water Trucks			1
<b>Trenching</b>	12/16/2017	1/16/2018	
Excavators			2
Other General Industrial Equipment			1
Tractors/Loaders/Backhoes			1
<b>Paving</b>	1/17/2018	2/12/2018	
Paving Equipment			2
Rollers			2
Pavers			1
<b>Building Construction</b>	2/13/2018	7/31/2018	
Forklift			3
Tractor/loader/backhoe			3
Crane			1
Generator			1
Welders			1
<b>Architectural Coating</b>	5/15/2018	7/31/2018	
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 emissions related to construction were estimated using CalEEMod Version 2013.2.2 air quality model which was developed by ENVIRON International Corporation for South Coast Air Quality Management District (SCAQMD). The 2013.2.2 version of CalEEMod incorporates emission factors from the EMFAC2011 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions. Because CO<sub>2</sub> emissions from construction only occur at the beginning of a project, emissions will be amortized over a 20-year period and added to operational emissions.

#### 4.2 Operational Emissions Calculation Methodology

Once construction is completed the proposed project would generate air pollutant 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 wood burning fireplaces, 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 occurs in landfills to form GHGs.

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 emissions and GHG through the use of carbon fuel burning vehicles for transportation. Energy Intensities as recommended by CalEEMod inputs were assumed within this report. Baseline Title 24 efficiencies as modeled were assumed to be Title 24 (2008) The annual CalEEMod inputs are shown in **Attachment 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 776.14 Metric Tons of CO<sub>2</sub>e over the construction life of the project. Based on industry standard and guidance from air districts, it is necessary to amortize the construction emissions over the project life which is assumed to be 20 years. Given this, the annual construction emission would be 38.81 MT per year. A summary of the construction emissions is shown in Table 5.1 below.

**Table 5.1: Expected Construction CO<sub>2</sub>e Emissions Summary MT/Year**

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2017	0.00	575.56	575.56	0.17	0.00	579.15
2018	0.00	196.05	196.05	0.04	0.00	196.99
<b>Total</b>						776.14
<b>Yearly Average Construction Emissions (Metric Tons/year over 20 years)</b>						<b>38.81</b>
Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 4.1 above.						

### 5.2 Regulatory and Design Feature Emission Reductions

#### Area Source Project Design Feature

The project would be designed to utilize natural gas hearth options. All hearth options shall not be designed to burn wood. This effort would reduce GHGs by 35.12 MT as calculated by CalEEMod. All regulatory and design feature reductions are combined and provided in Table 5.2 of this report.

#### Title 24 (2013) Electricity and Natural Gas Reductions

The County of San Diego will require the contractor to utilize the most current building code at the time residential units are constructed which currently is Title 24 (2013). As discussed in Section 4.3, Title 24 (2013) would reduce electrical GHG emissions for residential by 36.4 percent or 37.42 MT. Similarly, Natural Gas emissions would be reduced since the proposed project would increase building efficiency to at least Title 24 2013 and would ensure that the project achieves at least a 6.5% reduction over Title 24, 2008 or 4.25 MT.

## **Offsite Vehicular Reductions**

The State of California requires vehicle manufactures to cut emissions of vehicles under the Advanced Clean Cars program (formerly known as Pavley and LEV III) rules. Vehicular emissions are expected to be reduced through 2020 and beyond. Based off CARB adopted reduction measures, the proposed Project would achieve related emissions reductions of 1.87% from Advanced Clean Cars and 0.6% from the tire pressure regulation program under vehicle efficiency measures (California Air Resource Board, 2011). CalEEMod does not provide direct calculation algorithms to apply these reductions. Given this, a combined 2.47% or 18.19 MT reduction from LEV III and tire pressure regulations would be expected.

## **Solid Waste Design Features**

Under AB 341, the State would be required to increase diversion of waste from landfills to recycling centers by 75% or 25% more than requirements set forth under the Integrated Waste Management Act of 1989 which is the baseline scenario. The Project would provide separate waste containers to allow for simpler material separation or the Project would pay for a waste collection service that recycles the materials in accordance with AB 341. All green waste will be diverted from landfills and recycled as mulch. For purposes of this analysis, a 25% reduction in GHGs was applied to account for the improvement over baseline conditions. This effort would reduce GHGs by 5.88 MT as calculated by CalEEMod.

## **Water Design Features**

The project would be required to install low flow fixtures for all faucets, showers and toilets within each residential unit. This reduction measure would save 3.16 MT of GHG Emissions as calculated by CalEEMod.

## **Water Reduction Measures from RPS**

GHG Emissions from water and wastewater are calculated directly within CalEEMod and are a function of the quantity of water and the electrical intensity or kilowatt-hours per unit of water. These values would be reduced by 13% from RPS or 2.91 MT.

## **Photovoltaic Solar Onsite Renewable Energy Design Feature Reductions**

The project will be required to add 10 – 285 watt solar panel to each of the 44 units for a total of 440 panels within the project. Based on review of the number of panels having the required output, the project would generate roughly 272,337.45 kWh per year (See Attachment B to this report). This design feature was included in a separate CalEEMod

model to demonstrate the GHG reductions from the calculated energy production (Shown in Attachment C to this report). Based on the reductions in electricity demand, this design feature would reduce emissions by 89.31 MT per year.

### **Electrical Utility Reductions Required by Regulatory Measures**

SDG&E (the proposed project's energy provider) is required to provide 33% of the energy supplied to their customers from renewable sources by 2020 which is required under S-14-08. The renewables portfolio that is part of the baseline emission factors used to estimate GHG emissions within CalEEMod assumes 20% and cannot be applied towards a project. Based on this, only 13% of the 33% goal should be applied as an energy reduction. Given this, a reduction of an additional 0.71 MT would be expected based on the amount of energy the project would use after accounting for the reduction from the proposed solar.

### 5.3 Project Emissions

As previously discussed, emissions generated from area, energy, mobile, solid waste and water uses are calculated within CalEEMod. These settings which are automatically populated throughout the model are based on the inputted land use and intensities expected at the project site. SDG&E averages for utility emissions were utilized for the calculations throughout the model. The calculated operational emissions for 2020 are identified in Table 5.2 on the following page and include both regulatory reductions and design features which yield a total 2020 project GHG generation of 889.52 MT CO<sub>2</sub>e. Since this is less than screening thresholds of 900 MT as identified by CAPCOA. Therefore, CEQA impacts related to project-generated GHGs would be less than significant.

**Table 5.2: Year 2020 Project GHG Emissions**

<b>CO<sub>2</sub>e Generator (Unmitigated)</b>	<b>Total Project CO<sub>2</sub>e Emissions</b>
	<b>(Metric Tons)</b>
Area (Project)	67.04
Energy (Electricity)	94.76
Energy (Natural Gas)	61.97
Mobile (Emissions including LCFS as reported from CalEEMod)	736.34
Waste	23.50
Water	22.38
Construction (Amortized over 20 years)	38.81
<b>Total</b>	<b>1,044.80</b>
<b>CO<sub>2</sub>e Design Features and Reductions Methodology</b>	<b>CO<sub>2</sub>e Reduction (Metric Tons)</b>
Area – Design Feature - wood burning hearths shall not be used. The project will be conditioned to only include natural gas burning hearth options – (Design Feature calculated within CalEEMod)	-35.12
Energy - Electricity – Renewable Portfolio will reduce emissions by 13%	-0.71
Energy - Electricity – Install 440 – 285 Watt Photovoltaic Panels	-89.31
Mobile - Pavley II Plus Tire Pressure Regulations – 2.47% combined reduction	-18.19
Waste – Project would install recycling bins to and would increase recycling to 75% diversion. – Reduction factor of 25% applied – (Design Feature calculated within CalEEMod)	-5.88
Water – Project would install low flow water fixtures which would produce a 20% reduction for interior use (Design Feature calculated within CalEEMod)	-3.16
Water – Renewable Portfolio will reduce energy usage for water supply, treatment and distribution by 13%	-2.91
<b>Design Feature and Reductions Total</b>	<b>-155.28</b>
<b>Total Unmitigated GHG Emission</b>	<b>1,044.80</b>
<b>Combined Total with Design Features and Reductions</b>	<b>889.52</b>

## **6.0 REFERENCES**

- Architectural Energy Corporation (AEC). (2013, July). Retrieved 2015, from <http://www.energy.ca.gov/2013publications/CEC-400-2013-008/CEC-400-2013-008.pdf>
- 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. Retrieved from [http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07\\_IMPACT\\_ANALYSIS.PDF](http://www.energy.ca.gov/title24/2008standards/rulemaking/documents/2007-11-07_IMPACT_ANALYSIS.PDF)
- California Air Pollution Control Officers Association. (2008). *CAPCOA*. Retrieved from <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>
- California Air Resource Board. (2011). *STATUS OF SCOPING PLAN RECOMMENDED MEASURES*. Retrieved 2015, from [http://www.arb.ca.gov/cc/scopingplan/sp\\_measures\\_implementation\\_timeline.pdf](http://www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf)
- California Air Resource Board. (2013, May 6). *Clean Car Standards - Pavely, Assembly Bill 1493*. Retrieved 2015, from <http://www.arb.ca.gov/cc/ccms/ccms.htm>
- California Air Resource Board. (2014, June 2). *Amendments to the Low-Emission Vehicle Program - LEV III*. Retrieved March 2015, from <http://www.arb.ca.gov/msprog/levprog/leviii/leviii.htm>
- California Building Standards Commission. (June 2010). *California Green Building Standards Code*. Sacramento: California Building Standards Commission. Retrieved from [http://www.documents.dgs.ca.gov/bsc/CALGreen/2010\\_CA\\_Green\\_Bldg.pdf](http://www.documents.dgs.ca.gov/bsc/CALGreen/2010_CA_Green_Bldg.pdf)
- California Energy Code*. (2015). Retrieved from [http://en.wikipedia.org/wiki/California\\_Energy\\_Code](http://en.wikipedia.org/wiki/California_Energy_Code)
- California Energy Commission. (2015). *INITIAL STUDY / PROPOSED NEGATIVE DECLARATION FOR THE 2016 BUILDING ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS*. Retrieved from <http://www.energy.ca.gov/2015publications/CEC-400-2015-012/CEC-400-2015-012.pdf>
- Google. (2012). Retrieved 2012, from [maps.google.com](http://maps.google.com)
- Office of Governor Edmund G. Brown Jr. (2015, April 29). *gov.ca.gov*. Retrieved June 7, 2015, from <http://gov.ca.gov/news.php?id=18938>
- Subnational Global Climate Leadership Memorandum of Understanding. (2015, May). <http://under2mou.org>. Retrieved June 2015, from California - Appendix to MOU - Specific Actions and Commitments: [http://under2mou.org/?page\\_id=146](http://under2mou.org/?page_id=146)

## **7.0 CERTIFICATIONS**

The contents of this report represent an accurate depiction of the projected CO<sub>2</sub>e emissions from the project development based upon the best available information at the time of preparation. The report was prepared by Jeremy Loudon; a County approved CEQA Consultant for Air Quality and Greenhouse Gas.



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Date February 8, 2017



**ATTACHMENT A**

CALEEMOD 2013.2.2

**Shadow Run 2020 with design features  
San Diego County, Annual**

**1.0 Project Characteristics**

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**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	44.00	Dwelling Unit	110.00	79,200.00	126

**1.2 Other Project Characteristics**

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

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - 110 Acres will be graded

Construction Phase - Proposed Construction Duration

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment

Off-road Equipment - Off-Highway Truck was used as a water truck

Off-road Equipment - Equipment

Off-road Equipment - Proposed Trenching Equipment

Trips and VMT - construction traffic

Demolition -

Grading - Project would only grade 110 acres

Architectural Coating - 150 g/l

Vehicle Trips - Trip Generation Estimated at 12 Trips per day per dwelling unit

Area Coating - 150 g/l

Energy Use - T24 Corrections SFE - 36.4%, MFE - 23.3%, SFNG - 6.5%, MFNG - 3.8%, Lighting Energy Intensity 25%

Water And Wastewater -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblConstructionPhase	NumDays	220.00	56.00
tblConstructionPhase	NumDays	3,100.00	121.00

tblConstructionPhase	NumDays	200.00	8.00
tblConstructionPhase	NumDays	310.00	142.00
tblConstructionPhase	NumDays	220.00	19.00
tblConstructionPhase	PhaseEndDate	10/17/2018	7/31/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	5/15/2018
tblEnergyUse	LightingElect	1,608.84	1,206.63
tblEnergyUse	T24E	425.62	270.69
tblEnergyUse	T24NG	21,834.49	20,415.25
tblGrading	AcresOfGrading	497.00	110.00
tblLandUse	LotAcreage	14.29	110.00
tblOffRoadEquipment	HorsePower	400.00	189.00
tblOffRoadEquipment	HorsePower	87.00	238.00
tblOffRoadEquipment	LoadFactor	0.38	0.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	VendorTripLength	7.30	6.60
tblTripsAndVMT	VendorTripLength	7.30	6.60
tblTripsAndVMT	VendorTripLength	7.30	6.60
tblTripsAndVMT	VendorTripLength	7.30	6.60
tblTripsAndVMT	VendorTripLength	7.30	6.60
tblTripsAndVMT	VendorTripLength	7.30	6.60
tblTripsAndVMT	WorkerTripLength	10.80	16.80
tblTripsAndVMT	WorkerTripLength	10.80	16.80
tblTripsAndVMT	WorkerTripLength	10.80	16.80

tblTripsAndVMT	WorkerTripLength	10.80	16.80
tblTripsAndVMT	WorkerTripLength	10.80	16.80
tblTripsAndVMT	WorkerTripLength	10.80	16.80
tblVehicleTrips	HO_TL	7.50	7.90
tblVehicleTrips	HS_TL	7.30	7.10
tblVehicleTrips	HW_TL	10.80	16.80
tblVehicleTrips	ST_TR	10.08	12.00
tblVehicleTrips	SU_TR	8.77	12.00
tblVehicleTrips	WD_TR	9.57	12.00

## 2.0 Emissions Summary

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**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	3.2040	0.0413	3.7288	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0449
Energy	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	156.0308	156.0308	4.9800e-003	1.9200e-003	156.7293
Mobile	0.3169	0.7944	3.5897	0.0106	0.7347	0.0120	0.7467	0.1965	0.0111	0.2076	0.0000	735.7491	735.7491	0.0280	0.0000	736.3360
Waste						0.0000	0.0000		0.0000	0.0000	10.4865	0.0000	10.4865	0.6197	0.0000	23.5010
Water						0.0000	0.0000		0.0000	0.0000	0.9095	18.7613	19.6708	0.0942	2.3600e-003	22.3806
<b>Total</b>	<b>3.5271</b>	<b>0.8889</b>	<b>7.3412</b>	<b>0.0123</b>	<b>0.7347</b>	<b>0.4959</b>	<b>1.2307</b>	<b>0.1965</b>	<b>0.4950</b>	<b>0.6915</b>	<b>56.8462</b>	<b>930.1360</b>	<b>986.9822</b>	<b>0.7893</b>	<b>7.8500e-003</b>	<b>1,005.9918</b>

## 2.2 Overall Operational

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.4463	3.7900e-003	0.3280	2.0000e-005		3.9800e-003	3.9800e-003		3.9600e-003	3.9600e-003	0.0000	31.7246	31.7246	1.1200e-003	5.7000e-004	31.9254
Energy	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	156.0308	156.0308	4.9800e-003	1.9200e-003	156.7293
Mobile	0.3169	0.7944	3.5897	0.0106	0.7347	0.0120	0.7467	0.1965	0.0111	0.2076	0.0000	735.7491	735.7491	0.0280	0.0000	736.3360
Waste						0.0000	0.0000		0.0000	0.0000	7.8649	0.0000	7.8649	0.4648	0.0000	17.6257
Water						0.0000	0.0000		0.0000	0.0000	0.7276	16.3215	17.0491	0.0754	1.9000e-003	19.2202
<b>Total</b>	<b>0.7694</b>	<b>0.8514</b>	<b>3.9403</b>	<b>0.0110</b>	<b>0.7347</b>	<b>0.0203</b>	<b>0.7550</b>	<b>0.1965</b>	<b>0.0193</b>	<b>0.2158</b>	<b>8.5925</b>	<b>939.8260</b>	<b>948.4185</b>	<b>0.5742</b>	<b>4.3900e-003</b>	<b>961.8366</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>78.19</b>	<b>4.21</b>	<b>46.33</b>	<b>10.82</b>	<b>0.00</b>	<b>95.91</b>	<b>38.65</b>	<b>0.00</b>	<b>96.09</b>	<b>68.79</b>	<b>84.88</b>	<b>-1.04</b>	<b>3.91</b>	<b>27.25</b>	<b>44.08</b>	<b>4.39</b>

## 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	5/20/2017	5/31/2017	5	8	
2	Grading	Grading	6/1/2017	12/15/2017	5	142	
3	Trenching	Trenching	12/16/2017	1/16/2018	5	22	
4	Paving	Paving	1/17/2018	2/12/2018	5	19	
5	Building Construction	Building Construction	2/13/2018	7/31/2018	5	121	
6	Architectural Coating	Architectural Coating	5/15/2018	7/31/2018	5	56	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 110**

**Acres of Paving: 0**

**Residential Indoor: 160,380; Residential Outdoor: 53,460; 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
Demolition	Excavators	1	8.00	162	0.38
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	189	0.50
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	3	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Excavators	2	8.00	162	0.38
Trenching	Other General Industrial Equipment	1	8.00	238	0.34
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
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
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	1	3.00	0.00	5.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	25.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	16.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

### 3.2 Demolition - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0000e-004	0.0000	5.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	0.0161	0.0137	2.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.9641	1.9641	6.0000e-004	0.0000	1.9767
<b>Total</b>	<b>1.4500e-003</b>	<b>0.0161</b>	<b>0.0137</b>	<b>2.0000e-005</b>	<b>5.0000e-004</b>	<b>7.9000e-004</b>	<b>1.2900e-003</b>	<b>8.0000e-005</b>	<b>7.3000e-004</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>1.9641</b>	<b>1.9641</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>1.9767</b>

### 3.2 Demolition - 2017

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	6.5000e-004	5.7000e-004	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1679	0.1679	0.0000	0.0000	0.1679
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	4.0000e-005	7.0000e-005	6.8000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1329
<b>Total</b>	<b>9.0000e-005</b>	<b>7.2000e-004</b>	<b>1.2500e-003</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>1.0000e-005</b>	<b>2.0000e-004</b>	<b>5.0000e-005</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3006</b>	<b>0.3006</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3008</b>

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.0000e-004	0.0000	5.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	0.0161	0.0137	2.0000e-005		7.9000e-004	7.9000e-004		7.3000e-004	7.3000e-004	0.0000	1.9641	1.9641	6.0000e-004	0.0000	1.9767
<b>Total</b>	<b>1.4500e-003</b>	<b>0.0161</b>	<b>0.0137</b>	<b>2.0000e-005</b>	<b>5.0000e-004</b>	<b>7.9000e-004</b>	<b>1.2900e-003</b>	<b>8.0000e-005</b>	<b>7.3000e-004</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>1.9641</b>	<b>1.9641</b>	<b>6.0000e-004</b>	<b>0.0000</b>	<b>1.9767</b>

### 3.2 Demolition - 2017

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.0000e-005	6.5000e-004	5.7000e-004	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1679	0.1679	0.0000	0.0000	0.1679
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	4.0000e-005	7.0000e-005	6.8000e-004	0.0000	1.5000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1328	0.1328	1.0000e-005	0.0000	0.1329
<b>Total</b>	<b>9.0000e-005</b>	<b>7.2000e-004</b>	<b>1.2500e-003</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>1.0000e-005</b>	<b>2.0000e-004</b>	<b>5.0000e-005</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3006</b>	<b>0.3006</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3008</b>

### 3.3 Grading - 2017

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4859	0.0000	0.4859	0.2413	0.0000	0.2413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5714	6.5474	4.1817	5.8600e-003		0.3066	0.3066		0.2820	0.2820	0.0000	543.5180	543.5180	0.1665	0.0000	547.0152
<b>Total</b>	<b>0.5714</b>	<b>6.5474</b>	<b>4.1817</b>	<b>5.8600e-003</b>	<b>0.4859</b>	<b>0.3066</b>	<b>0.7925</b>	<b>0.2413</b>	<b>0.2820</b>	<b>0.5234</b>	<b>0.0000</b>	<b>543.5180</b>	<b>543.5180</b>	<b>0.1665</b>	<b>0.0000</b>	<b>547.0152</b>

### 3.3 Grading - 2017

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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	6.3900e-003	0.0109	0.1003	2.7000e-004	0.0221	1.6000e-004	0.0223	5.8800e-003	1.4000e-004	6.0200e-003	0.0000	19.6373	19.6373	9.8000e-004	0.0000	19.6578
<b>Total</b>	<b>6.3900e-003</b>	<b>0.0109</b>	<b>0.1003</b>	<b>2.7000e-004</b>	<b>0.0221</b>	<b>1.6000e-004</b>	<b>0.0223</b>	<b>5.8800e-003</b>	<b>1.4000e-004</b>	<b>6.0200e-003</b>	<b>0.0000</b>	<b>19.6373</b>	<b>19.6373</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>19.6578</b>

#### 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					0.4859	0.0000	0.4859	0.2413	0.0000	0.2413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5714	6.5474	4.1817	5.8600e-003		0.3066	0.3066		0.2820	0.2820	0.0000	543.5173	543.5173	0.1665	0.0000	547.0145
<b>Total</b>	<b>0.5714</b>	<b>6.5474</b>	<b>4.1817</b>	<b>5.8600e-003</b>	<b>0.4859</b>	<b>0.3066</b>	<b>0.7925</b>	<b>0.2413</b>	<b>0.2820</b>	<b>0.5234</b>	<b>0.0000</b>	<b>543.5173</b>	<b>543.5173</b>	<b>0.1665</b>	<b>0.0000</b>	<b>547.0145</b>



### 3.3 Grading - 2017

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	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	6.3900e-003	0.0109	0.1003	2.7000e-004	0.0221	1.6000e-004	0.0223	5.8800e-003	1.4000e-004	6.0200e-003	0.0000	19.6373	19.6373	9.8000e-004	0.0000	19.6578
<b>Total</b>	<b>6.3900e-003</b>	<b>0.0109</b>	<b>0.1003</b>	<b>2.7000e-004</b>	<b>0.0221</b>	<b>1.6000e-004</b>	<b>0.0223</b>	<b>5.8800e-003</b>	<b>1.4000e-004</b>	<b>6.0200e-003</b>	<b>0.0000</b>	<b>19.6373</b>	<b>19.6373</b>	<b>9.8000e-004</b>	<b>0.0000</b>	<b>19.6578</b>

### 3.4 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	8.1400e-003	0.0912	0.0589	1.0000e-004		4.5400e-003	4.5400e-003		4.1800e-003	4.1800e-003	0.0000	9.5875	9.5875	2.9400e-003	0.0000	9.6492
<b>Total</b>	<b>8.1400e-003</b>	<b>0.0912</b>	<b>0.0589</b>	<b>1.0000e-004</b>		<b>4.5400e-003</b>	<b>4.5400e-003</b>		<b>4.1800e-003</b>	<b>4.1800e-003</b>	<b>0.0000</b>	<b>9.5875</b>	<b>9.5875</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>9.6492</b>

### 3.4 Trenching - 2017

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000
Worker	1.8000e-004	3.1000e-004	2.8300e-003	1.0000e-005	6.2000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5532	0.5532	3.0000e-005	0.0000	0.5537	
<b>Total</b>	<b>1.8000e-004</b>	<b>3.1000e-004</b>	<b>2.8300e-003</b>	<b>1.0000e-005</b>	<b>6.2000e-004</b>	<b>0.0000</b>	<b>6.3000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.5532</b>	<b>0.5532</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.5537</b>	

#### 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	8.1400e-003	0.0912	0.0589	1.0000e-004		4.5400e-003	4.5400e-003		4.1800e-003	4.1800e-003	0.0000	9.5875	9.5875	2.9400e-003	0.0000	9.6492	
<b>Total</b>	<b>8.1400e-003</b>	<b>0.0912</b>	<b>0.0589</b>	<b>1.0000e-004</b>		<b>4.5400e-003</b>	<b>4.5400e-003</b>		<b>4.1800e-003</b>	<b>4.1800e-003</b>	<b>0.0000</b>	<b>9.5875</b>	<b>9.5875</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>9.6492</b>	

### 3.4 Trenching - 2017

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	1.8000e-004	3.1000e-004	2.8300e-003	1.0000e-005	6.2000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5532	0.5532	3.0000e-005	0.0000	0.5537
<b>Total</b>	<b>1.8000e-004</b>	<b>3.1000e-004</b>	<b>2.8300e-003</b>	<b>1.0000e-005</b>	<b>6.2000e-004</b>	<b>0.0000</b>	<b>6.3000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.5532</b>	<b>0.5532</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.5537</b>

### 3.4 Trenching - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7500e-003	0.0851	0.0668	1.2000e-004		4.1200e-003	4.1200e-003		3.7900e-003	3.7900e-003	0.0000	11.3211	11.3211	3.5200e-003	0.0000	11.3951
<b>Total</b>	<b>7.7500e-003</b>	<b>0.0851</b>	<b>0.0668</b>	<b>1.2000e-004</b>		<b>4.1200e-003</b>	<b>4.1200e-003</b>		<b>3.7900e-003</b>	<b>3.7900e-003</b>	<b>0.0000</b>	<b>11.3211</b>	<b>11.3211</b>	<b>3.5200e-003</b>	<b>0.0000</b>	<b>11.3951</b>

### 3.4 Trenching - 2018

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000
Worker	1.9000e-004	3.4000e-004	3.0700e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6389	0.6389	3.0000e-005	0.0000	0.6395	
<b>Total</b>	<b>1.9000e-004</b>	<b>3.4000e-004</b>	<b>3.0700e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.6389</b>	<b>0.6389</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.6395</b>	

#### Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Off-Road	7.7500e-003	0.0851	0.0668	1.2000e-004		4.1200e-003	4.1200e-003		3.7900e-003	3.7900e-003	0.0000	11.3211	11.3211	3.5200e-003	0.0000	11.3951	
<b>Total</b>	<b>7.7500e-003</b>	<b>0.0851</b>	<b>0.0668</b>	<b>1.2000e-004</b>		<b>4.1200e-003</b>	<b>4.1200e-003</b>		<b>3.7900e-003</b>	<b>3.7900e-003</b>	<b>0.0000</b>	<b>11.3211</b>	<b>11.3211</b>	<b>3.5200e-003</b>	<b>0.0000</b>	<b>11.3951</b>	

### 3.4 Trenching - 2018

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	3.4000e-004	3.0700e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.5000e-004	2.0000e-004	0.0000	2.0000e-004	0.0000	0.6389	0.6389	3.0000e-005	0.0000	0.6395
<b>Total</b>	<b>1.9000e-004</b>	<b>3.4000e-004</b>	<b>3.0700e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>0.6389</b>	<b>0.6389</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.6395</b>

### 3.5 Paving - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1301	0.1110	1.7000e-004		7.3100e-003	7.3100e-003		6.7200e-003	6.7200e-003	0.0000	15.4296	15.4296	4.8000e-003	0.0000	15.5304
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0123</b>	<b>0.1301</b>	<b>0.1110</b>	<b>1.7000e-004</b>		<b>7.3100e-003</b>	<b>7.3100e-003</b>		<b>6.7200e-003</b>	<b>6.7200e-003</b>	<b>0.0000</b>	<b>15.4296</b>	<b>15.4296</b>	<b>4.8000e-003</b>	<b>0.0000</b>	<b>15.5304</b>

### 3.5 Paving - 2018

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	6.9000e-004	6.3100e-003	2.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.3150	1.3150	6.0000e-005	0.0000	1.3163
<b>Total</b>	<b>4.0000e-004</b>	<b>6.9000e-004</b>	<b>6.3100e-003</b>	<b>2.0000e-005</b>	<b>1.5400e-003</b>	<b>1.0000e-005</b>	<b>1.5500e-003</b>	<b>4.1000e-004</b>	<b>1.0000e-005</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>1.3150</b>	<b>1.3150</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.3163</b>

#### 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	0.0123	0.1301	0.1110	1.7000e-004		7.3100e-003	7.3100e-003		6.7200e-003	6.7200e-003	0.0000	15.4295	15.4295	4.8000e-003	0.0000	15.5304
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0123</b>	<b>0.1301</b>	<b>0.1110</b>	<b>1.7000e-004</b>		<b>7.3100e-003</b>	<b>7.3100e-003</b>		<b>6.7200e-003</b>	<b>6.7200e-003</b>	<b>0.0000</b>	<b>15.4295</b>	<b>15.4295</b>	<b>4.8000e-003</b>	<b>0.0000</b>	<b>15.5304</b>

### 3.5 Paving - 2018

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	0.0000
Worker	4.0000e-004	6.9000e-004	6.3100e-003	2.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.3150	1.3150	6.0000e-005	0.0000	1.3163	
<b>Total</b>	<b>4.0000e-004</b>	<b>6.9000e-004</b>	<b>6.3100e-003</b>	<b>2.0000e-005</b>	<b>1.5400e-003</b>	<b>1.0000e-005</b>	<b>1.5500e-003</b>	<b>4.1000e-004</b>	<b>1.0000e-005</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>1.3150</b>	<b>1.3150</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.3163</b>	

### 3.6 Building Construction - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1615	1.4073	1.0607	1.6200e-003		0.0904	0.0904		0.0850	0.0850	0.0000	143.2457	143.2457	0.0351	0.0000	143.9818
<b>Total</b>	<b>0.1615</b>	<b>1.4073</b>	<b>1.0607</b>	<b>1.6200e-003</b>		<b>0.0904</b>	<b>0.0904</b>		<b>0.0850</b>	<b>0.0850</b>	<b>0.0000</b>	<b>143.2457</b>	<b>143.2457</b>	<b>0.0351</b>	<b>0.0000</b>	<b>143.9818</b>

### 3.6 Building Construction - 2018

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	tons/yr										MT/yr						
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8600e-003	0.0221	0.0368	7.0000e-005	1.7800e-003	3.2000e-004	2.1000e-003	5.1000e-004	2.9000e-004	8.0000e-004	0.0000	5.7450	5.7450	4.0000e-005	0.0000	5.7459	
Worker	3.1400e-003	5.4200e-003	0.0495	1.5000e-004	0.0121	8.0000e-005	0.0122	3.2100e-003	8.0000e-005	3.2800e-003	0.0000	10.3070	10.3070	5.0000e-004	0.0000	10.3174	
<b>Total</b>	<b>6.0000e-003</b>	<b>0.0275</b>	<b>0.0863</b>	<b>2.2000e-004</b>	<b>0.0139</b>	<b>4.0000e-004</b>	<b>0.0143</b>	<b>3.7200e-003</b>	<b>3.7000e-004</b>	<b>4.0800e-003</b>	<b>0.0000</b>	<b>16.0520</b>	<b>16.0520</b>	<b>5.4000e-004</b>	<b>0.0000</b>	<b>16.0634</b>	

#### 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	0.1615	1.4073	1.0607	1.6200e-003		0.0904	0.0904		0.0850	0.0850	0.0000	143.2455	143.2455	0.0351	0.0000	143.9816
<b>Total</b>	<b>0.1615</b>	<b>1.4073</b>	<b>1.0607</b>	<b>1.6200e-003</b>		<b>0.0904</b>	<b>0.0904</b>		<b>0.0850</b>	<b>0.0850</b>	<b>0.0000</b>	<b>143.2455</b>	<b>143.2455</b>	<b>0.0351</b>	<b>0.0000</b>	<b>143.9816</b>



### 3.6 Building Construction - 2018

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8600e-003	0.0221	0.0368	7.0000e-005	1.7800e-003	3.2000e-004	2.1000e-003	5.1000e-004	2.9000e-004	8.0000e-004	0.0000	5.7450	5.7450	4.0000e-005	0.0000	5.7459
Worker	3.1400e-003	5.4200e-003	0.0495	1.5000e-004	0.0121	8.0000e-005	0.0122	3.2100e-003	8.0000e-005	3.2800e-003	0.0000	10.3070	10.3070	5.0000e-004	0.0000	10.3174
<b>Total</b>	<b>6.0000e-003</b>	<b>0.0275</b>	<b>0.0863</b>	<b>2.2000e-004</b>	<b>0.0139</b>	<b>4.0000e-004</b>	<b>0.0143</b>	<b>3.7200e-003</b>	<b>3.7000e-004</b>	<b>4.0800e-003</b>	<b>0.0000</b>	<b>16.0520</b>	<b>16.0520</b>	<b>5.4000e-004</b>	<b>0.0000</b>	<b>16.0634</b>

### 3.7 Architectural Coating - 2018

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3600e-003	0.0562	0.0519	8.0000e-005		4.2200e-003	4.2200e-003		4.2200e-003	4.2200e-003	0.0000	7.1491	7.1491	6.8000e-004	0.0000	7.1634
<b>Total</b>	<b>0.7517</b>	<b>0.0562</b>	<b>0.0519</b>	<b>8.0000e-005</b>		<b>4.2200e-003</b>	<b>4.2200e-003</b>		<b>4.2200e-003</b>	<b>4.2200e-003</b>	<b>0.0000</b>	<b>7.1491</b>	<b>7.1491</b>	<b>6.8000e-004</b>	<b>0.0000</b>	<b>7.1634</b>

### 3.7 Architectural Coating - 2018

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	4.7000e-004	4.2900e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8944	0.8944	4.0000e-005	0.0000	0.8953
<b>Total</b>	<b>2.7000e-004</b>	<b>4.7000e-004</b>	<b>4.2900e-003</b>	<b>1.0000e-005</b>	<b>1.0500e-003</b>	<b>1.0000e-005</b>	<b>1.0500e-003</b>	<b>2.8000e-004</b>	<b>1.0000e-005</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.8944</b>	<b>0.8944</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.8953</b>

#### 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	0.7434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3600e-003	0.0562	0.0519	8.0000e-005		4.2200e-003	4.2200e-003		4.2200e-003	4.2200e-003	0.0000	7.1491	7.1491	6.8000e-004	0.0000	7.1634
<b>Total</b>	<b>0.7517</b>	<b>0.0562</b>	<b>0.0519</b>	<b>8.0000e-005</b>		<b>4.2200e-003</b>	<b>4.2200e-003</b>		<b>4.2200e-003</b>	<b>4.2200e-003</b>	<b>0.0000</b>	<b>7.1491</b>	<b>7.1491</b>	<b>6.8000e-004</b>	<b>0.0000</b>	<b>7.1634</b>

### 3.7 Architectural Coating - 2018

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7000e-004	4.7000e-004	4.2900e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8944	0.8944	4.0000e-005	0.0000	0.8953
<b>Total</b>	<b>2.7000e-004</b>	<b>4.7000e-004</b>	<b>4.2900e-003</b>	<b>1.0000e-005</b>	<b>1.0500e-003</b>	<b>1.0000e-005</b>	<b>1.0500e-003</b>	<b>2.8000e-004</b>	<b>1.0000e-005</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>0.8944</b>	<b>0.8944</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.8953</b>

### 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	0.3169	0.7944	3.5897	0.0106	0.7347	0.0120	0.7467	0.1965	0.0111	0.2076	0.0000	735.7491	735.7491	0.0280	0.0000	736.3360
Unmitigated	0.3169	0.7944	3.5897	0.0106	0.7347	0.0120	0.7467	0.1965	0.0111	0.2076	0.0000	735.7491	735.7491	0.0280	0.0000	736.3360

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	528.00	528.00	528.00	1,953,949	1,953,949
Total	528.00	528.00	528.00	1,953,949	1,953,949

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	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

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**

~~4.4 Fleet Mix~~

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	94.4326	94.4326	3.8000e-003	7.9000e-004	94.7562
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	94.4326	94.4326	3.8000e-003	7.9000e-004	94.7562
NaturalGas Mitigated	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.5982	61.5982	1.1800e-003	1.1300e-003	61.9731
NaturalGas Unmitigated	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.5982	61.5982	1.1800e-003	1.1300e-003	61.9731

**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	1.15431e+006	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.5982	61.5982	1.1800e-003	1.1300e-003	61.9731
<b>Total</b>		<b>6.2200e-003</b>	<b>0.0532</b>	<b>0.0226</b>	<b>3.4000e-004</b>		<b>4.3000e-003</b>	<b>4.3000e-003</b>		<b>4.3000e-003</b>	<b>4.3000e-003</b>	<b>0.0000</b>	<b>61.5982</b>	<b>61.5982</b>	<b>1.1800e-003</b>	<b>1.1300e-003</b>	<b>61.9731</b>

### 5.2 Energy by Land Use - NaturalGas

#### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	1.15431e+006	6.2200e-003	0.0532	0.0226	3.4000e-004		4.3000e-003	4.3000e-003		4.3000e-003	4.3000e-003	0.0000	61.5982	61.5982	1.1800e-003	1.1300e-003	61.9731
<b>Total</b>		<b>6.2200e-003</b>	<b>0.0532</b>	<b>0.0226</b>	<b>3.4000e-004</b>		<b>4.3000e-003</b>	<b>4.3000e-003</b>		<b>4.3000e-003</b>	<b>4.3000e-003</b>	<b>0.0000</b>	<b>61.5982</b>	<b>61.5982</b>	<b>1.1800e-003</b>	<b>1.1300e-003</b>	<b>61.9731</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	288954	94.4326	3.8000e-003	7.9000e-004	94.7562
<b>Total</b>		<b>94.4326</b>	<b>3.8000e-003</b>	<b>7.9000e-004</b>	<b>94.7562</b>

### 5.3 Energy by Land Use - Electricity

#### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	288954	94.4326	3.8000e-003	7.9000e-004	94.7562
<b>Total</b>		<b>94.4326</b>	<b>3.8000e-003</b>	<b>7.9000e-004</b>	<b>94.7562</b>

### 6.0 Area Detail

#### 6.1 Mitigation Measures Area

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	0.4463	3.7900e-003	0.3280	2.0000e-005		3.9800e-003	3.9800e-003		3.9600e-003	3.9600e-003	0.0000	31.7246	31.7246	1.1200e-003	5.7000e-004	31.9254
Unmitigated	3.2040	0.0413	3.7288	1.3500e-003		0.4796	0.4796		0.4796	0.4796	45.4501	19.5948	65.0449	0.0425	3.5700e-003	67.0449

### 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	0.1239					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.7608	0.0375	3.4011	1.3300e-003		0.4778	0.4778		0.4778	0.4778	45.4501	19.0611	64.5113	0.0419	3.5700e-003	66.5003
Landscaping	9.9800e-003	3.7900e-003	0.3278	2.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	0.5337	0.5337	5.2000e-004	0.0000	0.5446
<b>Total</b>	<b>3.2040</b>	<b>0.0413</b>	<b>3.7288</b>	<b>1.3500e-003</b>		<b>0.4796</b>	<b>0.4796</b>		<b>0.4796</b>	<b>0.4796</b>	<b>45.4501</b>	<b>19.5948</b>	<b>65.0449</b>	<b>0.0425</b>	<b>3.5700e-003</b>	<b>67.0449</b>



## 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	0.1239					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3093					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.1500e-003	0.0000	1.7000e-004	0.0000		2.1800e-003	2.1800e-003		2.1500e-003	2.1500e-003	0.0000	31.1909	31.1909	6.0000e-004	5.7000e-004	31.3808
Landscaping	9.9800e-003	3.7900e-003	0.3278	2.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	0.5337	0.5337	5.2000e-004	0.0000	0.5446
<b>Total</b>	<b>0.4463</b>	<b>3.7900e-003</b>	<b>0.3280</b>	<b>2.0000e-005</b>		<b>3.9800e-003</b>	<b>3.9800e-003</b>		<b>3.9500e-003</b>	<b>3.9500e-003</b>	<b>0.0000</b>	<b>31.7246</b>	<b>31.7246</b>	<b>1.1200e-003</b>	<b>5.7000e-004</b>	<b>31.9254</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	17.0491	0.0754	1.9000e-003	19.2202
Unmitigated	19.6708	0.0942	2.3600e-003	22.3806

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.86678 / 1.80732	19.6708	0.0942	2.3600e-003	22.3806
<b>Total</b>		<b>19.6708</b>	<b>0.0942</b>	<b>2.3600e-003</b>	<b>22.3806</b>

## 7.2 Water by Land Use

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	2.29342 / 1.80732	17.0491	0.0754	1.9000e-003	19.2202
<b>Total</b>		<b>17.0491</b>	<b>0.0754</b>	<b>1.9000e-003</b>	<b>19.2202</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.8649	0.4648	0.0000	17.6257
Unmitigated	10.4865	0.6197	0.0000	23.5010

## 8.2 Waste by Land Use

### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	51.66	10.4865	0.6197	0.0000	23.5010
<b>Total</b>		<b>10.4865</b>	<b>0.6197</b>	<b>0.0000</b>	<b>23.5010</b>

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	38.745	7.8649	0.4648	0.0000	17.6257
<b>Total</b>		<b>7.8649</b>	<b>0.4648</b>	<b>0.0000</b>	<b>17.6257</b>

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## **10.0 Vegetation**

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**ATTACHMENT B**

Solar Calculations

## Attachment B

Source: <https://eosweb.larc.nasa.gov>

Source: [https://eosweb.larc.nasa.gov/cgi-bin/sse/grid.cgi?&num=063124&lat=33.349&hgt=100&submit=Submit&veg=17&sitelev=&email=skip@arc.nasa.gov&p=grid\\_id&p=ret\\_tlt0&p=ret\\_esh0&p=ret\\_psh0&step=2&lon=-117.009](https://eosweb.larc.nasa.gov/cgi-bin/sse/grid.cgi?&num=063124&lat=33.349&hgt=100&submit=Submit&veg=17&sitelev=&email=skip@arc.nasa.gov&p=grid_id&p=ret_tlt0&p=ret_esh0&p=ret_psh0&step=2&lon=-117.009)

model elevation  
 Northern boundary  
 34  
 Western boundary      Center      Eastern boundary  
 -118      Latitude 33.5      -117  
 Longitude -117.5  
 Southern boundary  
 33

**Parameters for Tilted Solar Panels:**

**Monthly Averaged Radiation Incident On An Equator-Pointed Tilted Surface (kWh/m<sup>2</sup>/day)**

Lat 33.36 Lon -117.07	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
SSE HRZ	3.05	3.80	5.05	6.38	6.72	6.97	6.97	6.52	5.53	4.26	3.44	2.86	5.13
K	0.56	0.56	0.59	0.63	0.60	0.60	0.61	0.62	0.61	0.58	0.60	0.57	0.59
Diffuse	0.90	1.18	1.48	1.71	2.08	2.19	2.07	1.82	1.54	1.25	0.90	0.80	1.50
Direct	5.09	5.27	6.22	7.29	6.91	7.06	7.25	7.16	6.59	5.75	5.76	5.14	6.30
Tilt 0	3.00	3.77	5.00	6.23	6.69	6.93	6.93	6.49	5.45	4.23	3.37	2.83	5.08
Tilt 18	3.96	4.60	5.63	6.53	6.58	6.67	6.74	6.59	5.95	5.03	4.39	3.85	5.55
Tilt 33	4.52	5.02	5.83	6.39	6.13	6.09	6.20	6.29	6.03	5.40	4.98	4.47	5.61
Tilt 48	4.82	5.17	5.71	5.92	5.38	5.21	5.36	5.67	5.78	5.48	5.28	4.83	5.38
Tilt 90	4.19	4.10	3.86	3.16	2.48	2.25	2.35	2.84	3.60	4.15	4.50	4.34	3.48
OPT	4.87	5.17	5.83	6.53	6.71	6.93	6.94	6.61	6.04	5.49	5.31	4.92	5.95
OPT ANG	57.0	48.0	35.0	20.0	5.00	0.00	2.00	12.0	29.0	44.0	55.0	60.0	30.4

NOTE: Diffuse radiation, direct normal radiation and tilted surface radiation are not calculated when the clearness index (K) is below 0.3 or above 0.8.

Parameter Definition

$$E \text{ (kWh)} = \#Panels * Panel \text{ Rating} * H * 365days * PR$$

#Panels = 10 Panels per Unit – 44 Units – 440 Panels Total

Panel Rating in kWp = .285 kWp

H= Annual Average irradiation on tilted panels (kwh/m<sup>2</sup>/year) = 5.95 (365) = 2171.75

PR=Performance Ratio (Between .5 and .9) = .80

E=Energy (kWh) = 440 panels \* .285 kwp \* 2171.75 (kwh/m<sup>2</sup>/year) \*.80 = 272,337.45kWh

**CalEEMod Estimated GHG Reductions from 272,337.45 kWh**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-272337	-89.0023	-0.0036	-0.0007	-89.3073
<b>Total</b>		<b>-89.0023</b>	<b>-0.0036</b>	<b>-0.0007</b>	<b>-89.3073</b>

**ATTACHMENT C**

CalEEMod from Solar Output



## Shadow Run Ranch Solar San Diego County, Annual

### 1.0 Project Characteristics

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#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

#### 1.2 Other Project Characteristics

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

#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - 1 Pane 285Watts Each

Land Use - Rooftop Solar

Construction Phase -

Off-road Equipment -

Off-road Equipment - zero hours

Trips and VMT - zero

Grading -

Architectural Coating -

Vehicle Trips -

Woodstoves - asdf

Area Coating -

Landscape Equipment - zero

Energy Use -  $E = \text{Energy (kWh)} = 1 * .285 * 2171.75 * .80 = 495.159\text{kWh}$

Water And Wastewater -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblConstructionPhase	PhaseEndDate	12/30/2016	12/31/2016
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblTripsAndVMT	WorkerTripNumber	8.00	0.00

## 2.0 Emissions Summary

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**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	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>

## 2.2 Overall Operational

### Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	-89.0023	-89.0023	-0.0036	-0.0007	-89.3073
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>-89.0023</b>	<b>-89.0023</b>	<b>-0.0036</b>	<b>-0.0007</b>	<b>-89.3072</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>445,011,350.00</b>	<b>445,011,350.00</b>	<b>0.00</b>	<b>0.00</b>	<b>446,536,300.00</b>

## 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	12/30/2016	12/31/2016	5	1	

**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 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	0.00	174	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**



### 3.2 Site Preparation - 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					2.6300e-003	0.0000	2.6300e-003	1.4500e-003	0.0000	1.4500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1000e-004	7.7000e-003	5.7900e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.8000e-004	3.8000e-004	0.0000	0.5133	0.5133	1.5000e-004	0.0000	0.5166
<b>Total</b>	<b>7.1000e-004</b>	<b>7.7000e-003</b>	<b>5.7900e-003</b>	<b>1.0000e-005</b>	<b>2.6300e-003</b>	<b>4.1000e-004</b>	<b>3.0400e-003</b>	<b>1.4500e-003</b>	<b>3.8000e-004</b>	<b>1.8300e-003</b>	<b>0.0000</b>	<b>0.5133</b>	<b>0.5133</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.5166</b>

#### 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
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### 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	0.0000	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	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

#### 4.4 Fleet Mix

Historical Energy Use: N



### 5.2 Energy by Land Use - NaturalGas

#### Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
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
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### 5.3 Energy by Land Use - Electricity

#### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-272337	-89.0023	-0.0036	-0.0007	-89.3073
<b>Total</b>		<b>-89.0023</b>	<b>-0.0036</b>	<b>-0.0007</b>	<b>-89.3073</b>

### 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	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

## 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	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>

### 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	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

### 7.2 Water by Land Use

#### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 7.2 Water by Land Use

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

## 8.2 Waste by Land Use

### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

### Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

## 9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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## **10.0 Vegetation**

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# County of San Diego

**MARK WARDLAW**  
DIRECTOR

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**TO:** Robert Hingtgen, Planner III  
**FROM:** Ricky Williams, Air Quality and Greenhouse Gas Specialist  
**SUBJECT:** Shadow Run Ranch (PDS2001-3100-5223) Climate Change Review  
**DATE:** December 5, 2018

## Project Description

The proposed Shadow Run Ranch project (project) is located on a 248.2-acre site in the unincorporated community of Pala/Pauma in north central San Diego County. The project proposes 44 residential lots, a biological resources open space lot, an agricultural open space lot, and a recreational open space lot. The project site is within the Rural Land (RL) Designation of the General Plan, with a minimum lot size of 40 acres (RL-40), and is zoned A 70 (one dwelling unit per four acres). However, the project is being processed under the Historic General Plan because it was "pipelined" under provisions of the General Plan Update and is considered to be within the Estate Development Area (EDA) regional category, which allows for combined agricultural and low density residential uses with parcel sizes of two to 20 acres. The site is subject to the (19) Intensive Agriculture land use designation and is within the Pala/Pauma Subregional Plan. The proposed project was accounted for in the 2011 General Plan Update growth projections as the project was already in process at that time.

A global climate change analysis was previously completed for this project by Ldn Consulting. This analysis was completed based on County of San Diego (County) guidelines and thresholds that have since been superseded by the approval of the County's Climate Action Plan (CAP) and associated California Environmental Quality Act (CEQA) streamlining. The purpose of this memorandum is to clarify and assess the project's consistency with the County's CAP for the purposes of CEQA compliance and to support the project's environmental impact report.

## San Diego County Climate Action Plan

The County released a Draft CAP and related Draft Supplemental Environmental Impact Report (DEIR) for public review on August 10, 2017. The Final CAP and Supplemental Environmental Impact Report (SEIR) were adopted by the County's Board of Supervisors on February 14, 2018. The CAP serves as the applicable plan for CEQA purposes related to Climate Change.

The purpose of the CAP is to serve as mitigation to reduce GHG emissions resulting from buildout of the County's 2011 General Plan Update in accordance with General Plan Update Policy COS-20.1 and General Plan Update Environmental Impact Report Mitigation Measures CC-1.2 and CC-1.8. The CAP was prepared in accordance with CEQA Guidelines Section 15183.5 to allow projects consistent with the general plan the opportunity to use the CAP as a CEQA streamlining tool. Because the Shadow Run Ranch was accounted for in the 2011 General Plan Update growth projections, its GHG emissions are included in the baseline emissions the CAP is intended to reduce.

### **Climate Change Significance Threshold**

In conjunction with the adoption of the CAP, the County also adopted CEQA implementation tools, including the *Guidelines for Determining Significance: Climate Change* (Guidelines) and Appendix A, *Final Climate Action Plan Consistency Review Checklist* (CAP Checklist). Based on these guidelines, a proposed project would:

- Have a less than significant cumulative considerable contribution to climate change impacts if it is found to be consistent with the County's CAP; and
- Would normally have a cumulative considerable contribution to climate change impacts if it is found to be inconsistent with the County's CAP.

The project does not include a change to either the land use designation or zoning classification, and would therefore be considered consistent with the growth projections and land use assumptions made in the CAP. Thus, the project's greenhouse gas emissions and impacts related to climate change can be assessed based on its compliance with the CAP Checklist. The completed CAP Checklist for the proposed Shadow Run Ranch project is attached to this memo.



Permit Number: \_\_\_\_\_

COUNTY OF SAN DIEGO  
LAND USE AND ENVIRONMENT GROUP  
Department of Planning & Development Services

## Final Climate Action Plan

### Consistency Review Checklist

### Introduction

The County of San Diego (County) Climate Action Plan (CAP), adopted by the Board of Supervisors on February 14, 2018, outlines actions that the County will undertake to meet its greenhouse gas (GHG) emissions reduction targets. Implementation of the CAP will require that new development projects incorporate more sustainable design standards and implement applicable reduction measures consistent with the CAP. To help plan and design projects consistent with the CAP, and to assist County staff in implementing the CAP and determining the consistency of proposed projects with the CAP during development review, the County has prepared a CAP Consistency Review Checklist (Checklist). This Checklist, in conjunction with the CAP, provides a streamlined review process for proposed discretionary projects that require environmental review pursuant to the California Environmental Quality Act (CEQA). Please refer to the County's Guidelines for Determining Significance for Climate Change (Guidelines) for more information on GHG emissions, climate change impact requirements, thresholds of significance, and compliance with CEQA Guidelines Section 15183.5.

The purpose of this Checklist is to implement GHG reduction measures from the CAP that apply to new development projects. The CAP presents the County's comprehensive strategy to reduce GHG emissions to meet its reduction targets. These reductions will be achieved through a combination of County initiatives and reduction actions for both existing and new development. Reduction actions that apply to existing and new development will be implemented through a combination of mandatory requirements and incentives. This Checklist specifically applies to proposed discretionary projects that require environmental review pursuant to CEQA. Therefore, the Checklist represents one implementation tool in the County's overall strategy to implement the CAP. Implementation of measures that do not apply to new development projects will occur through the implementation mechanisms identified in Chapter 5 of the CAP. Implementation of applicable reduction measures in new development projects will help the County achieve incremental reductions towards its targets, with additional reductions occurring through County initiatives and measures related to existing development that are implemented outside of the Checklist process.

The Checklist follows a two-step process to determine if projects are consistent with the CAP and whether they may have a significant cumulative impact under the County's adopted GHG thresholds of significance. The Checklist first assesses a project's consistency with the growth projections and land use assumptions that formed the basis of CAP emissions projections. If a project is consistent with the projections and land use assumptions in the CAP, its associated growth in terms of GHG emissions would have been accounted for in the CAP's projections and project implementation of the CAP reduction measures will contribute towards reducing the County's emissions and meeting the County's reduction targets. Projects that include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project

when compared to existing designation, would also be within the projections assumed in the CAP. Projects responding in the affirmative to Step 1 questions can move forward to Step 2 of the Checklist. If a land use and/or zoning designation amendment results in a more GHG-intensive project, the project is required to demonstrate consistency with applicable CAP measures and offset the increase in emissions as described in the Guidelines. Step 2 of the Checklist contains the CAP GHG reduction measures that projects are required to implement to ensure compliance with the CAP. Implementation of these measures would ensure that new development is consistent with relevant CAP strategies and measures and will contribute towards achieving the identified GHG reduction targets. Projects that are consistent with the CAP, as determined using this Checklist, may rely on the CAP for the cumulative impacts analysis of GHG emissions under CEQA.

A project's incremental contribution to cumulative GHG emissions may be determined to not be cumulatively considerable if it is determined to be consistent with the CAP. As specified in the CEQA Guidelines, the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the project's incremental effects are "cumulatively considerable" (CCR, Title 14, Division 6, Chapter 3, Section 15064[h][4]). Projects requiring discretionary review that cannot demonstrate consistency with the CAP using this Checklist may have a cumulatively considerable contribution to a significant cumulative impact and would be required to prepare a separate, more detailed project-level GHG analysis as part of the CEQA document prepared for the project.

## Checklist Applicability

This Checklist only applies to development projects that require discretionary review and are subject to environmental review (i.e., not statutorily or categorically exempt projects) pursuant to CEQA. Projects that are limited to ministerial review and approval (e.g., only building permits) would not be subject to the Checklist. The CAP contains other measures that, when implemented, would apply broadly to all ministerial and discretionary projects. These measures are included for discretionary projects in this Checklist, but could also apply more broadly once the County takes action to codify specific requirements or standards.

## Checklist Procedures

General procedures for Checklist compliance and review are described below. Specific guidance is also provided under each of the questions under Steps 1 and 2 of the Checklist in subsequent pages.

1. The County's Department of Planning & Development Services (PDS) reviews development applications and makes determinations regarding environmental review requirements under CEQA. Procedures for CEQA can be found on the County's [Process Guidance & Regulations/Statutes Homepage](#). The Director of PDS will determine whether environmental review is required, and if so, whether completion of the CAP Checklist is required for a proposed project or whether a separate project-level GHG analysis is required.
2. The specific applicable requirements outlined in the Checklist shall be required as a condition of project approval.
3. The project must provide substantial evidence that demonstrates how the proposed project will implement each applicable Checklist requirement described herein to the satisfaction of the Director of PDS.
4. If a question in the Checklist is deemed not applicable (N/A) to a project, substantial evidence shall be provided to the satisfaction of the Director of PDS demonstrating why the Checklist item is not applicable. Feasibility of reduction measures for new projects was assessed in development of the

CAP and measures determined to be feasible were incorporated into the Checklist. Therefore, it is expected that projects would have the ability to comply with all applicable Checklist measures.

5. Development projects requiring discretionary review that cannot demonstrate consistency with the CAP using this Checklist shall prepare a separate, project-level GHG analysis as part of the CEQA document prepared for the project and may be required to prepare an Environmental Impact Report (EIR). Guidance for project-specific GHG Technical Reports is outlined in the Report Format and Content Requirements for Climate Change document, provided under separate cover. The Report Format and Content Requirements document provides guidance on the outline and content of GHG analyses for discretionary projects processed by PDS that cannot show compliance with the CAP Checklist.

## Checklist Updates

The Guidelines and Checklist may be administratively updated by the County from time to time to comply with amendments to State laws or court directives, or to remove measures that may become mandatory through future updates to State or local codes. Administrative revisions to the Guidelines and Checklist will be limited to changes that do not trigger a subsequent EIR or a supplement to the SEIR for the CAP pursuant to CEQA Guidelines Section 15162. Administrative revisions, as described above, will not require approval by the Board of Supervisors (Board). All other changes to the Guidelines and Checklist require Board approval.

Comprehensive updates to the Guidelines and Checklist will be coordinated with each CAP update (i.e., every five years beginning in 2025) and would require Board approval. Future updates of the CAP, Guidelines, and Checklist shall comply with CEQA.

## Application Information

### Contact Information

Project No. and Name: \_\_\_\_\_  
Property Address and APN: \_\_\_\_\_

Applicant Name and Co.: \_\_\_\_\_

Contact Phone: \_\_\_\_\_ Contact Email: \_\_\_\_\_

Was a consultant retained to complete this checklist?  Yes  No

If Yes, complete the following:

Consultant Name: \_\_\_\_\_ Contact Phone: \_\_\_\_\_

Company Name: \_\_\_\_\_ Contact Email: \_\_\_\_\_

### Project Information

1. What is the size of the project site (acres [gross and net])? \_\_\_\_\_

2. Identify all applicable proposed land uses (indicate square footage [gross and net]):

Residential (indicate # of single-family dwelling units): \_\_\_\_\_

Residential (indicate # of multi-family dwelling units): \_\_\_\_\_

Commercial (indicate total square footage [gross and net]): \_\_\_\_\_

Industrial (indicate total square footage [gross and net]): \_\_\_\_\_

Agricultural (indicate total acreage [gross and net]): \_\_\_\_\_

Other (describe): \_\_\_\_\_

3. Provide a description of the project proposed. This description should match the project description used for the CEQA document. The description may be attached to the Checklist if there are space constraints.

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# CAP Consistency Checklist Questions

## Step 1: Land Use Consistency

For projects that are subject to CAP consistency review, the first step in determining consistency is to assess the project’s consistency with the growth projections used in the development of the CAP. This section allows the County to determine a project’s consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
<p>1. Is the proposed project consistent with the existing General Plan regional category, land use designations, and zoning designations?</p> <p>If <b>“Yes,”</b> provide substantiation below and then proceed to Step 2 (CAP Measures Consistency) of the Checklist.</p> <p>If <b>“No,”</b> proceed to question 2 below.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Project Detail: Please substantiate how the project satisfies question 1.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		
<p>2. Does the project include a land use element and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?</p> <p>If <b>“Yes,”</b> the project must provide estimated project GHG emissions under both existing and proposed designation(s) for comparison to substantiate the response and proceed to Step 2 (CAP Measures Consistency) of the Checklist.</p> <p>If <b>“No,”</b> (i.e., the project proposes an increase in density or intensity above that which is allowed under existing General Plan designations and consequently would not result in an equivalent or less GHG-intensive project when compared to the existing designations), the project must prepare a separate, more detailed project-level GHG analysis. As outlined in the County’s Guidelines for Determining Significance for Climate Change and Report Format and Content Requirements for Climate Change, this analysis must demonstrate how the project would offset the increase in GHG emissions over the existing designations or baseline conditions. The project must also incorporate each of the CAP measures identified in Step 2 to mitigate cumulative GHG emissions impacts. Proceed and complete a separate project-specific GHG analysis and Step 2 of the Checklist. Refer to Section 4 of the County’s Guidelines for procedures on analyzing General Plan Amendments.</p>	<input type="checkbox"/>	<input type="checkbox"/>
<p>Project Detail: Please substantiate how the project satisfies question 2.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		



## Step 2: CAP Measures Consistency

The second step of the CAP consistency review is to review and evaluate a project’s consistency with the applicable measures of the CAP. Each checklist item is associated with a specific GHG reduction measure(s) in the County CAP.

Step 2: CAP Measures Consistency				
Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
<b>Step 2A: Project Operations</b> (All projects with an operational component must fill out this portion of the Checklist)				
<b>Reducing Vehicle Miles Traveled</b>				
<p>1a. Reducing Vehicle Miles Traveled</p> <p><u>Non-Residential:</u> For non-residential projects with anticipated tenant-occupants of 25 or more, will the project achieve a 15% reduction in emissions from commute vehicle miles traveled (VMT), and commit to monitoring and reporting results to demonstrate on-going compliance? VMT reduction may be achieved through a combination of Transportation Demand Management (TDM) and parking strategies, as long as the 15% reduction can be substantiated.</p> <p>VMT reduction actions though TDM may include, but are not limited to:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Telecommuting</li> <li><input type="checkbox"/> Car Sharing</li> <li><input type="checkbox"/> Shuttle Service</li> <li><input type="checkbox"/> Carpools</li> <li><input type="checkbox"/> Vanpools</li> <li><input type="checkbox"/> Bicycle Parking Facilities</li> <li><input type="checkbox"/> Transit Subsidies</li> </ul> <p>Shared and reduced parking strategies may include, but are not limited to:<sup>1</sup></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Shared parking facilities</li> <li><input type="checkbox"/> Carpool/vanpool-only parking spaces</li> <li><input type="checkbox"/> Shuttle facilities</li> <li><input type="checkbox"/> Electric Vehicle-only parking spaces</li> </ul> <p>The project may incorporate the measures listed above, and propose additional trip reduction measures, as long as a 15% reduction in emissions from commute VMT can be demonstrated through substantial evidence.</p> <p>Check “N/A” if the project is a residential project or if the project would not accommodate more than 25 tenant-occupants.</p>	T-2.2 and T-2.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p>1b. Project Detail: Please substantiate how the project satisfies question 1a.</p> <hr/> <hr/> <hr/> <hr/>				

<sup>1</sup> Reduction actions and strategies under 1a may be used to achieve a 10% reduction in emissions from commute VMT under 2a

**Step 2: CAP Measures Consistency**

Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
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**Shared and Reduced Parking**

2a. Shared and Reduced Parking

Non-Residential: For non-residential projects with anticipated tenant-occupants of 24 or less, will the project implement shared and reduced parking strategies that achieves a 10% reduction in emissions from commute VMT?

Shared and reduced parking strategies may include, but are not limited to:

- Shared parking facilities
- Carpool/vanpool-only parking spaces
- Shuttle facilities
- Electric Vehicle-only parking spaces

Check "N/A" if the project is a residential project or if the project would accommodate 25 or more tenant-occupants.

T-2.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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2b. Project Detail:

Please substantiate how the project satisfies question 2a.

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**Water Heating Systems**

3a. Electric or Alternately-Fueled Water Heating Systems

Residential: For projects that include residential construction, will the project, as a condition of approval, install the following types of electric or alternately-fueled water heating system(s)? Please check which types of system(s) will be installed:

- Solar thermal water heater
- Tankless electric water heater
- Storage electric water heaters
- Electric heat pump water heater
- Tankless gas water heater
- Other

Check "N/A" if the project does not contain any residential buildings.

E-1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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3b. Project Detail:

Please substantiate how the project satisfies question 3a.

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**Step 2: CAP Measures Consistency**

Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
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**Water-Efficient Appliances and Plumbing Fixtures**

4a. Water Efficient Appliances and Plumbing Fixtures

Residential: For new residential projects, will the project comply with all of the following water efficiency and conservation BMPs<sup>2</sup>?

- Kitchen Faucets: The maximum flow rate of kitchen faucets shall not exceed 1.5 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.5 gallons per minute at 60 psi<sup>3</sup>.
- Energy Efficient Appliances: Install at least one qualified ENERGY STAR dishwasher or clothes washer per unit.

W-1.1




Check "N/A" if the project is a non-residential project.

4b. Project Detail:

Please substantiate how the project satisfies question 4a.

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**Rain Barrel Installations**

5a. Rain Barrel Installations

Residential: For new residential projects, will the project make use of incentives to install one rain barrel per every 500 square feet of available roof area?

Check "N/A" if the project is a non-residential project; if State, regional or local incentives/rebates to purchase rain barrels are not available; or if funding for programs/rebates has been exhausted.

W-2.1




5b. Project Detail:

Please substantiate how the project satisfies question 5a.

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<sup>2</sup> CALGreen Tier 1 residential voluntary measure A4.303 of the [California Green Building Standards Code](#).

<sup>3</sup> Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.

**Step 2: CAP Measures Consistency**

Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
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**Reduce Outdoor Water Use**

6a. Reduce Outdoor Water Use

Residential: Will the project submit a Landscape Document Package that is compliant with the County’s Water Conservation in Landscaping Ordinance<sup>4</sup> and demonstrates a 40% reduction in current Maximum Applied Water Allowance (MAWA) for outdoor use?

Non-Residential: Will the project submit a Landscape Document Package that is compliant with the County’s Water Conservation in Landscaping Ordinance and demonstrates a 40% reduction in current MAWA for outdoor use?

Check “N/A” if the project does not propose any landscaping, or if the aggregate landscaped area is between 500 – 2,499 square feet and elects to comply with the Prescriptive Compliance Option within the Water Conservation in Landscaping Ordinance.

W-1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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6b. Project Detail:

Please substantiate how the project satisfies question 6a.

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**Agricultural and Farming Operations<sup>5</sup>**

7a. Agricultural and Farming Equipment

Will the project use the San Diego County Air Pollution Control District’s (SDAPCD’s) farm equipment incentive program to convert gas- and diesel-powered farm equipment to electric equipment?

Check “N/A” if the project does not contain any agricultural or farming operations; if the SDAPCD incentive program is no longer available; or if funding for the incentive program has been exhausted.

A-1.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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7b. Project Detail:

Please substantiate how the project satisfies question 7a.

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<sup>4</sup> <http://www.sandiegocounty.gov/content/dam/sdc/cob/ordinances/ord10427.pdf>.

<sup>5</sup> Existing agricultural operations would not be subject to questions 7 and 8 of the Checklist, unless a proposed expansion is subject to discretionary review and requires environmental review pursuant to CEQA.

**Step 2: CAP Measures Consistency**

Checklist Item (Check the appropriate box and provide an explanation for your answer)	CAP Measure	Yes	No	N/A
<p>8a. Electric Irrigation Pumps</p> <p>Will the project use SDAPCD's farm equipment incentive program to convert diesel- or gas-powered irrigation pumps to electric irrigation pumps?</p> <p>Check "N/A" if the project does not contain any agricultural or farming operations; if the SDAPCD incentive program is no longer available; or if funding for the incentive program has been exhausted.</p>	A-1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8b. Project Detail:  
Please substantiate how the project satisfies question 8a.

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**Tree Planting**

<p>9a. Tree Planting</p> <p><u>Residential</u>: For residential projects, will the project plant, at a minimum, two trees per every new residential dwelling unit proposed?</p> <p>Check "N/A" if the project is a non-residential project.</p>	A-2.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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9b. Project Detail:  
Please substantiate how the project satisfies question 9a.

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