GLOBAL CLIMATE CHANGE

Smilax 62 Unit Development Plan
APN 217-191-02 and APN 217-191-03
County of San Diego, CA

Lead Agency:

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EXECUTIVE SUMMARY

This analysis 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 SB32. Greenhouse Gases (GHGs) analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify GHG calculations, both CH_4 and N_2O are converted to equivalent amounts of CO_2 and are identified as carbon dioxide equivalent (CO_2e).

The Project known as "Smilax" envisions providing a total of 62 attached condominiums on approximately 4.9 acres located at 425 Smilax Road (APN 217-191-02) and the parcel adjacent to the south (APN 217-191-03) in the North County Metropolitan Subregional Plan Area within unincorporated San Diego County. The Project site is located to the west of Smilax Road approximately 600 feet south of the intersection of Mimosa Avenue and Smilax Road.

All construction phases of the proposed Project are anticipated to start in 2021 and completion is expected in early 2022.

Project design features (PDFs) have been included in this Project. The applicant has agreed to implement all PDFs and PDFs will be included in the Project's Conditions of Approval. The following PDFs would reduce project emissions of GHGs, and, unless noted otherwise, were quantified within this analysis to identify reductions in GHG emissions through implementation:

1. Project-related construction equipment shall use Tier 4 construction equipment, as defined by United States Environmental Protection Agency (EPA) (EPA, 2018)/ California Air Resources Board (CARB) standards (CARB, 2012).
2. The Project will utilize architectural coatings compliant with San Diego Air Pollution Control District (SDAPCD) Rule 67 (SDAPCD, 2015).
3. The Project shall install high-efficiency Light Emitting Diode (LED) street and area lighting to achieve reduction in overall lighting energy.
4. The Project will not install wood burning or natural gas burning hearth options in all 62 residential units.
5. The Project will be designed to use 100 percent electric energy for all Project operations. Natural gas lines will not be installed onsite.
6. In accordance with the California Integrated Waste Management Act (AB 939), and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas onsite for storage and collection of recyclables and green waste which would be collected and processed offsite ensuring that both recyclables and organics such as green waste can be substantially diverted from landfills. As part of the homeowner disclosure forms, the Project would also

and provide literature promoting recycling and green waste management to achieve waste diversion.

7. The Project shall install weather-based irrigation systems in common areas would be installed that would include rain sensing timers. This PDF was not quantified within this analysis but would reduce GHG emissions associated with water consumption.
8. The Project applicant will be required to comply with the County's Water Conservation in Landscaping Ordinance and submit a Landscape Document Package demonstrating a 40 percent reduction in outdoor water use.
9. The Project shall install low flow indoor water fixtures in all residential units to achieve a 20 percent reduction in flow.
10. The Project will plant 124 trees within the project site.
11. The Project shall install a single Level 2 electric vehicle (EV) charging stations within each of the 62 residential unit garages. This PDF was not quantified within this analysis but would reduce GHG emissions associated with mobile sources.
12. The Project shall install two Level 2 EV Charging stations within the visitor parking area onsite. This PDF was not quantified within this analysis but would reduce GHG emissions associated with mobile sources.
13. The Project will install 3 kilowatts (kW) of photovoltaic (PV) solar for each residential unit for a total of 186 kW or 620 300-watt panels or an average of 10 PV panels per residential unit.

The Project was analyzed using a Project Specific approach for consistency with SB 32. Based on this approach, a Project-specific efficiency threshold was determined using local data to demonstrate consistency with State reduction targets in 2030. The project would be considered to not generate significant GHGs if it is found to generate fewer than 3.5 MT CO_2e per person. This per capita efficiency threshold is based on the 2030 estimated emissions in the unincorporated County, reductions needed to demonstrate consistency with State targets, and the population growth by 2030 identified by the County. Under this Project Specific locally appropriate efficiency-based threshold, the Project would generate 393 MT CO_2e annually, with both annualized construction and annual operations GHG emissions. The proposed Project would have a projected population of 177 persons in 2030 which would yield a 2.2 MT CO_2e per person annual GHG generation (393 MT CO_2e/177 persons). Based on this, the proposed Project would generate fewer emissions than a County-specific localized efficiency metric of 3.5 MT CO_2e per person. Given this, the Project would generate a less than significant impact on the environment and would also have a less than significant impact under CEQA.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this GHG assessment is to provide documentation in support of the County's CEQA compliance requirement. The proposed Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines which are (14 CCR 15000 et seq.):

1. Will the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

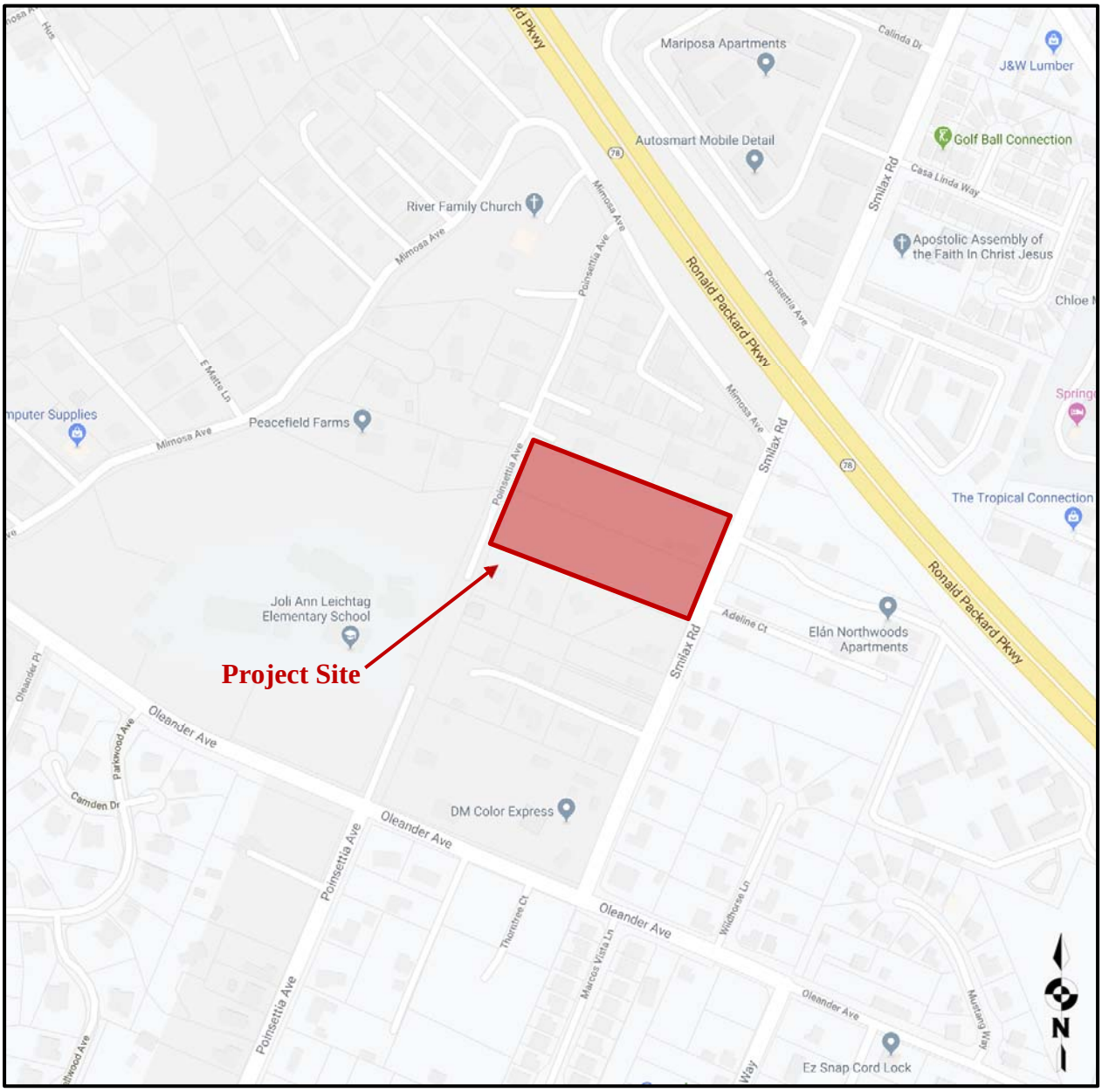
1.2 Project Location

The Project site is located on a 4.9 acre site located at 425 Smilax Road (APN 217-191-02) and the parcel adjacent to the south (APN 217-191-03) in the North County Metropolitan Subregional Plan Area within unincorporated San Diego County. The Project site is located to the west of Smilax Road roughly 600 feet south of the intersection of Mimosa Avenue and Smilax Road. Access would be provided by a 24-foot wide private street connecting to Smilax Road and a gated secondary emergency access road connecting to Poinsettia Avenue. A general Project vicinity map is shown in Figure 1-A of this report.

1.3 Project Description

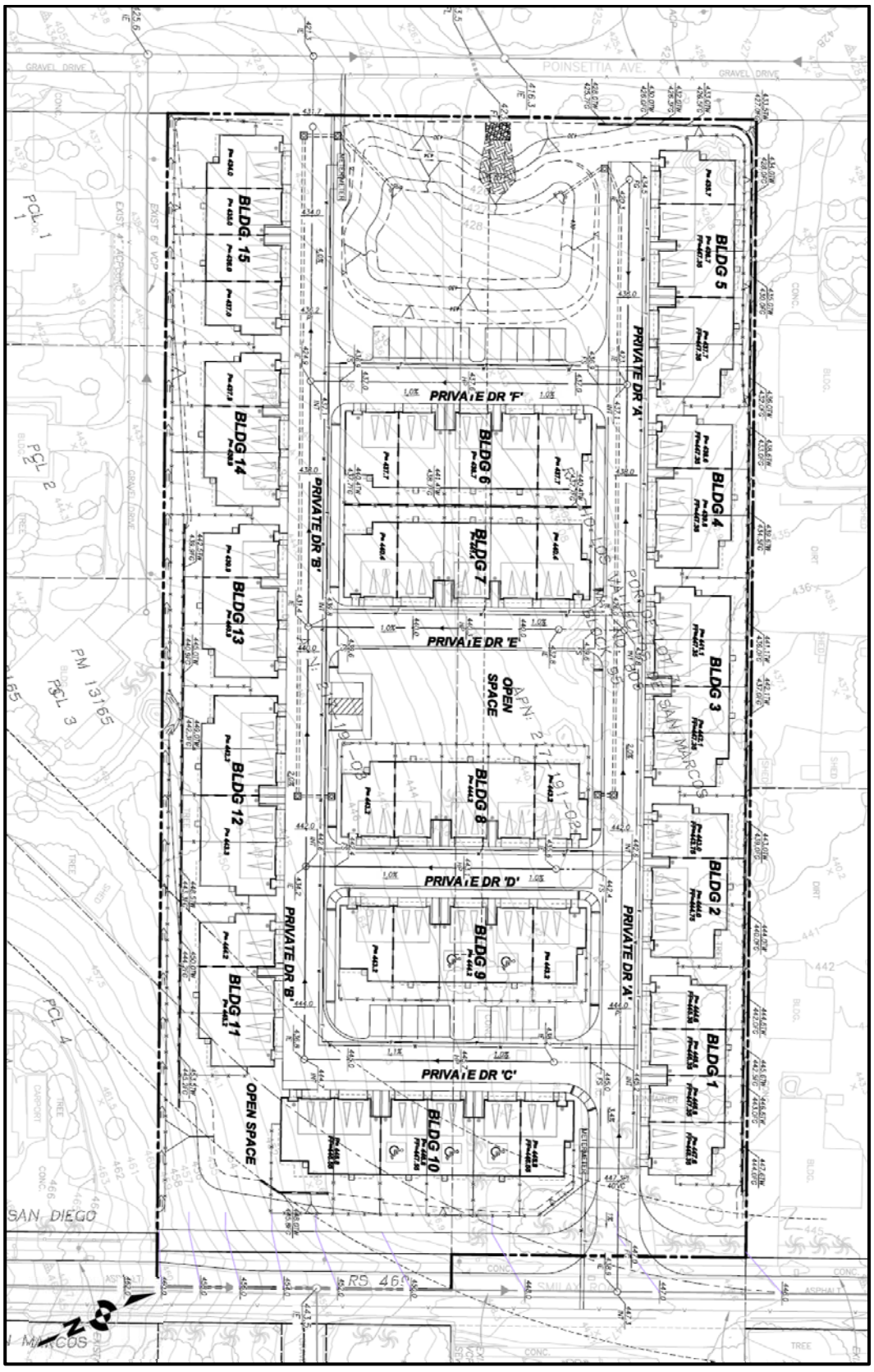
The Project envisions providing 62 multi-family residential units which would be spread among 15 two story buildings. Each building would contain between three and five condominium units and each unit would have a two-car garage. The Project would provide a total of 147 parking spaces including 124 garage parking spaces (two per unit) and 23 open parking spaces for use by residents and visitors. The Project would also include two common open space areas, including a turf dog park in the southeastern corner of the Project site and a larger active use area located in the middle of the development. The larger active use area would include a tot lot (play equipment and benches), an open play area, a BBQ, and a shaded trellis. Construction of the Project is expected to begin in 2021 with completion expected in 2022. The proposed Project would include the demolition of a single-family house and a garage with a combined area of approximately 3,000 Square Foot (SF). The Project site plan is shown in Figure 1-B.

Figure 1-A: Project Vicinity Map



Source: (Google, 2019)

Figure 1-B: Proposed Project Site Layout



Source: (Hunsaker and Associates, 2019)

The site is subject to the General Plan Village Regional Category, Village Residential 2 (VR-2) Land Use Designation. The Project would require a General Plan Amendment (GPA) to amend the General Plan Land Use Designation from VR-2 to Village Residential 15 (VR-15). The VR-15 designation would allow for a residential density of 15.0 dwelling units per acre (du/ac). The Mobility Element road network currently has Smilax Road turning to the southwest from its current alignment through the Project site (and through the residential properties to the south). In addition, the Project would require a Zoning Reclassification (Rezone) to change the Use Regulation from RR to Multi-Family Residential (RM) and building type from "C"-Single Detached only to "K" to allow for multi dwelling units. The Rezone would also add the "D" Design Review Special Area Designator to ensure the proposed structures and development of the site would complement the surrounding areas and existing development pursuant to Section 5900 et. al of the Zoning Ordinance.

1.4 Project Design Features

Project design features are included to reduce environmental impacts and can be specific to non GHG efficiencies. For purposes of this GHG analysis only GHG specific design measures have been included. Therefore, not all Project related design features are discussed within this analysis. This report will define specifically which design features were included within GHG estimation software and the applicant has committed to including the design features included within GHG emissions modeling as a requirement for the Project to implement, regardless of whether they are included as a part of the Project's conditions of approval. Project design features directly affecting greenhouse gas emissions and included in modeling (unless otherwise indicated) include:

1. Project-related construction equipment shall use Tier 4 construction equipment, as defined by United States Environmental Protection Agency (EPA) (EPA, 2018)/ California Air Resources Board (CARB) standards (CARB, 2012).
2. The Project will utilize architectural coatings compliant with San Diego Air Pollution Control District (SDAPCD) Rule 67 (SDAPCD, 2015).
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The Project will also include design features that could result in additional operational GHG emissions reductions that are not quantified within this report. Since modeling results would not be dependent on installation of these design features, they were not incorporated in this analysis. These design features are discussed in detail below and the applicant has committed to implementation of these features regardless of whether they are conditions of approval from the County.

- Landscaped and screened parking areas consistent with the County's Parking Design Manual, including Section 7 (Landscaping) and the "cool parking" mitigation requirements identified by CARB.
- Building efficiency features such as High-Efficiency Heating Ventilation and Air Conditioner HVAC system, sealed (tight) air ducts that minimize heating and cooling HVAC losses, tankless water heaters and Low emissivity dual pane windows.
- Incorporate into Project Covenants, Conditions & Restrictions (CC&Rs) requirements that the Homeowners Association (HOA) coordinate with SANDAG to provide informational materials on rideshare programs such as iCommute San Diego.
- Short-term bicycle parking would be located at the main recreation area.

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding GHGs

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

Over the years, scientists have measured a rise in carbon dioxide and the general consensus is that human activities contribute to the heating of the planet. Other GHGs, such as methane and nitrous oxide, also contribute to global warming.

GHGs of concern, as analyzed in this study, are CO_2, CH_4, and N_2O. Both CH_4 and N_2O are converted to an equivalent amount of CO_2, referred to as CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). The latest California Emissions Estimator Model (CalEEMod 2016.3.2) developed by Breeze Software uses the Intergovernmental Panel on Climate Change (IPCC) 2007 report as source data for GWP factors for both CH_4 and N_2O (CAPCOA, September 2016), using the 100-year periods of 25 and 298, respectively (IPCC, 2007).

2.2 Climate

Climate within the San Diego Air Basin (SDAB) 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.

Meteorological trends within the area generally show daytime highs ranging between 67ºF in the winter to approximately 83ºF in the summer with August usually being the hottest month. Daytime Low temperatures range from approximately 44ºF in the winter to approximately 62ºF in the summer. Precipitation is generally about 13 inches per year (WRCC, 2016).

Prevailing wind patterns for the area vary during any given month during the year and also vary depending on the time of day or night. The predominant pattern though throughout the year is usually from the west or westerly (WRCC, 2018).

2.3 Existing Setting

The site is subject to the General Plan Village Regional Category VR-2 Land Use Designation, and RR Zoning Regulations. Land uses surrounding the Project mostly include single family residential. The Project is also located adjacent to the northeast side of the Joli Ann Leichtag Elementary School. Elevations at the northwestern tip of the Project are 429 feet above mean sea level (MSL) and at the southeastern elevations are 560 feet above MSL.

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Federal

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

3.2 State

State Greenhouse Gas Targets

Executive Order S-3-05

Executive Order (EO) S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and regulations necessary to achieve the GHG emissions reduction mandate of AB 32. Therefore, in furtherance of AB 32, CARB adopted regulations requiring the reporting and verification of GHG emissions from specified sources, such as industrial facilities, fuel suppliers and electricity importers (see Health & Safety Code Section 35830; Cal. Code Regs., tit. 17, §§95100 et seq.). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) in accordance with Health and Safety Code Section 38561. The *Scoping Plan* established an overall framework for the measures that will be implemented to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The 2008 *Scoping Plan* evaluated opportunities for sector-specific reductions, integrated all CARB and Climate Action Team[1] early actions and additional GHG reduction features by both entities, identified additional measures to be pursued as regulations, and outlined the role of a cap-and-trade program. The key elements of the 2008 *Scoping Plan* include the following (CARB, 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33 percent
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard

[1] The Climate Action Team is comprised of state agency secretaries and heads of state agencies, boards and departments; these members work to coordinate statewide efforts to implement GHG emissions reduction programs and adaptation programs.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the 2008 *Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the *Scoping Plan's* Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations (CARB, 2011). Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level projection was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update*). The stated purpose of the *First Update* was to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identified key

recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the *First Update*, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, CARB recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

In November 2017, CARB released *California's 2017 Climate Change Scoping Plan* (*Second Update*) for public review and comment (CARB, 2017). This update proposes CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below). The strategy includes continuing the Cap-and-Trade Program through 2030[2], inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health.

When discussing project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." However, the *Second Update* also recognizes that such an achievement "may not be feasible or appropriate for every project … and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA." CARB's Governing Board adopted the *Second Update* in December 2017.

[2] In July 2017, AB 398 was enacted into law, thereby extending the legislatively-authorized lifetime of the Cap-and-Trade Program to December 31, 2030.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim goal of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's *Scoping Plan* to express the 2030 target in terms of MMT CO_2e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership, and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies.

AB 197 also added two members of the Legislature to CARB as nonvoting members. The legislation further requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and identify specific information for GHG emissions reduction measures when updating the scoping plan, including information regarding the range of projected GHG emissions and air pollution reductions that result from each measure and the cost-effectiveness (including avoided social costs) of each measure (see Health & Safety Code Section 38562.7).

EO B-55-18

In 2018, the Governor expanded upon EO S-3-05 by issuing Executive Order B-55-18 and creating a statewide goal of carbon neutrality by 2045. EO B-55-18 identifies the California Air Resources Board as the lead agency to develop a framework for implementation and progress tracking toward this goal. It should be noted that consistency with a statewide

carbon neutrality target by 2045 represents the Governor's policy goal but is not required to make a significance determination. The state has already determined that 80% below 1990 levels by 2050 is a long-term target that represents California's share of emissions reductions to stabilize and limit global warming and "avoid dangerous climate change". EO B-30-15 sets forth the 2050 target endorsed by the Intergovernmental Panel on Climate Change's finding and notes that the state's 2050 target will "attain a level of emissions necessary to avoid dangerous climate change" because it may limit global warming to 2 degrees Celsius by 2050.

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new buildings and alterations or additions to existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2016 Title 24 standards, which went into effect on January 1, 2017, are the currently applicable standards. When comparing the 2013 and 2016 standards for electrical consumption, it is expected that low-rise, single-family detached homes and multi-family homes would use 12 percent and 15 percent less electricity under the 2016 standards, respectively. Similarly, implementation of the 2016 standards is expected to reduce natural gas consumption by 21 percent in single-family homes and 31 percent in multi-family homes. Newly constructed non-residential buildings are estimated to achieve a 5 percent reduction in electricity consumption under the 2016 standards and no significant change relative to natural gas consumption (California Energy Commission, 2015). The current version of CalEEMod used in this analysis employs, as a default parameter, the 2016 Title 24 standards to estimate GHG emissions.

The Project would be required, at a minimum, to comply with the latest version of Title 24 standards at the time the Project seeks building permits. This will likely be the 2019 standards, as those standards went into effect on January 1, 2020. The 2019 standards improve upon the 2016 standards for residential and nonresidential buildings. One of the

most notable changes in the 2019 standards is the requirement for the installation of rooftop solar on residential buildings (California Energy Commission, 2017). It should be noted that the State updates these regulations every three years. Thus, throughout Project construction, buildings will need comply with the most recently adopted standards.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CalGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CalGreen standards initially took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CalGreen 2019 standards became effective on January 1, 2020. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- Sixty-five (65) percent of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of EV charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CalGreen standards for residential uses include mandatory measures primarily for water and energy efficiency (CBSC, 2019). The project would be required to utilize the latest CalGreen standards.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air

conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent (CARB, Clean Car Standards - Pavley, Assembly Bill 1493, 2017).

EO S-1-07

Issued in January 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

In 2018, CARB extended and expanded the Low Carbon Fuel Standard regulations to include a 20 percent target for reduction in carbon intensity by 2030.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible and if implemented, the GHG reduction targets. If a SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for SANDAG adopted in 2010 are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035; the targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005.

In October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*, which contains the region's current SCS. In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035. SANDAG is in the process of preparing its next SCS, which will consider whether and how the region could attain these reduction targets.

Safer Affordable Fuel-Efficient Vehicle Rule

In August 2019, the U.S. EPA and the National Highway Traffic Safety Administration (NHSTA) jointly published a notice of the proposed rulemaking for the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule). The SAFE Vehicles Rule proposes amended Corporate Average

Fuel Economy (CAFE) and Light-Duty Vehicle Greenhouse Gas Emissions Standards. This Notice of Proposed Rulemaking (NPRM) was the first formal step in setting the 2021-2026 Model Year (MY) standards that must be achieved by each automaker for its car and light-duty truck fleet (US EPA, 2018). Part One of the SAFE Rule withdrew the State of California's waiver, afforded under the CAA to set GHG and zero-emissions vehicle (ZEV) standards separate from the federal government and became effective in November 2019. In March 2020, Part Two of the SAFE Rule was published which set amended fuel economy and CO_2 standards for Passenger Cars and Light Trucks for model years 2021 through 2026. (US EPA, 2020).

The SAFE Rule relaxed federal greenhouse gas emissions and CAFE standards to increase in stringency at only about 1.5 percent (%) per year from model year (MY) 2020 levels over MYs 2021–2026. The previously established emission standards and related "augural" fuel economy standards would have achieved about 4% per year improvements through MY 2025.

CARB has prepared off-model adjustment factors for the Emissions Factors model (EMFAC) to account for the Final SAFE Rule. These adjustment factors account for changes in criteria pollutant estimates from mobile sources for NO_2, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and carbon monoxide (CO). Similar adjustment factors were developed by CARB for CO_2 and are applied in this analysis to account for the potential changes to estimate vehicle GHG emissions as a result of the SAFE Rule (CARB, 2020).

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017). To improve air quality, CARB also has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that, in 2025, cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, also has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025 (CARB, 2012).

The Zero Emission Vehicle (ZEV) program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEVs) in the 2018 to 2025 model years (California Air Resources Board, 2017). PHEVs contain both an internal combustion engine and an electric

motor, which is powered by batteries. As defined by CARB, ZEVs includes PHEVs, Battery Electric Vehicles (BEV) and Fuel Cell Electric Vehicles (FCEV). The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market. In the context of this report, "EV" is used to refer to all types of electric, and low- or zero-emission vehicles.

As of the publication date of this report, FCEVs are not common in the San Diego region due to limited refueling capabilities. Based on information obtained from the California Fuel Cell Partnership, only one hydrogen fuel station (located in the City of Del Mar) exists in San Diego County. At this time, one station is planned for construction in the City of San Diego sometime in the future. (California Fuel Cell Partnership, 2017). Therefore, for purposes of this analysis, only BEVs and PHEVs are referenced when ZEVs are discussed. If FCEVs gain traction in San Diego, additional GHG reductions would be realized.

EO B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor has called for as many as 1.5 million EV by 2025 and up to five million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

AB 1236

AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill requires local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that creates an expedited and streamlined permitting process for electric vehicle charging stations, as specified. In August 2016, the County Board of Supervisors adopted Ordinance No. 10437

adding a section to its County Code related to the expedited processing of electric vehicle charging stations permits consistent with AB 1236.

SB 350

In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Renewable Energy Procurement

SB 1078

SB 1078 (2002) established the Renewables Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350

SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 100

SB 100 (2018) has further accelerated and expanded the RPS, requiring achievement of a 50 percent RPS by December 31, 2026 and a 60 percent RPS by December 31, 2030. SB 100 also established a new statewide policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Water

EO B-29-15

In response to drought-related concerns, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority

strategies that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by 1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and 2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle, 2018). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO_2 and CH_4) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

3.3 Local Regulations

County of San Diego General Plan

The County's General Plan Update (approved in 2011) provides smart growth and land use planning principles designed to reduce GHG emissions. GHG reduction policies are addressed within multiple elements of the General Plan Update. The strategies for reduction of GHG emissions in the General Plan Update include reducing vehicle miles traveled (VMT), energy consumption, water consumption and solid waste. The General Plan Update also discusses the increased generation and use of renewable energy sources to reduce non-renewable electrical and natural gas energy consumption.

County of San Diego Climate Action Plan (CAP)

In February 2018, the County's Board of Supervisors adopted a CAP that serves as a long-term programmatic plan that identifies strategies and measures to meet the County's targets to reduce GHG emissions by 2020 and 2030, consistent with the State's legislative GHG reduction targets, and demonstrates progress towards the State's 2050 GHG reduction goal (County of San Diego, 2017). The Board's adoption of the CAP is the culmination of a multi-year plan development process that followed from the judicial invalidation (see Sierra Club v. County of San Diego (Case No. D064243)) of the County's prior CAP, which was adopted in 2012.

In March 2018, several petitioners filed a lawsuit against the County. In December 2018, the San Diego County Superior Court issued a writ ordering the approval of the CAP and its SEIR to be set aside. In January 2019, the County appealed the San Diego County Superior Court's ruling, but the Fourth District Court of Appeal, Division One (Case No. D075478) upheld the trial Superior Court's ruling. Accordingly, there is no approved CAP in San Diego and the CAP

cannot be used as a threshold of significance until such time as it is reapproved in compliance with CEQA.

3.4 Framework for CEQA Analysis

Appendix G of the CEQA Guidelines

Appendix G of the CEQA Guidelines was revised December 28, 2018. According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact related to GHGs if it would:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.*
2. *Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.*

For purposes of this analysis, the two Appendix G checklist questions set forth above are utilized as the thresholds of significance when evaluating the environmental effects of the project's GHG emissions. In applying these thresholds, reference is made to CEQA Guidelines Section 15064.4(b)(1)-(3), as described above.

Project-Specific Efficiency Threshold

A project-specific efficiency threshold analysis was prepared for the proposed Project. This Project's significance determination used the criteria contained in CEQA Guidelines Appendix G, (informed by CEQA Guidelines Section 15064.4) and mitigation strategies (informed by CEQA Guidelines Section 15126.4(c))[3]. As such, the Project uses a Project-specific threshold and analysis for determining whether the Project's GHG emissions would significantly impact the environment.

A number of air districts in the State of California such as the Bay Area Air Quality Management District (BAAQMD, 2017) and Placer County Air Pollution Control District (PCAPCD, 2016)[4]

[3] Individual projects may be approved using thresholds developed on a project-by-project basis. While lead agencies can adopt a significance threshold for general use pursuant to CEQA Guidelines§ 15064.7, they can alternately determine a threshold on a project-by project basis, which is specifically allowed pursuant to CEQA Guidelines §§ 15064.7(b), 15064.4(a), 15064(b). Under the CEQA Guidelines, lead agencies have the discretion to determine the appropriate method for evaluating GHG emissions, based to the extent possible on scientific and factual data.

[4] BAAQMD project-level efficiency threshold is 4.6 $MTCO_2e$/service population/year is applicable to residential, commercial, industrial, and public land uses (BAAQMD, 2017) and Placer County applies a project-level efficiency threshold for residential projects of 4.5 $MTCO_2e$/capita/year in urban areas and 5.5 $MTCO_2e$/capita/year in rural areas (Placer County APCD, 2016)

have recommended or adopted efficiency metrics 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 residential population plus employment population which would be generated by a proposed project development. This efficiency metric is expressed as MT CO_2e per service population per year (MT CO_2e/year/service population). While a mixed use project has both residents and employees as part of its service population, a project with only a residential component tends to have only residents as part of its service population. Therefore, sometimes a residential project expresses its GHG efficiency in terms of GHG efficiency per Capita (PC) per year, instead of per service person (Project MT CO_2e/year/PC).

With the release of the 2017 Climate Change Scoping Plan Update, CARB recognized the need to balance population growth with emissions reductions and in doing so, provided a new local plan level methodology for target setting that provides consistency with state GHG reduction goals using per capita efficiency targets. These statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32. The targets are generated by dividing the statewide 2030 GHG emissions targets by the statewide 2030 service population.

CARB's 2017 Climate Change Scoping Plan identifies that the State's 2015 GHG emissions are approximately 440 million metric tons CO_2e ($MMTCO_2e$) and would need to be reduced to 260 $MMTCO_2e$ to achieve the goals of SB 32 by 2030 as shown in Table 3.1. Population within the State is expected to be 43,631,295 people in 2030 (California Department of Finance, 2016)) and the California employment numbers are expected to be 23,459,500 persons in 2030 per the California's 2017 Climate Change Scoping Plan (CARB, 2017). Based on this, a 2030 service population (population plus employment) of 67,090,795 would exist within the State.

Table 3.1: CARB's 2017 Climate Change Scoping Plan Emissions Targets

Emission Sectors	Estimated GHG Emissions in 2030	
	Range of Emissions in 2030 ($MMTCO_2e$) [1]	Emissions Estimate for Determining SP Efficiency Metric ($MMTCO_2e$) [2]
Agriculture	24-25	24
Commercial & Residential	38-40	38
Electrical Power	30-53	53
High GWP	8-11	11
Industrial	83-90	83
Recycling & Waste	8-9	8
Transportation	103-111	103
Cap and Trade Reductions	34-79	-60
Total GHG Emissions		**260**
Service Population (SP)		**67,090,795**

Notes: GHG = greenhouse gas; GWP = global warming potential; $MTCCO_2e$ = metric tons of carbon dioxide equivalent; SP = Service Population

[1] The low end of the sector range is the estimated emissions from the 2017 Scoping Plan and the high end adjusts the expected emissions by a risk factor that represents sector underperformance.

[2] Consistent with the 2017 Scoping Plan, the low end of the emissions range was used for all sectors except for Electrical Power and High GWP. The high end of the range was used for these two sectors.

In *Golden Door Properties LLC v. County of San Diego* (2018) 27 Cal. App. 5th 892, 904 the Court stated that a 4.9 MT $C0_2e$ per service population per year efficiency threshold in the County of San Diego was improper because "the service population number relies on statewide service population and GHG inventory data; it does not address San Diego County specifically, and it does not explain why using statewide data is appropriate for setting the metric for San Diego County. Additionally, the Efficiency Metric 'allows the threshold to be applied evenly to most project types,' but it does not account for variations between different types of development; nor does it explain why the per person limit would be appropriately evenly applied despite project differences."

While state and regional regulations of energy and transportation systems, along with the State's CAP and Trade Program, are designed to be set at limits to achieve most of the reductions needed to hit the State's long term targets[5], local government should do their fair share toward meeting the State's targets by siting and approving projects that accommodate population growth that are GHG-efficient.

[5] The Scoping Plan Scenario relies on "known commitments" to regulate energy and transportation systems and continued implementation of CAP and Trade program to achieve the state's 2030 targets. California's 2017 Climate Change Scoping Plan (CARB, 2017), Chapter 2. However, the scoping plan also encourages local governments to take GHG into account in local decision-making, including land use permitting decisions. California's 2017 Climate Change Scoping Plan (CARB, 2017), Chapter 5.

In the Scoping Plan Update, CARB suggested substantial progress could be made if a regional or community-wide GHG reduction plan targeted reducing emissions to 6 MT CO_2e per capita by 2030 and 2 $MTCO_2e$ per capita by 2050. Moreover, court holdings[6] provide guidance to lead agencies that in order to make a Project-specific efficiency threshold locally appropriate, one must use local data to establish an analytical path between the threshold and a project providing its fair share contribution towards meeting State targets using the project population's efficient generation of GHG.

Accordingly, a locally appropriate evidence-based Project-specific threshold based on an efficiency metric needs to use local emissions and local service population or per capita projections.

The Association of Environmental Professionals (AEP) Climate Change Committee recommends that CEQA GHG analysis evaluate project emissions in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation or EOs (AEP, 2016). Consistent with AEP Climate Change Committee recommendations, horizon year projects of 2021 or later, such as this Project, are analyzed in terms of whether the Project would impede "substantial progress" toward meeting the reduction goal identified in SB 32. As SB 32 is considered an interim target toward meeting the 2050 State goal, consistency with SB 32 would be considered contributing substantial progress toward meeting the State's long-term State targets is important as these targets have been set at levels that reduce California's fair share of emissions toward international targets that will stabilize global climate change effects and avoid the adverse environmental consequences described herein.

Local Data

The County prepared a GHG inventory funded through the County's Local Government Partnership with San Diego Gas and Electric (SDG&E). This inventory was used to forecast emissions generated by countywide activities and identify GHG reduction targets based on these forecasts that are consistent with meeting the State reduction target in 2030 and reduction goal in 2050. During preparation of the County's baseline emissions inventory, the University of San Diego's Energy Policy Initiatives Center (EPIC) calculated GHG emissions for the County for both community-wide sectors and County government operations for the year

[6] Golden Door Properties, LLC v. County of San Diego (2018); (Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Ranch (2015)

2014, with emissions Projections for 2030 and 2050[7]. EPIC concluded that total emissions in the County of San Diego in 2014 comprised approximately 3,211,505 MT CO_2e (University of San Diego's Energy Policy Initiatives Center (EPIC, 2014).

Based on SB 32 and the Scoping Plan's recommendation, a 40 percent reduction from the baseline year GHG emissions in the County of San Diego would total approximately 1,926,903 MT CO_2e/year. Thus, the total 2030 GHG emission target for the County would be 1,926,903 MT CO_2e/year.

The San Diego Association of Governments (SANDAG), San Diego's regional planning agency, projects and estimates population for all jurisdictions in the San Diego region (SANDAG, Data Surfer, 2019). The population and civilian jobs in 2030 are interpolated based on SANDAG Series 13 projection year 2020 and Projection year 2035. The population used in this analysis is the Unincorporated County population of County residents, which in 2030 is 551,712.

The proposed Project is residential only and therefore a per Capita methodology and threshold is appropriate. In order to achieve a County emission level of 1,926,903 MT CO_2e based on the reductions needed per SB 32, the required per capita efficiency target in 2030 would be 3.5 MT CO_2e per person (1,926,903 MTCO_2e/551,712 persons).

The County's GHG inventory also estimates the number of people per unit as part of their projections on the number of housing units and population growth. The number of housing units in the Unincorporated County in 2030 is anticipated to be 192,925. The anticipated 2030 population of 551,712 divided by the anticipated number of residential units in 2030, equates to approximately 2.86 people per residential unit in 2030.

The intention of the threshold is to demonstrate that the project would develop in an efficient manner that would support meeting the County's GHG reduction target for 2030. By demonstrating the project achieves this efficiency, the project would not interfere with the

[7] Setting a target with respect to a baseline year, such as 2014, is standard industry practice in climate action planning. The original 2008 Scoping Plan developed by CARB recommended a reduction below baseline levels as a valid reduction target, in recognition of the challenges in developing a 1990 inventory for a local jurisdiction. Data used for developing the 2014 inventory represent the best available data, based on improved inventory methodologies and data collection procedures. The same level of rigor cannot be applied to a 1990 inventory and any attempts to extrapolate activity data (e.g., vehicle miles traveled, energy consumption) for 1990 would introduce a large margin of error and provide an inaccurate accounting of county emissions. Significant reductions in GHG emissions were already accomplished by the state between 2008 and 2014. Therefore, measuring reductions by a 2014 baseline is more conservative than measuring reductions by a 1990 baseline and results in even greater GHG reductions than if a 1990 baseline were used. Therefore, reliance on Local data to determine relative reduction levels from the County's 2014 baseline emissions levels is a valid and conservative methodology to determine reduction targets.

County efforts to meet its 2030 reduction target. Thus, the project would also not interfere with State SB 32 targets because the County targets were developed to assist the State in meeting its target. More specifically, demonstrating the project's consistency with a local 2030 per capita efficiency target of 3.5 MT CO_2e per person would generate less than significant impacts within the County of San Diego because it means the project is located in an area of the County and is conditioned to have features that allow it to operate in a manner that keeps the project's emission levels low enough to avoid interfering with the County's ability to limit its GHG emissions to 1,926,903 MT CO_2e in 2030. In doing so, this allows the project to avoid interfering with the State's ability to limit its emissions to 260,000,000 MT CO_2e in 2030. By not interfering with the County and State's ability to reach the SB 32 targets in 2030, the project makes substantial progress towards the State meeting its long-term GHG target in 2050. This is important because EO B-30-15 found that the state's 2050 target is needed to "attain a level of emissions necessary to avoid dangerous climate change." Therefore, the efficiency threshold establishes a reasoned explanation for how one can know that the project's GHG level relates to both the State's GHG targets and the project's fair share toward attaining a level of emissions necessary to avoid dangerous climate change impacts.

For this 3.5 MT CO2e efficiency threshold, in conformance with the Court's guidance, the service population number used in the denominator does not rely on statewide service population and the numerator does not rely on statewide GHG inventory data. Instead, the denominator relies on County service population numbers, and the numerator relies on County-specific GHG inventory data. In addition, it is not a threshold for general use. The County will review each project for what type of threshold (i.e. efficiency threshold, bright-line threshold, or other type of threshold) is appropriate for that project, using the County's judgment regarding what constitutes a significant impact.

Even if it were used on more than one project in the County, it is not being applied evenly to most project types because different types of projects in the County produce different types of service populations. A residential project's "service population" is unique to that product type. A residential project will use a different service population than a non-residential project. Also, the amount of GHG emissions each project would need to achieve in the numerator to achieve an efficiency rate will vary. There is no set amount of GHG reductions being evenly applied to all project types in the County. Therefore, this project-specific threshold takes into account the variation from development type to development type.

4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

The Project construction dates were estimated based on a construction kickoff in early 2021 with construction completed in 2022. The proposed Project would include the demolition of a single-family house and garage which are approximately 3,000 SF combined. The demolition and construction was analyzed using the latest CalEEMod 2016.3.2 air quality model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2017. CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 paint Volatile Organic Compound (VOC) standards and to include Tier 4 with DPFs construction equipment per the Project description. Table 4.1 shows the expected timeframes for each construction phase, as well as the quantity of construction equipment which have been verified by the applicant's Project Engineer.

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Demolition	1/1/2021	1/28/2021	
Excavators			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			1
Site Preparation	1/29/2021	2/4/2021	
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			1
Grading	2/5/2021	2/16/2021	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Building Construction	2/17/2021	1/4/2022	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Paving	1/5/2022	1/28/2022	
Pavers			2
Paving Equipment			2
Rollers			2
Architectural Coating	1/29/2022	2/23/2022	
Air Compressors			1
This equipment and durations were selected based on County consultant's communications with the Project applicant to verify the construction schedule and type of equipment needed to perform the grading and construction work			

Additionally, it should be noted that if the construction occurs after this date, emissions calculated within this report would be conservative. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the Project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. Two construction models have been prepared. The CalEEMod input/output model for each modeled scenario is shown in ***Attachments A*** to this report.

4.2 Operational Emissions Calculation Methodology

Operational GHG sources for the Project would include: area sources such as landscaping and architectural coatings during routine painting to maintain the upkeep of the buildings; energy sources from electrical and natural gas; mobile sources from vehicular traffic including trucks and passenger vehicles; solid waste from trash generation and decomposition at landfills; and emissions generated through the conveyance and treatment of water. PDFs as defined in Section 1.4 have been included within the analysis.

GHG emissions for energy, water, and solid waste source emissions were estimated using CalEEMod default inputs. Mobile source emissions were based on the projected generated traffic volumes of 496 Average Daily Trips (ADT) as identified within the Project traffic study (LLG, 2019). As noted previously, CARB has identified adjustment factors for CalEEMod to account for changes in vehicle emissions regulations associated with the SAFE Rule. Per CARB recommendations, an adjustment factor for vehicle emissions in 2023 (i.e., assumed operational year) was applied to mobile source emissions of CO_2.

Regarding the Project's energy intensity factors, CalEEMod's default rates from 2009 were updated to reflect Project operational year intensity factors for 2023. In 2009, SDG&E achieved 10.5 percent procurement of renewable energy (California Public Utilities Commission, 2016) and in 2030 will have up to 60 percent in place per requirements of SB 100. Given this, SDG&E energy-intensity factors for 2023 were calculated and were modeled as such within CalEEMod as shown in Table 4.2 and are also shown in ***Attachment A*** to this report. It should be noted that SDG&E has already achieved 44 percent as of 2019, though for purposes of this analysis the projected efficiency in 2023 is 41.1 percent and was used within this analysis to be conservative (California Public Utilities Commission, 2019).

Table 4.2: SDG&E Energy Intensity Factors

GHG	2009 Factors – 10.5% Renewables (lbs/MWh)	2023 Factors – 41.1% Renewables (lbs/MWh)
Carbon Dioxide (CO_2)	720.49	474.15
Methane (CH_4)	0.029	0.0191
Nitrous Oxide (N_2O)	0.006	0.0039

As a PDF, the Project will exclusively utilize high-efficiency indoor and outdoor LED lighting in all buildings. LED indoor lighting is 75-90 percent more efficient than standard lighting. High-efficiency lighting is addressed by both the 2013 Title 24 standards (CEC, 2012) and the 2016 Title 24 standards (CEC, 2015); these standards specifically call out lighting power density requirements for non-residential land uses. However, the lighting power density requirements do not change across the two sets of Title 24 standards. Rather, as illustrated by Table 140.6-B within the 2013 and 2016 Title 24 standards, the applicable requirement is 0.60 watts per ft^2. Of note, the default parameters of the version of CalEEMod used in this analysis (along with its predecessor versions) do not account for high-efficiency lighting technologies or the 2016 Title 24. Since the project will be constructed in 2020, the project would be required to utilize Title 24 2019 lighting standards which have not been included in CalEEMod. Given this, the estimated GHG emissions from the project are conservative.

Default parameters of CalEEMod 2016.3.2 (along with its predecessor models) do not account for high-efficiency lighting technologies. For purposes of this analysis, the design feature to utilize 100 percent high-efficiency lighting would reduce energy usage from combined indoor and outdoor lighting by at least 75 percent from that estimated within CalEEMod as is discussed in the paragraph above. Calculations on estimated lighting energy reductions are shown in ***Attachment B*** and assume a 65 percent reduction, resulting in conservative lighting energy use.

Under AB 341 and the County's own Strategic Plan to Reduce Waste, adopted in April 2017, the County would ultimately be required to increase diversion of waste from landfills by 75%. The project would provide separate waste containers to allow for simpler material separations or would direct the project HOA to utilize a pay for a waste collection service that recycles materials offsite. Additionally, the project would provide for green waste collection so that green waste is diverted from landfills and recycled as mulch. Prior to 2012, when AB 341 was approved, a 50 percent diversion rate was required for commercial and industrial uses. Though not explicitly stated in CalEEMod, it is assumed that this regulation is accounted for within default CalEEMod values for emissions generated by solid waste. Thus, AB 341 would and the County's Strategic Plan to Reduce Waste could increase the diversion rate beyond assumed CalEEMod diversion by 25 percent. A 75 percent reduction was not taken due to the lack of data on diversion rates within the County at this time.

The Project operational GHG modeling results for operations excluding PV reductions as described below is provided to ***Attachment C.***

PV Systems

The Project would install at least 620 solar panels rated at 300-watts each on site, which would generate at least 306,871 kWh based on the National Renewable Energy Laboratory (NREL, 2019) PVWatts Calculator (shown in ***Attachment D*** to this report. Based on this, the Project would be estimated to generate an annual amount of electrical energy of 306,871 kWh per year. It should be noted that the more solar produced by the Project reduces the amount of non-renewable energy added to the grid. For the purposes of this analysis, the net generation of solar energy generated on-site was estimated, some of which would be assumed to be added to the regional power grid and not consumed directly on-site. Given this, the Project solar would reduce 100.64 MT CO_2e annually. The CalEEMod solar outputs are shown in ***Attachment E*** to this report.

Vegetation Change Calculations

Vegetation, as it grows, collects carbon from the air and stores it in the leaves, stems, and roots. Therefore, a project that changes the existing land use type, with respect to vegetation, can result in changes in CO_2 sequestration from the atmosphere. CalEEMod has generally applicable sequestration data that can be used to estimate the amount of CO_2 that either is gained or lost from vegetation-based sequestration, depending on the project.

The existing site is fully disturbed and no significant vegetation exists. The Project will plant 124 new, native trees on slopes, along streets, and around all perimeters of the project.

CalEEMod uses the IPCC's protocol for vegetation sequestration calculations. Based on this, the model estimates how much CO_2 newly planted trees will sequester and reports the sequestration as a one-time carbon-stock change. (Per the IPCC, trees sequester CO_2 while they are actively growing and the one-time stock is based on a 20-year lifecycle.) The IPCC concludes that a tree's ability to sequester carbon decreases significantly after 20 years and credit after 20 years is not applied.

5.0 FINDINGS

5.1 Potential to Generate Significant GHG Emissions

The purpose of this GHG assessment is to provide documentation in support of the County's CEQA compliance requirement. The proposed Project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines which are (14 CCR 15000 et seq.):

1. Will the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

5.2 Project Generated Greenhouse Gas Emissions

1. Will the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

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 370 MT CO_2e from construction activities (See Table 5.1). Given the fact that the total emissions would ultimately contribute to cumulative levels, construction emissions of GHGs were annualized to allow for inclusion in operational emissions estimates, consistent with the South Coast Air Quality Management District (SCAQMD) recommendations for construction GHG emissions (SCAQMD, 2008). Construction emissions were annualized over a 30-year period, per SCAQMD recommendations, to account for emissions generated over the assumed project lifetime. Given this, the Project would add approximately 12 MT CO_2e per year from construction which were added to annual operational emissions estimates to allow for comparison against the project-specific per capita emissions threshold.

It should be noted that for purposes of Air Quality emission reduction the project applicant has included a PDF to reduce diesel particulate matter and NO_x emissions. Since the CalEEMod inputs for this GHG analysis have been modified to include this PDF (labeled PDF 1), it is included in this analysis but would not reduce GHG emissions:

PDF 1: Project-related construction activities would use Tier 4 with DPF construction equipment U.S EPA/ CARB -certified. The Project applicant has confirmed commitment to this feature.

Table 5.1: Proposed Project Construction CO_2e Emissions Summary

Year	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
2021	0	350	350	0	0	352
2022	0	18	18	0	0	18
Project Total (MT CO_2e)						**370**
Annualized Emission Increase over 30 years (MT CO_2e per Year)						**12**
Expected construction emissions are based upon CalEEMod modeling for equipment listed in Table 4.1 above.						

Operations

To minimize GHG emissions the Project would implement a number of PDFs shown below and have been labeled PDFs 2-11. As discussed in Section 3.4 of this analysis a Project Specific significance threshold of 3.5 MT CO_2e per person in 2030 is required for the project to have a less than significant GHG impact. It should be noted that PDF 2 was included within the modeling but would not necessarily reduce GHG emissions. PDFs 3 through 11 will directly reduce GHG emissions. The following PDFs were quantified in this analysis unless otherwise stated:

PDF 2: The Project will utilize architectural coatings compliant with San Diego Air Pollution Control District (SDAPCD) Rule 67 (SDAPCD, 2015).

PDF 3: Install high-efficiency Light Emitting Diode (LED) street and area lighting to achieve reduction in overall lighting energy.

PDF 4: The Project will not install wood burning or natural gas burning hearth options in all 62 residential units.

PDF 5: The Project will be designed to use 100 percent electric energy for all Project operations. Natural gas lines will not be installed onsite.

PDF 6: In accordance with the California Integrated Waste Management Act (AB 939), and to be consistent with AB 341's statewide 75 percent diversion policy, the Project will seek to also achieve a 75 percent diversion goal by providing areas onsite for storage and collection of recyclables and green waste which would be collected and processed offsite ensuring that both recyclables and organics such as green waste can be substantially diverted from landfills. As part of the homeowner disclosure forms, the Project would also and provide literature promoting recycling and green waste management to achieve waste diversion.

PDF 7: Weather-based irrigation systems in common areas would be installed that would include rain sensing timers. This PDF was not quantified within this analysis but would reduce GHG emissions associated with water consumption.

PDF 8: The Project applicant will be required to comply with the County's Water Conservation in Landscaping Ordinance and submit a Landscape Document Package demonstrating a 40 percent reduction in outdoor water use.

PDF 9: Install low flow indoor water fixtures in all residential units to achieve a 20 percent reduction in flow.

PDF 10: The Project will plant 124 trees within the project site.

PDF 11: Install a single Level 2 electric vehicle (EV) charging stations within each of the 62 residential unit garages. This PDF was not quantified within this analysis but would reduce GHG emissions associated with mobile sources.

PDF 12: Install two Level 2 EV Charging stations within the visitor parking area onsite. This PDF was not quantified within this analysis but would reduce GHG emissions associated with mobile sources.

PDF 13: The Project will install 3 kilowatts (kW) of photovoltaic (PV) solar for each residential unit for a total of 186 kW or 620 300-watt panels or an average of 10 PV panels per residential unit.

Most of the PDFs listed above were applied within CalEEMod as the program allows for adjustments to default values or the application of these activities to be incorporated into modeling outputs. GHG reductions for PDFs 10 and 11 were applied outside of CalEEMod. The methodology for estimating GHG emissions reductions associated with these two PDFs are described below:

Through the implementation of PDF 10, the Project will plant 124 trees on-site. Using carbon sequestration values included in CalEEMod, emissions reductions were applied off-model. Through PDF 10, it was estimated that the planting of 124 new trees would sequester approximately 91 MT CO_2e of carbon over 20 years, consistent with IPCC methodology. Since a project lifetime is assumed to be 30 years, annual reductions would be averaged over a 30 year period. Thus, a yearly sequestered emission rate of 3 MT CO_2e per year was applied to the project.

Through the implementation of PDF 13, the project will install 186 kWh of PV which would generate 306,871 kWh annually, or an average of 4,949.53 kWh per residential unit. PV is considered 100 percent renewable and once installed would reduce GHG emissions generated from non-renewable energy sources. Based on energy intensity factors calculated in Section 4.2 above, the GHG reduction due to PDF 13 would be 101 MT CO_2e annually.

Table 5.2 shows the project emissions including reductions from PDFs 1-13 that could be modeled as well as annualized construction emissions. Based on this, the project's total operational GHG emissions are estimated to be 363 MT CO_2e per year.

Table 5.2: 2023 Proposed Project Construction and Operational GHG emissions (MT/Year) and Proposed Project Efficiency Rate (MT/Year/Capita)

Source	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Area	0	1	1	0	0	1
Electrical Usage	0	61	61	0	0	61
Natural Gas	0	0	0	0	0	0
Mobile	0	389*	389*	0	0	389
Waste	4	0	4	0	0	11
Water	1	17	18	0	0	23
Annual Emissions Total (includes PDFs 1-9)						485
Amortized Project Construction Emissions (Table 5.1)						12
PDF 10 Add 124 trees						-3
PDF 11 - 186 kWh of PV						-101
Total GHG emissions (Construction + Operations)						**393**
Proposed Project Efficiency Rate						**3.5**
Project Residents (62 homes X 2.86 persons per unit)						177
Project GHG Efficiency Rate (Total GHG Emissions/Project Residents)						2.2
Project GHG Efficiency Rate less than Project Specific Threshold of 3.5 per capita?						Yes
Significant GHG Impact?						No
Mobile emissions were adjusted by a factor of 1.0202 off model to account for SAFE Rule changes.						

As shown in Table 5.2, the Project's 177 persons would generate a total of only 393 MT CO_2e, from construction and operation of the project, which is a GHG efficiency rate of 2.2 MT CO_2e per person. This is less than the project-specific GHG threshold of 3.5 MT CO_2e per person. Based on this, the proposed Project would generate fewer emissions than the localized SB 32 efficiency metric of 3.5 MT CO_2e per person. Therefore, the Project with the identified PDFs would generate less than significant greenhouse gas emissions and would have a less than significant impact on the environment.

2. Will the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The California Governor's Office of Planning and Research (OPR) has advised that "a project that falls below an efficiency-based threshold that is aligned with long-term goals and relevant

plans has no cumulative impact distinct from the project impact."[8] The Project would be required to include PDFs 1-11 and would also include a number of PDFs not directly utilized in the calculations of GHG emissions. With these PDFs, the proposed Project was found to generate less than significant GHG impacts and was found to generate GHG emissions below the 2030 project specific threshold of 3.5 MT CO_2e per capita. Because the project specific threshold of 3.5 MT is aligned with long-term goals and relevant plans as discussed herein, the Project also has no cumulative impact distinct from the Project impact. Given this and the plan consistency evaluation in Section 5.3 below, the Project would not conflict with any applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions and a less than significant cumulative impact is expected under CEQA.

5.3 Plan Consistency Evaluation

The Project was analyzed for consistency with the County of San Diego's General Plan which contains various goals, policies, and objectives related to the reduction of GHG emissions and global climate change. Based on our analysis, the Project would be consistent as shown in Table 5.3 on the following page and would have less than significant GHG impacts with the PDFs identified in Section 1.4 of this report. The Project would therefore not conflict with any local or state plans, policies, or regulations and requirements.

To the extent consistency with SANDAG's Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) called "San Diego Forward: The Regional Plan" is relevant to a CEQA analysis, the project would include site design elements and project design features developed to support the policy objectives of the RTP and SB 375. The Project seeks to increase density within a County island surrounded by both the City of San Marcos and the City of Vista. This increased density places County residents closer to amenities, services and jobs which ultimately reduce vehicular miles traveled by any potential County residents within this Project area.

In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

[8] OPR Technical Advisory on Evaluating Transportation Impacts in CEQA, Dec. 2018, page 6. See also Center for Biological Diversity v. Department of Fish and Wildlife (2015), finding consistency with GHG emissions reductions goals under AB 32 sufficient to analyze significance of cumulative impacts.

A 15% per capita reduction in regional vehicle miles traveled (VMT) has been recognized in ORPs Technical Advisory for analyzing traffic impacts by VMT as threshold that is consistent with a SCS. The County's VMT thresholds were adopted to be consistent with the RTP and SB 375 to incentivize development to be located within VMT-efficient areas and help the state achieve its GHG emission targets. As discussed in the Project's Transportation analysis, the Project is located in a VMT efficient area of the County, with a VMT efficiency rate more than 15% lower than the unincorporated County's average VMT per capita. (LLG Engineers, *Smilax Property, Vehicle Miles Travelled Assessment*, July 31, 2020.) Therefore, the project's location and design provides a VMT per capita reduction consistent with the OPR Technical Advisory and the RTP/SCS.

Table 5.3: County General Plan Policies

Policy	Project Consistency
COS14.3 Sustainable Development. Require design of residential subdivisions and nonresidential development through "green" and sustainable land development practices to conserve energy, water, open space, and natural resources.	*Consistent*. The Project would install low flow indoor fixtures and otherwise comply with the sustainability and efficiency features consistent with Title 24, Part 6 of the California Code of Regulations (2019) requirements.
COS14.7 Alternative Energy Sources for Development Projects. Encourage development projects that use energy recovery, photovoltaic, and wind energy.	*Consistent*. The Project would install 186 kW of solar.
COS14.10 Low Emission Construction Vehicles and Equipment. Require County contractors and encourage other developers to use low-emission construction vehicles and equipment to improve air quality and reduce GHG emissions.	*Consistent*. The Project would utilize Tier 4 with DPF construction equipment as a PDF and would therefore be consistent with COS14.10 Low Emission Construction Vehicles.
COS15.1 Design and Construction of New Buildings. Require that new buildings be designed and constructed in accordance with "green building" programs that incorporate techniques and materials that maximize energy efficiency, incorporate the use of sustainable resources and recycled materials, and reduce emissions of GHGs and toxic air contaminants.	*Consistent*. The Project proposes sustainability and efficiency features consistent with Title 24, Part 6 of the California Code of Regulations (2019) requirements.
COS15.4 Title 24 Energy Standards. Require development to minimize energy impacts from new buildings in accordance with or exceeding Title 24 energy standards.	*Consistent*. The Project proposes implementing energy efficiency features that would meet 2019 Title 24 standards.
COS17.1 Reduction of Solid Waste Materials. Reduce GHG emissions and future landfill capacity needs through reduction, reuse, or recycling of all types of solid waste that is generated. Divert solid waste from landfills in compliance with State law.	*Consistent*. Areas for storage and collection of recyclables and yard waste would be provided.
COS17.2 Construction and Demolition Waste. Require recycling, reduction and reuse of construction and demolition debris.	*Consistent*. The Project would prepare a Construction Debris Management Plan that complies with Section 68.508-68.518 of the County Municipal Code and would divert 90 percent of inerts and 70 percent of construction waste from landfills through reuse and recycling.
COS20.1 Governance and Administration. Reduction of community-wide (i.e., unincorporated County) greenhouse gas emissions contributing to climate change that meet or exceed requirements of the Global Warming Solutions Act of 2006, as amended by Senate Bill 32.	*Consistent.* As discussed above, the Project satisfies a locally appropriate project-specific GHG threshold that is consistent with the SB 32 emissions target.

5.4 Horizon Year 2050

EO S-3-05 2050 Target

The project's progress towards achieving the GHG reduction goals for mid-term year (2030) and horizon-year (2050) must be evaluated, as set forth in SB 32 and EO S-3-05, respectively. EO S-3-05's 2050 GHG target expresses the pace and magnitude of reduction efforts that the scientific community believe necessary to stabilize the climate and mitigate the more serious adverse effects of climate change. This scientific information has important value to policymakers and citizens in considering the long-term emissions impacts of a development such as the proposed Project.

Consistent with guidance from the Supreme Court, it is not necessary for a lead agency to draw a significance conclusion about a project's GHG impacts in 2050. Rather, a lead agency should disclose what is reasonable and provide an analysis reflecting regulatory updates, including regulatory updates related to the state's implementation of SB 32.

As discussed herein, the project-specific service person efficiency threshold is based upon meeting the County's fair share of the State's 2030 GHG target set forth in SB 32. Because the project is consistent with the 3.5 MT CO2e service person efficiency threshold necessary to accomplish this target within the County, it is below a level of significance with regards to its consistency with the SB 32 GHG target.

As affirmed by the California Supreme Court in *Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, "there are presently no reliable means of forecasting how future technological developments or state legislative actions to reduce greenhouse gas emissions may affect future emissions in anyone planning jurisdiction …. Lead agencies can only guess how future technical development or state (or federal or international) action may affect emissions from the myriad of sources beyond their control. (See *Marin Mun. Water Dist. v. KG Land California Corp* (1991) 235 Cal.App.3d 1652, 1663 [CEQA does not require analysis of potential impacts from possible future development that are too speculative to evaluate].) However, consistent with Guidelines section 15144, as described in the regulatory background section of this report, this analysis "use[s] its best efforts to find out and disclose all it reasonably can" by relying on policy declarations and planning documents of the state's executive and legislative branches in order to forecast the project's potential emissions in future years.

Due to the technological shifts anticipated and the unknown parameters of the regulatory framework in 2050, available GHG models and the corresponding technical analyses are subject to limitations for purposes of quantitatively estimating all the reductions in a project's

emissions in 2050. Therefore, estimates of the 2050 project emissions generated by the models are speculative and potentially overstated. Given the fact that regulatory emission reductions will continue to improve well beyond what is known at this time, it is expected that a Project's emissions in 2030 and 2050 would also decrease from increased renewables, better vehicle emissions, reductions in water and waste along with increased building efficiencies and technologies. For example, while definitive quantitative long-term emissions analysis are speculative at this point, the Project is designed as all electric and EV-ready community to fully utilize existing legislation for long-term carbon intensity reduction in utility electricity mix portfolios. As SB 100 requires electricity providers to reduce the GHG emissions of supplied electricity to zero by 2045, the proposed Project's emissions will be reduced in tandem. Additionally, all homes in the proposed Project will be plumbed for dedicated electric vehicle charges per the requirements CalGreen Title 24 Building Code Standards. Therefore, under existing legislation long term operational emissions from the Project are expected to maintain a downward trend relative to the already low emissions at build-out.

Given this, the project's GHG emissions will decrease with time as the state's existing and planned regulatory objectives are implemented and achieved. Also, as statewide regulatory initiatives, including those identified by CARB in its current and future Scoping Plans are implemented, and other technological innovations occur, it is reasonable to assume that the statewide and the proposed Project's GHG emissions levels would be reduced further. Therefore, the County has disclosed all it reasonably can about the project's impacts in 2050.

It should be noted, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32." (see First Update to Scoping Plan, p. ES2.) Regarding the 2050 target for reducing GHG emissions to 80 percent below 1990 levels, the First Update to the Climate Change Scoping Plan states:

> "This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions."

In other words, the experts at CARB attest the State is on a trajectory to meet the 2020, 2030 and 2050 GHG reduction targets set forth in AB 32, Executive Order B-30-15 and Executive Order S-3-05.

CEQA Guidelines 15145 states that "if, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusions and terminate discussion of the impact."

Given that (1) the relevant regulatory agencies, most particularly CARB is still in the process of determining how the 2050 statewide reduction goal will be achieved, (2) no statutes or regulations have been adopted to translate the 2050 statewide goals into regional 2050 emission reduction targets, much less significance thresholds; (3) no agency with subject matter expertise has adopted regulations to achieve these statewide goals at the project level, and (4) the available models cannot currently quantify all project-related emission reductions in those future years, pursuant to CEQA Guidelines 15145, the County concludes it would be too speculative to draw a significance conclusion regarding project impacts in 2050. What we know is that a project consistent with the 2030 statewide reduction target makes "substantial progress" toward the 2050 statewide reduction target.

6.0 REFERENCES

BAAQMD. (2017). *California Environmental Quality Act Air Quality Guidelines.* Retrieved from https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

California Air Resources Board. (2012). *www.arb.ca.gov*. Retrieved from California Air Resources Board Approves Advanced Clean Car Rules : https://www.arb.ca.gov/newsrel/newsrelease.php?id=282

California Air Resources Board. (2017). *Advanced Clean Cars Summary.* Retrieved 2017, from www.arb.ca.gov: https://www.arb.ca.gov/msprog/clean_cars/acc%20summary-final.pdf

California Energy Commission. (2015, June 3). Retrieved from http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/15-day_language/impact_analysis/2016_Impact_Analysis_2015-06-03.pdf

California Fuel Cell Partnership. (2017). *www.cafcp.org*. Retrieved from https://cafcp.org/stationmap

California Public Utilities Commission. (2016). *Biennial RPS Program Update - In Compliance with Public Utilities Code Section 913.6.* Retrieved from http://www.cpuc.ca.gov/uploadedFiles/CPUC_Website/Content/Utilities_and_Industries/Energy/Reports_and_White_Papers/FINAL12302015Section913_6Report.pdf

California Public Utilities Commission. (2019). *California Renewables Portfolio Standard.*

CAPCOA. (September 2016). *2016.3.1 - California Emissions Estimator Model-Software Documentation - Appendix D.* Retrieved from http://caleemod.com/

CARB. (2012, November 30). *ww3.arb.ca.gov*. Retrieved 2019, from https://ww3.arb.ca.gov/msprog/offroad/orcomp/orcomp.htm

CARB. (2017). *Draft (The 2017 Climate Change Scoping Plan).* Retrieved from https://www.arb.ca.gov/cc/scopingplan/revised2017spu.pdf

CARB. (2020). *EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO2) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule.* Retrieved from https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf

CEC. (2012). *T24 Standards (2013).* Retrieved from http://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf

CEC. (2015). *T24 Standards (2016).* Retrieved from http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

EPA. (2018, May 10). *epa.gov*. Retrieved 2019, from https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-emissions-heavy-equipment-compression

Google. (2020). Retrieved 2020, from maps.google.com

IPCC. (2007). *IPCC Fourth Assessment Report: Climate Change 2007 : Working Group I: The Physical Science Basis.* Retrieved from https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html

LLG. (2020). *Transportation Impact Analysis - WARNER SPRINGS RANCH.*

PCAPCD. (2016). *California Environmental Quality Act Thresholds of Significance.* Retrieved from https://www.placerair.org/DocumentCenter/View/2061/Threshold-Justification-Report-PDF

SANDAG. (2019). *Data Surver Series 13 Regional Growth Forcast*. Retrieved from http://datasurfer.sandag.org/: http://datasurfer.sandag.org/download/sandag_forecast_13_region_san-diego.pdf

SCAQMD. (2008). Retrieved 2018, from http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-6/ghg-meeting-6-guidance-document-discussion.pdf

SDAPCD. (2015). *RULE 67.0.1. ARCHITECTURAL COATINGS.* Retrieved from https://www.arb.ca.gov/drdb/sd/curhtml/r67.0.1.pdf

US EPA. (2018). *The Safer Affordable Fuel Efficient (SAFE) Vehicles 2021-2026.* Retrieved from https://www.govinfo.gov/content/pkg/FR-2018-09-26/pdf/2018-20962.pdf

US EPA. (2020). *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks.* Retrieved from Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks

WRCC. (2018). Retrieved from https://wrcc.dri.edu/Climate/comp_table_show.php?stype=wind_dir_avg

WRCC. (2020). *WARNER SPRINGS, CALIFORNIA (049447)*. Retrieved from https://wrcc.dri.edu/summary/Climsmsca.html: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9447

7.0 CERTIFICATIONS

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

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Date August 12, 2020

ATTACHMENT A

SDG&E GHG Energy Emission Factors with RPS

SDG&E GHG Energy Emission Factors with RPS

Year	RPS Achieved	Co2 Intensity	CH4 Intensity	N2O Intensity	
2009	**10.50%**	**720.49**	**0.0290**	**0.0060**	
2015	**20.0%**	**644.01**	**0.0259**	**0.0054**	
2020	**33.0%**	**539.36**	**0.0217**	**0.0045**	**33% Required by Law**
2021	**35.7%**	**517.63**	**0.0208**	**0.0043**	
2022	**38.4%**	**495.89**	**0.0200**	**0.0041**	
2023	**41.1%**	**474.15**	**0.0191**	**0.0039**	
2024	**43.8%**	**452.42**	**0.0182**	**0.0038**	
2025	**46.5%**	**430.68**	**0.0173**	**0.0036**	
2026	**49.2%**	**408.95**	**0.0165**	**0.0034**	
2027	**51.9%**	**387.21**	**0.0156**	**0.0032**	
2028	**54.6%**	**365.48**	**0.0147**	**0.0030**	
2029	**57.3%**	**343.74**	**0.0138**	**0.0029**	
2030	**60.0%**	**322.01**	**0.0130**	**0.0027**	60% Required by Law

ATTACHMENT B

High Efficiency LED Lighting

High Efficiency Lighting

The lighting intensity in CalEEMod is the same for historical buildings and new developments for residential uses. The lighting intensity for non-residential uses is 20% better in CalEEMod following a requirement that half of the outdoor lighting is High Efficiency (HE) lighting as can be seen in the Default Data Tables within the CalEEMod User Manual Appendix D. The number has not been adjusted or changed in Versions 2011, 2013 or 2016 that would account for better lighting technologies. HE lighting is not required per code with the exception of 50% of the outdoor lighting, as stated above, unless additional lighting is needed to meet an allowable lighting requirement. Based on conversations with Architects and Energy Consultants, it was concluded that no interior high efficiency (HE) lighting would be needed to meet Code compliance. Therefore, the use of high efficiency lighting (LED is one example) would be above and beyond code. The amount of energy needed in the interior of the building is typically higher than the amount of energy needed outdoors. Indoor HE lighting is 75-90% more efficient than standard lighting.

Example: a 10 watt LED bulb replaces a 60 watt standard bulb, which would be 83% more efficient. A 15 watt LED bulb has an equivalent rating of a 100 watt standard bulb. Outdoor HE lighting is 65-80% more efficient than standard lighting. For example: a 70 watt LED bulb replaces a 250 watt standard bulb, which would be 72% more efficient. If the developer installs 100% HE fixtures and bulbs, this would reduce the energy usage from lighting more than 70% as can be seen in the tables below. To be conservative, the lighting intensity in CalEEMod was adjusted 65% with the installation of 100% HE bulbs to account for additional outdoor lighting needs.

100% HE for smaller buildings (i.e., residential and small commercial uses)

	Standard Lights	HE Lights	Standard Wattage	HE Wattage	Energy Use (Standard)	Energy Use (HE)	Total Energy
CalEEMod Lighting	60[1]	10	100	15	6,000	150	6,150
100% HE Lighting	0	70	--	15	----	1,050	1,050
						Savings	5,000
						% Reduction	81%

[1] All indoor lighting is standard bulbs and half of the outdoor lighting is standard bulbs.

100% HE for larger buildings (i.e., commercial and industrial uses)

	Indoor Lights	Indoor Wattage	Energy Use (Indoor)	Outdoor Lights (50% HE)	Outdoor Wattage (Standard/HE)	Energy Use (Outdoor)	Total Energy
Historical Lighting	100	60	6,000	30	250/70	7,500	13,500
Standard Lighting	100	60	6,000	15/15[1]	250/70	3,750/1,050	10,800[2]
100% HE Lighting	100	10	1,000	30	0/70	0/2,100	3,100
						Savings	7,700
						% Reduction	71%

[1] All indoor lighting is standard bulbs and half of the outdoor lighting is standard bulbs.

[2] Assumed 20% reduction within CalEEMod lighting intensity.

ATTACHMENT C

CALEEMOD 2016.3.2 (Proposed Project)

Smilax Property

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	62.00	Dwelling Unit	4.89	62,000.00	177

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	498.31	**CH4 Intensity (lb/MWhr)**	0.02	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2023 Full Operations Expected

Land Use - 4.89 ac site

Construction Phase - Construction Sch. (CS)

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - CS

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Construction Equip. (CE)

Trips and VMT -

Demolition -

Grading - CE

Architectural Coating - Rule 67 paint

Vehicle Trips - Per Traffic Engineer and 8 trips per unit and 6.14 average trips dist.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No Fireplaces

Area Coating - Rule 67 Paint

Energy Use - Project is all electric no natural gas required

Water And Wastewater -

Solid Waste -

Construction Off-road Equipment Mitigation - Tier 4 with DPF

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3

tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	T24NG	10,202.85	0.00
tblFireplaces	NumberGas	34.10	0.00
tblFireplaces	NumberNoFireplace	6.20	0.00
tblFireplaces	NumberWood	21.70	0.00
tblGrading	AcresOfGrading	0.00	4.00
tblLandUse	LotAcreage	3.88	4.89
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	720.49	498.31
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSequestration	NumberOfNewTrees	0.00	124.00
tblVehicleTrips	HO_TL	7.50	6.14
tblVehicleTrips	HO_TTP	39.60	40.00
tblVehicleTrips	HS_TL	7.30	6.14
tblVehicleTrips	HS_TTP	18.80	18.00
tblVehicleTrips	HW_TL	10.80	6.14
tblVehicleTrips	HW_TTP	41.60	42.00

tblVehicleTrips	ST_TR	5.67	8.00
tblVehicleTrips	SU_TR	4.84	8.00
tblVehicleTrips	WD_TR	5.81	8.00
tblWoodstoves	NumberCatalytic	3.10	0.00
tblWoodstoves	NumberNoncatalytic	3.10	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2645	2.3655	2.2187	4.0100e-003	0.0927	0.1235	0.2162	0.0350	0.1158	0.1509	0.0000	350.2210	350.2210	0.0753	0.0000	352.1045
2022	0.3988	0.0952	0.1239	2.1000e-004	2.0000e-003	4.9400e-003	6.9400e-003	5.3000e-004	4.6200e-003	5.1600e-003	0.0000	18.0964	18.0964	4.5300e-003	0.0000	18.2098
Maximum	**0.3988**	**2.3655**	**2.2187**	**4.0100e-003**	**0.0927**	**0.1235**	**0.2162**	**0.0350**	**0.1158**	**0.1509**	**0.0000**	**350.2210**	**350.2210**	**0.0753**	**0.0000**	**352.1045**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0621	0.3685	2.3321	4.0100e-003	0.0927	1.2500e-003	0.0939	0.0350	1.2200e-003	0.0362	0.0000	350.2206	350.2206	0.0753	0.0000	352.1041
2022	0.3910	0.0117	0.1405	2.1000e-004	2.0000e-003	6.0000e-005	2.0500e-003	5.3000e-004	6.0000e-005	5.9000e-004	0.0000	18.0964	18.0964	4.5300e-003	0.0000	18.2097
Maximum	**0.3910**	**0.3685**	**2.3321**	**4.0100e-003**	**0.0927**	**1.2500e-003**	**0.0939**	**0.0350**	**1.2200e-003**	**0.0362**	**0.0000**	**350.2206**	**350.2206**	**0.0753**	**0.0000**	**352.1041**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**31.69**	**84.55**	**-5.55**	**0.00**	**0.00**	**98.98**	**56.99**	**0.00**	**98.94**	**76.39**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	1-1-2021	3-31-2021	0.6314	0.0791
6	4-1-2021	6-30-2021	0.6605	0.1155
7	7-1-2021	9-30-2021	0.6678	0.1168
8	10-1-2021	12-31-2021	0.6688	0.1178
9	1-1-2022	3-31-2022	0.5113	0.4162
		Highest	0.6688	0.4162

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	0.2948	5.3100e-003	0.4605	2.0000e-005		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	0.7520	0.7520	7.2000e-004	0.0000	0.7701
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	70.3961	70.3961	2.8300e-003	5.7000e-004	70.6352
Mobile	0.1137	0.4371	1.2184	4.1400e-003	0.3709	3.2700e-003	0.3742	0.0993	3.0500e-003	0.1024	0.0000	382.3625	382.3625	0.0202	0.0000	382.8668
Waste						0.0000	0.0000		0.0000	0.0000	5.7893	0.0000	5.7893	0.3421	0.0000	14.3428
Water						0.0000	0.0000		0.0000	0.0000	1.2816	18.2841	19.5657	0.1324	3.2500e-003	23.8447
Total	**0.4085**	**0.4424**	**1.6788**	**4.1600e-003**	**0.3709**	**5.8200e-003**	**0.3768**	**0.0993**	**5.6000e-003**	**0.1049**	**7.0709**	**471.7947**	**478.8656**	**0.4982**	**3.8200e-003**	**492.4594**

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	0.2948	5.3100e-003	0.4605	2.0000e-005		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	0.7520	0.7520	7.2000e-004	0.0000	0.7701
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	61.2771	61.2771	2.4600e-003	4.9000e-004	61.4852
Mobile	0.1137	0.4371	1.2184	4.1400e-003	0.3709	3.2700e-003	0.3742	0.0993	3.0500e-003	0.1024	0.0000	382.3625	382.3625	0.0202	0.0000	382.8668
Waste						0.0000	0.0000		0.0000	0.0000	4.3420	0.0000	4.3420	0.2566	0.0000	10.7571
Water						0.0000	0.0000		0.0000	0.0000	1.2816	17.0051	18.2866	0.1323	3.2400e-003	22.5613
Total	**0.4085**	**0.4424**	**1.6788**	**4.1600e-003**	**0.3709**	**5.8200e-003**	**0.3768**	**0.0993**	**5.6000e-003**	**0.1049**	**5.6235**	**461.3967**	**467.0202**	**0.4123**	**3.7300e-003**	**478.4404**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**20.47**	**2.20**	**2.47**	**17.25**	**2.36**	**2.85**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	91.0160
Total	**91.0160**

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	1/1/2021	1/28/2021	5	20	
2	Site Preparation	Site Preparation	1/29/2021	2/4/2021	5	5	
3	Grading	Grading	2/5/2021	2/16/2021	5	8	
4	Building Construction	Building Construction	2/17/2021	1/4/2022	5	230	
5	Paving	Paving	1/5/2022	1/28/2022	5	18	
6	Architectural Coating	Architectural Coating	1/29/2022	2/23/2022	5	18	

Acres of Grading (Site Preparation Phase): 4

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 125,550; Residential Outdoor: 41,850; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
demolition	3	8.00	0.00	14.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4900e-003	0.0000	1.4900e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.1502	0.0957	1.7000e-004		7.4900e-003	7.4900e-003		6.8900e-003	6.8900e-003	0.0000	14.7730	14.7730	4.7800e-003	0.0000	14.8924
Total	**0.0146**	**0.1502**	**0.0957**	**1.7000e-004**	**1.4900e-003**	**7.4900e-003**	**8.9800e-003**	**2.3000e-004**	**6.8900e-003**	**7.1200e-003**	**0.0000**	**14.7730**	**14.7730**	**4.7800e-003**	**0.0000**	**14.8924**

3.2 demolition - 2021

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	1.8300e-003	4.5000e-004	1.0000e-005	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.5331	0.5331	5.0000e-005	0.0000	0.5343
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.0000e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5604	0.5604	2.0000e-005	0.0000	0.5608
Total	**3.3000e-004**	**2.0300e-003**	**2.4500e-003**	**2.0000e-005**	**7.6000e-004**	**1.0000e-005**	**7.8000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**1.0936**	**1.0936**	**7.0000e-005**	**0.0000**	**1.0952**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4900e-003	0.0000	1.4900e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	8.9300e-003	0.1009	1.7000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	14.7730	14.7730	4.7800e-003	0.0000	14.8924
Total	**2.0600e-003**	**8.9300e-003**	**0.1009**	**1.7000e-004**	**1.4900e-003**	**4.0000e-005**	**1.5300e-003**	**2.3000e-004**	**4.0000e-005**	**2.7000e-004**	**0.0000**	**14.7730**	**14.7730**	**4.7800e-003**	**0.0000**	**14.8924**

3.2 demolition - 2021

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	1.8300e-003	4.5000e-004	1.0000e-005	1.2000e-004	1.0000e-005	1.3000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.5331	0.5331	5.0000e-005	0.0000	0.5343
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.0000e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5604	0.5604	2.0000e-005	0.0000	0.5608
Total	**3.3000e-004**	**2.0300e-003**	**2.4500e-003**	**2.0000e-005**	**7.6000e-004**	**1.0000e-005**	**7.8000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**1.0936**	**1.0936**	**7.0000e-005**	**0.0000**	**1.0952**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0172	0.0000	0.0172	8.5000e-003	0.0000	8.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0322	0.0158	3.0000e-005		1.6100e-003	1.6100e-003		1.4800e-003	1.4800e-003	0.0000	2.5588	2.5588	8.3000e-004	0.0000	2.5795
Total	**3.0800e-003**	**0.0322**	**0.0158**	**3.0000e-005**	**0.0172**	**1.6100e-003**	**0.0188**	**8.5000e-003**	**1.4800e-003**	**9.9800e-003**	**0.0000**	**2.5588**	**2.5588**	**8.3000e-004**	**0.0000**	**2.5795**

3.3 Site Preparation - 2021

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-005	3.0000e-005	3.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0876	0.0876	0.0000	0.0000	0.0876
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0876**	**0.0876**	**0.0000**	**0.0000**	**0.0876**

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					0.0172	0.0000	0.0172	8.5000e-003	0.0000	8.5000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	1.5400e-003	0.0154	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.5588	2.5588	8.3000e-004	0.0000	2.5795
Total	**3.6000e-004**	**1.5400e-003**	**0.0154**	**3.0000e-005**	**0.0172**	**1.0000e-005**	**0.0172**	**8.5000e-003**	**1.0000e-005**	**8.5100e-003**	**0.0000**	**2.5588**	**2.5588**	**8.3000e-004**	**0.0000**	**2.5795**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.1000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0876	0.0876	0.0000	0.0000	0.0876
Total	**4.0000e-005**	**3.0000e-005**	**3.1000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0876**	**0.0876**	**0.0000**	**0.0000**	**0.0876**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1600e-003	0.0990	0.0634	1.2000e-004		4.6400e-003	4.6400e-003		4.2700e-003	4.2700e-003	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**9.1600e-003**	**0.0990**	**0.0634**	**1.2000e-004**	**0.0262**	**4.6400e-003**	**0.0309**	**0.0135**	**4.2700e-003**	**0.0177**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

3.4 Grading - 2021

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	2.1000e-004	1.5000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4203	0.4203	1.0000e-005	0.0000	0.4206
Total	**2.1000e-004**	**1.5000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4203**	**0.4203**	**1.0000e-005**	**0.0000**	**0.4206**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	6.2900e-003	0.0710	1.2000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	10.4215	10.4215	3.3700e-003	0.0000	10.5057
Total	**1.4500e-003**	**6.2900e-003**	**0.0710**	**1.2000e-004**	**0.0262**	**3.0000e-005**	**0.0262**	**0.0135**	**3.0000e-005**	**0.0135**	**0.0000**	**10.4215**	**10.4215**	**3.3700e-003**	**0.0000**	**10.5057**

3.4 Grading - 2021

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	2.1000e-004	1.5000e-004	1.5000e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4203	0.4203	1.0000e-005	0.0000	0.4206
Total	**2.1000e-004**	**1.5000e-004**	**1.5000e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4203**	**0.4203**	**1.0000e-005**	**0.0000**	**0.4206**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2167	1.9873	1.8896	3.0700e-003		0.1093	0.1093		0.1028	0.1028	0.0000	264.0665	264.0665	0.0637	0.0000	265.6592
Total	**0.2167**	**1.9873**	**1.8896**	**3.0700e-003**		**0.1093**	**0.1093**		**0.1028**	**0.1028**	**0.0000**	**264.0665**	**264.0665**	**0.0637**	**0.0000**	**265.6592**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4700e-003	0.0820	0.0219	2.1000e-004	5.3000e-003	1.7000e-004	5.4700e-003	1.5300e-003	1.7000e-004	1.7000e-003	0.0000	20.8629	20.8629	1.5500e-003	0.0000	20.9016
Worker	0.0178	0.0127	0.1282	4.0000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112	0.0000	35.9368	35.9368	1.0300e-003	0.0000	35.9626
Total	**0.0203**	**0.0947**	**0.1500**	**6.1000e-004**	**0.0464**	**4.6000e-004**	**0.0469**	**0.0125**	**4.4000e-004**	**0.0129**	**0.0000**	**56.7997**	**56.7997**	**2.5800e-003**	**0.0000**	**56.8642**

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	0.0374	0.2548	1.9905	3.0700e-003		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	264.0662	264.0662	0.0637	0.0000	265.6589
Total	**0.0374**	**0.2548**	**1.9905**	**3.0700e-003**		**7.0000e-004**	**7.0000e-004**		**7.0000e-004**	**7.0000e-004**	**0.0000**	**264.0662**	**264.0662**	**0.0637**	**0.0000**	**265.6589**

3.5 Building Construction - 2021

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	2.4700e-003	0.0820	0.0219	2.1000e-004	5.3000e-003	1.7000e-004	5.4700e-003	1.5300e-003	1.7000e-004	1.7000e-003	0.0000	20.8629	20.8629	1.5500e-003	0.0000	20.9016
Worker	0.0178	0.0127	0.1282	4.0000e-004	0.0411	2.9000e-004	0.0414	0.0109	2.7000e-004	0.0112	0.0000	35.9368	35.9368	1.0300e-003	0.0000	35.9626
Total	**0.0203**	**0.0947**	**0.1500**	**6.1000e-004**	**0.0464**	**4.6000e-004**	**0.0469**	**0.0125**	**4.4000e-004**	**0.0129**	**0.0000**	**56.7997**	**56.7997**	**2.5800e-003**	**0.0000**	**56.8642**

3.5 Building Construction - 2022

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	1.7100e-003	0.0156	0.0164	3.0000e-005		8.1000e-004	8.1000e-004		7.6000e-004	7.6000e-004	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
Total	**1.7100e-003**	**0.0156**	**0.0164**	**3.0000e-005**		**8.1000e-004**	**8.1000e-004**		**7.6000e-004**	**7.6000e-004**	**0.0000**	**2.3173**	**2.3173**	**5.6000e-004**	**0.0000**	**2.3311**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.8000e-004	1.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1813	0.1813	1.0000e-005	0.0000	0.1816
Worker	1.5000e-004	1.0000e-004	1.0400e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3037	0.3037	1.0000e-005	0.0000	0.3039
Total	**1.7000e-004**	**7.8000e-004**	**1.2200e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4850**	**0.4850**	**2.0000e-005**	**0.0000**	**0.4855**

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	3.3000e-004	2.2300e-003	0.0175	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.3173	2.3173	5.6000e-004	0.0000	2.3311
Total	**3.3000e-004**	**2.2300e-003**	**0.0175**	**3.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.3173**	**2.3173**	**5.6000e-004**	**0.0000**	**2.3311**

3.5 Building Construction - 2022

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	2.0000e-005	6.8000e-004	1.8000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1813	0.1813	1.0000e-005	0.0000	0.1816
Worker	1.5000e-004	1.0000e-004	1.0400e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3037	0.3037	1.0000e-005	0.0000	0.3039
Total	**1.7000e-004**	**7.8000e-004**	**1.2200e-003**	**0.0000**	**4.1000e-004**	**0.0000**	**4.1000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.4850**	**0.4850**	**2.0000e-005**	**0.0000**	**0.4855**

3.6 Paving - 2022

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	6.5100e-003	0.0657	0.0854	1.3000e-004		3.3800e-003	3.3800e-003		3.1100e-003	3.1100e-003	0.0000	11.6601	11.6601	3.7700e-003	0.0000	11.7544
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5100e-003**	**0.0657**	**0.0854**	**1.3000e-004**		**3.3800e-003**	**3.3800e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**11.6601**	**11.6601**	**3.7700e-003**	**0.0000**	**11.7544**

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.6000e-004	2.7100e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7896	0.7896	2.0000e-005	0.0000	0.7901
Total	**3.8000e-004**	**2.6000e-004**	**2.7100e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.4000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.7896**	**0.7896**	**2.0000e-005**	**0.0000**	**0.7901**

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	1.6300e-003	7.0800e-003	0.1007	1.3000e-004		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	11.6601	11.6601	3.7700e-003	0.0000	11.7544
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6300e-003**	**7.0800e-003**	**0.1007**	**1.3000e-004**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**11.6601**	**11.6601**	**3.7700e-003**	**0.0000**	**11.7544**

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.6000e-004	2.7100e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.4000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7896	0.7896	2.0000e-005	0.0000	0.7901
Total	**3.8000e-004**	**2.6000e-004**	**2.7100e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.4000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.7896**	**0.7896**	**2.0000e-005**	**0.0000**	**0.7901**

3.7 Architectural Coating - 2022

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	0.3880					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.3898**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

3.7 Architectural Coating - 2022

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	1.8000e-004	1.8800e-003	1.0000e-005	6.5000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5466	0.5466	1.0000e-005	0.0000	0.5470
Total	**2.7000e-004**	**1.8000e-004**	**1.8800e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5466**	**0.5466**	**1.0000e-005**	**0.0000**	**0.5470**

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	0.3880					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	1.1600e-003	0.0165	3.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.3882**	**1.1600e-003**	**0.0165**	**3.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

3.7 Architectural Coating - 2022

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	1.8000e-004	1.8800e-003	1.0000e-005	6.5000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5466	0.5466	1.0000e-005	0.0000	0.5470
Total	**2.7000e-004**	**1.8000e-004**	**1.8800e-003**	**1.0000e-005**	**6.5000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5466**	**0.5466**	**1.0000e-005**	**0.0000**	**0.5470**

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	0.1137	0.4371	1.2184	4.1400e-003	0.3709	3.2700e-003	0.3742	0.0993	3.0500e-003	0.1024	0.0000	382.3625	382.3625	0.0202	0.0000	382.8668
Unmitigated	0.1137	0.4371	1.2184	4.1400e-003	0.3709	3.2700e-003	0.3742	0.0993	3.0500e-003	0.1024	0.0000	382.3625	382.3625	0.0202	0.0000	382.8668

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	496.00	496.00	496.00	984,371	984,371
Total	496.00	496.00	496.00	984,371	984,371

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	6.14	6.14	6.14	42.00	18.00	40.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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	61.2771	61.2771	2.4600e-003	4.9000e-004	61.4852
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	70.3961	70.3961	2.8300e-003	5.7000e-004	70.6352
NaturalGas 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
NaturalGas 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

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					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	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					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	311446	70.3961	2.8300e-003	5.7000e-004	70.6352
Total		**70.3961**	**2.8300e-003**	**5.7000e-004**	**70.6352**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	271102	61.2771	2.4600e-003	4.9000e-004	61.4852
Total		**61.2771**	**2.4600e-003**	**4.9000e-004**	**61.4852**

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	0.2948	5.3100e-003	0.4605	2.0000e-005		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	0.7520	0.7520	7.2000e-004	0.0000	0.7701
Unmitigated	0.2948	5.3100e-003	0.4605	2.0000e-005		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	0.7520	0.7520	7.2000e-004	0.0000	0.7701

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	0.0388					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2421					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0139	5.3100e-003	0.4605	2.0000e-005		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	0.7520	0.7520	7.2000e-004	0.0000	0.7701
Total	**0.2948**	**5.3100e-003**	**0.4605**	**2.0000e-005**		**2.5500e-003**	**2.5500e-003**		**2.5500e-003**	**2.5500e-003**	**0.0000**	**0.7520**	**0.7520**	**7.2000e-004**	**0.0000**	**0.7701**

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	0.0388					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2421					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0139	5.3100e-003	0.4605	2.0000e-005		2.5500e-003	2.5500e-003		2.5500e-003	2.5500e-003	0.0000	0.7520	0.7520	7.2000e-004	0.0000	0.7701
Total	**0.2948**	**5.3100e-003**	**0.4605**	**2.0000e-005**		**2.5500e-003**	**2.5500e-003**		**2.5500e-003**	**2.5500e-003**	**0.0000**	**0.7520**	**0.7520**	**7.2000e-004**	**0.0000**	**0.7701**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	18.2866	0.1323	3.2400e-003	22.5613
Unmitigated	19.5657	0.1324	3.2500e-003	23.8447

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.03955 / 2.54667	19.5657	0.1324	3.2500e-003	23.8447
Total		**19.5657**	**0.1324**	**3.2500e-003**	**23.8447**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.03955 / 2.03734	18.2866	0.1323	3.2400e-003	22.5613
Total		**18.2866**	**0.1323**	**3.2400e-003**	**22.5613**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.3420	0.2566	0.0000	10.7571
Unmitigated	5.7893	0.3421	0.0000	14.3428

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	28.52	5.7893	0.3421	0.0000	14.3428
Total		**5.7893**	**0.3421**	**0.0000**	**14.3428**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	21.39	4.3420	0.2566	0.0000	10.7571
Total		**4.3420**	**0.2566**	**0.0000**	**10.7571**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	91.0160	0.0000	0.0000	91.0160

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Mixed Hardwood	124	91.0160	0.0000	0.0000	91.0160
Total		**91.0160**	**0.0000**	**0.0000**	**91.0160**

ATTACHMENT D

PV Watts Solar Calculations

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

306,871 kWh/Year*

System output may range from 294,964 to 308,804 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value ($)
January	4.76	20,900	3,417
February	4.95	19,918	3,257
March	6.20	26,749	4,374
April	6.81	27,894	4,561
May	6.90	29,164	4,768
June	7.26	29,698	4,856
July	7.39	30,691	5,018
August	7.37	30,089	4,919
September	6.80	27,416	4,483
October	5.69	24,295	3,972
November	4.97	20,706	3,385
December	4.32	19,351	3,164
Annual	**6.12**	**306,871**	**$ 50,174**

Location and Station Identification

Requested Location	san marcos ca
Weather Data Source	Lat, Lon: 33.13, -117.18 1.4 mi
Latitude	33.13° N
Longitude	117.18° W

PV System Specifications *(Residential)*

DC System Size	186 kW
Module Type	Standard
Array Type	Fixed (roof mount)
Array Tilt	20°
Array Azimuth	180°
System Losses	14.08%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

Economics

Average Retail Electricity Rate	0.164 $/kWh

Performance Metrics

Capacity Factor	18.8%

ATTACHMENT E

CALEEMOD 2016.3.2 (Solar GHG Estimates)

Smilax Solar

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

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

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project would install 186 kw solar

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 -

Water And Wastewater -

Energy Mitigation - Based on PVWatts, 186 kw of solar would generate 306,871 kWh per year.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblConstructionPhase	PhaseEndDate	5/2/2019	12/1/2020
tblConstructionPhase	PhaseStartDate	5/2/2019	12/1/2020
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	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
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**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**

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	-100.2881	-100.2881	-0.0040	-0.0008	-100.6379
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
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**-100.2881**	**-100.2881**	**-0.0040**	**-0.0008**	**-100.6379**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**501,440,650.00**	**501,440,650.00**	**0.00**	**0.00**	**503,189,650.00**

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	12/1/2020	12/1/2020	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; Striped Parking Area: 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

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	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

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

3.2 Site Preparation - 2020

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive 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

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	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

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-100.2881	-100.2881	-0.0040	-0.0008	-100.6379
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas 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
NaturalGas 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

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					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-306871	-100.2881	-0.0040	-0.0008	-100.6379
Total		**-100.2881**	**-0.0040**	**-0.0008**	**-100.6379**

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
Total	**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

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
Total	**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**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation