GLOBAL CLIMATE CHANGE ANALYSIS

LILAC HILLS RANCH
General Plan Amendment – 12-001
Specific Plan – 12-001
County of San Diego, CA

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TABLE OF CONTENTS

TABLE OF CONTENTS II

LIST OF FIGURES III

LIST OF TABLES III

APPENDIX III

LIST OF ACRONYMS IV

EXECUTIVE SUMMARY V

1.0 INTRODUCTION 1

1.1 PURPOSE OF THIS STUDY 1
1.2 PROJECT LOCATION 1
1.3 PROJECT DESCRIPTION 1

2.0 EXISTING ENVIRONMENTAL SETTING 7

2.1 UNDERSTANDING CLIMATE CHANGE AND GREENHOUSE GASES 7
2.2 EXISTING SETTING 11

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT 12

3.1 FEDERAL 12
3.2 STATE 14
3.3 LOCAL 26
3.4 CARBON MARKETS 26
3.5 CEQA REQUIREMENTS AND THRESHOLDS OF SIGNIFICANCE 27

4.0 METHODOLOGY 29

4.1 CONSTRUCTION CO_2E EMISSIONS CALCULATION METHODOLOGY 29
4.2 OPERATIONAL EMISSIONS CALCULATION METHODOLOGY 33
4.3 MOBILE SOURCE CALCULATIONS 33
4.4 AREA SOURCE CALCULATIONS 34
4.5 ELECTRICITY CONSUMPTION CALCULATIONS 34
4.6 NATURAL GAS CONSUMPTION CALCULATIONS 36
4.7 SOLID WASTE CALCULATIONS 36
4.8 WATER USE EMISSION CALCULATIONS 36
4.9 VEGETATION CHANGE CALCULATIONS 37

5.0 FINDINGS 39

5.1 PROJECT-RELATED CONSTRUCTION EMISSIONS 39
5.2 PROJECT-RELATED OPERATIONAL EMISSIONS 40
5.3 CALCULATED GHG EMISSIONS REDUCTIONS 41
5.4 2030 PROJECT BUILDOUT EMISSIONS 53
5.5 PLAN CONSISTENCY EVALUATION 58
5.6 CONCLUSIONS 61

6.0 REFERENCES 62

7.0 CERTIFICATIONS 65

List of Figures

FIGURE 1-A: PROJECT VICINITY MAP 5
FIGURE 1-B: PROPOSED PROJECT LAYOUT 6
FIGURE 4-A: PROJECT CONSTRUCTION SCHEDULE 30

List of Tables

TABLE 4.1: EXPECTED CONSTRUCTION EQUIPMENT (PHASE 1) 30
TABLE 4.2: EXPECTED CONSTRUCTION EQUIPMENT (PHASE 4) 31
TABLE 4.3: EXPECTED CONSTRUCTION EQUIPMENT (PHASE 2) 31
TABLE 4.4: EXPECTED CONSTRUCTION EQUIPMENT (PHASE 5) 32
TABLE 4.5: EXPECTED CONSTRUCTION EQUIPMENT (PHASE 3) 32
TABLE 4.6: PROPOSED PROJECT AS MODELED WITHIN CALEEMOD 33
TABLE 4.7: SAN DIEGO GAS & ELECTRIC ENERGY INTENSITY FACTORS 34
TABLE 5.1: EXPECTED ANNUAL CONSTRUCTION CO_2E EMISSIONS SUMMARY 39
TABLE 5.2: EXPECTED TOTAL CONSTRUCTION CO_2E EMISSIONS SUMMARY PER PHASE 40
TABLE 5.3: EXPECTED OPERATIONAL EMISSIONS SUMMARY MT/YEAR 40
TABLE 5.4: EXPECTED EV MARKET SHARE AS A % OF TOTAL NEW CARS PURCHASED 43
TABLE 5.5: ESTIMATED ON-SITE SOLAR ATTRIBUTES 52
TABLE 5.6: PROJECT GHG EMISSIONS WITH REDUCTIONS FOR DESIGN FEATURES AND MITIGATION 53
TABLE 5.7 EVALUATION OF CONSISTENCY WITH APPLICABLE GENERAL PLAN POLICIES 60

Attachments

ATTACHMENT A: CALEEMOD – ANNUAL UNMITIGATED EMISSIONS (2030) 66
ATTACHMENT B: CALEEMOD – ANNUAL MITIGATED EMISSIONS (2030) 176
ATTACHMENT C: PROJECT YEAR 2030 VEHICLE MILES TRAVELLED ANALYSIS 286
ATTACHMENT D: CONSOL ENERGY MODELING REPORT 298
ATTACHMENT E: TREE COUNT AND VEGETATION ANALYSIS 338
ATTACHMENT F: TRANSPORTATION DEMAND MANAGEMENT PROGRAM EVALUATION REPORT 372
ATTACHMENT G: ELECTRIC VEHICLE EMISSION REDUCTIONS 418
ATTACHMENT H: HIGH EFFICIENCY LIGHTING REDUCTIONS 420
ATTACHMENT I: ESTIMATED SOLAR ENERGY CALCULATIONS 422
ATTACHMENT J: CALEEMOD – SOLAR PANEL REDUCTIONS 424
ATTACHMENT K: CARB SCOPING PLAN ONSITE MITIGATION EVALUATION 443
ATTACHMENT L: CARBON OFFSET MITIGATION PER LAND USE 454

LIST OF ACRONYMS

Acre-Feet (AF)
Ammonium Nitrate Fuel Oil (ANFO)
Assembly Bill (AB)
Business as Usual (BAU)
California Air Pollution Control Officers Association's (CAPCOA)
California Air Resource Board (CARB)
California Climate Action Registry General Reporting Protocol Version 3.1 (CCARGRPV3.1)
California Emissions Estimator Model (CalEEMod)
California Energy Commission (CEC)
California Environmental Quality Act (CEQA)
Carbon Dioxide (CO_2)
Carbon Dioxide Equivalents (CO_2e)
Climate Action Plan (CAP)
Community Purpose Facilities (CPF)
Cubic Yards (CY)
Electric Vehicle (EV)
Environmental Impact Report (EIR)
Environmental Protection Agency (EPA)
Executive Order (EO)
Global Warming Potential (GWP)
Greenhouse Gas (GHG)
Intergovernmental Panel on Climate Change (IPCC)
International Residential Code (IRC)
Kilowatt Hour (kWh)
Low Carbon Fuel Standard (LCFS)
Methane (CH_4)
Metric Tons (MT)
Million Metric Tons (MMT)
Metropolitan Planning Organization (MPO)
National Highway Traffic Safety Administration (NHTSA)
Nitrous Oxide (N_2O)
Recycling Facility (RF)
Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)
Renewables Portfolio Standard (RPS)
San Diego Air Basin (SDAB)
San Diego Air Pollution Control District (SDAPCD)
San Diego Association of Governments (SANDAG)
San Diego Gas & Electric (SDG&E)
Senate Bill (SB)
Square Feet (SF)
Transportation Demand Management (TDM)
Vehicle Miles Travelled (VMT)
Water Reclamation Facility (WRF)
Zero Emissions Vehicle (ZEV)

EXECUTIVE SUMMARY

This analysis quantifies and evaluates the significance of Greenhouse Gas (GHG) emissions from the Lilac Hills Ranch project for purposes of the California Environmental Quality Act (CEQA). In order to evaluate the significance of the project's GHG emissions, this analysis uses the significance thresholds in Appendix G of the CEQA Guidelines. Specifically, this GHG emissions analysis evaluates the potential for the project to generate GHG emissions that may have a significant impact on the environment, and the potential for the project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

This analysis uses the California Emissions Estimator Model (CalEEMod), Version 2016.3.1, to estimate project emissions. CalEEMod provides a platform to calculate both construction and operational GHG emissions from land use development projects, and is used by numerous lead agencies in California – including the County of San Diego – to estimate GHG emissions in accordance with CEQA Guidelines Section 15064.4(a)(1). GHGs analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). GHG emissions are measured in metric tons of CO_2 equivalent (MT CO_2e), which accounts for the weighted global warming potential factors for CH_4 and N_2O.

The Lilac Hills Ranch project would consist of a mix of residential, commercial, recreational and open space, and institutional uses, along with necessary infrastructure. A summary overview of the various project components is provided below:

- 90,000 square feet (SF) of commercial, office, and retail uses
- 50-room country inn
- 903 single-family detached units
- 164 single-family attached units
- 211 residential units within the commercial mixed-use areas
- A designated senior neighborhood, consisting of 468 age-restricted residential units, a senior community center and a 200-bed group care facility
- A 2.0-acre area for 40,000 SF of Community Purpose Facilities (CPF), including a private recreational facility and possibly a fire station
- A K-8 School
- A community recycling facility
- Water reclamation facilities
- Public and private neighborhood parks
- Trails
- Community farming and gardens

The project also proposes to retain, as open space areas, some of the existing fruit tree groves used for agricultural purposes. Additionally, the project would preserve, in perpetuity, 104.1 acres

of biological/wetland habitat. For additional information regarding the project description, please see Chapter 1.0, Project Description, Location, and Environmental Setting, of the Final Environmental Impact Report (EIR).

The project's estimated 10-year construction period is anticipated to commence in year 2020 and be completed by year 2030. Construction activities would result in GHG emissions primarily from the use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. The project's operational-related activities, which are expected to be fully operational by 2030, would generate GHG emissions from area sources (hearths and landscape maintenance), energy sources (electricity and natural gas consumption), mobile sources (vehicle trips), water supply and wastewater treatment, and solid waste.

The project's construction-related emissions would total approximately 12,247.45 MT CO_2e. During the construction phases, the project would also remove approximately 504 acres of vegetation. Based on this analysis, the vegetation removed during construction would release approximately 5,991.10 MT CO_2e of sequestered carbon.[1]

With incorporation of various design features identified in the Lilac Hills Ranch Specific Plan that would reduce GHG emissions attributable to building energy use and vehicle use (see Section 1.3 of this analysis for a description of the referenced design features), the project's operation-related emissions would total approximately 24,093.76 MT CO_2e per year.

The project's commitment to achieve net zero GHG emissions, made enforceable through mitigation, would be realized through the purchase and retirement of carbon offsets; this framework would ensure that the project results in no net increase in GHG emissions as compared to the existing environmental setting (see CEQA Guidelines Section 15064.4(b)(1)). Because the project, with implementation of the recommended mitigation measures, would result in no net increase to the existing GHG emissions level associated with the project site, the project would not result in a project-specific or cumulatively considerable contribution to the cumulative GHG emissions that result in a significant impact to global climate change. The project's commitment to achieve net zero GHG emissions, made enforceable through mitigation, also ensures that the project would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions. In summary, the designed project with mitigation would not result in a significant impact to global climate change.

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[1] The project also would plant approximately 35,146 new trees during the construction phase. While no credit is taken for the project's tree plantings, it is estimated that those trees would beneficially sequester approximately 24,883 MT CO_2e.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this analysis is to assess the significance of the project's GHG emissions under CEQA. As such, this analysis describes the current state of climate change in California and globally; summarizes applicable laws, regulations, policies and plans; quantifies project-generated GHG emissions; evaluates the significance of the project's potential contribution to the cumulative problem of global climate change; and, recommends mitigation measures to ensure that the project does not result in a significant impact to global climate change.

1.2 Project Location

The project site is located in an unincorporated portion of San Diego County (see Figure 1-A) in the westernmost portion of the Valley Center community planning area and easternmost portion of the Bonsall community planning area, less than one-half mile from the I-15 corridor and Old Highway 395. From the northwest project corner, West Lilac Road serves as the northern boundary of the project site, while Rodriguez Road serves generally as the project boundary to the south and east. From the southwest project corner, the western boundary of the project site runs along Shirey Road and extends to Standell Lane, which serves as the northwestern project boundary (Figure 1-A). The project site is within Township 10 South, Range 3 West, Section 24, and Township 10 South, Range 2 West, Sections 19 and 30, on the USGS 7.5-minute Pala and Bonsall quadrangles.

1.3 Project Description

The project encompasses 608 acres and would consist of a mix of residential, commercial, and institutional uses, along with parks and open space. Specifically, the project would include: 90,000 square feet of commercial, office, and retail, including a 50-room country inn; 903 traditional single-family detached homes; 164 single-family attached homes; 211 residential units within the commercial mixed-use areas; and 468 single-family detached age-restricted residential units within a senior citizens neighborhood; necessary facilities and amenities to serve the senior population (including a senior community center, a group residential and group care facility, and a memory care facility); and a 2.0-acre Community Purpose Facilities (CPF) area that would be comprised of a private recreational facility and could include a fire station, with the total area of both not to exceed 40,000 square feet. The project also proposes a K-8 school, public and private parks, and other recreational amenities within a 10-minute walking distance of all the residential units. Also planned within the project site are a Recycling Facility (RF), a Water Reclamation Facility (WRF), and other supporting infrastructure.

The mixed-use, commercial, and CPF area, with adjacent parks, would form a Town Center and two Neighborhood Centers, to which residents can walk for various social and commercial needs. Open space is proposed that would retain some of the existing citrus and avocado groves; additionally, sensitive biological/wetland habitat, as well as cultural resources, would be preserved in an area totaling 104.1 acres.

The residential component of the project consists of 1,746 units with an overall density that is less than 2.9 dwelling units per acre (du/ac). Residential density within the planning areas ranges from 0.5 du/ac for the single-family units to 25 du/ac for a portion of the mixed-use area. The higher density planning areas are clustered around the mixed-use areas (Town Center and Neighborhood Centers), while single-family residences are proposed between the groves and open space, farther away from the mixed-use areas than the higher density residential uses.

The project contains three distinct mixed-use centers that provide a total of 90,000 square feet of specialty commercial and office usable area in addition to the residential and other civic uses. The three activity nodes are distributed in the northern, central, and southern portions of the project site, and have been specifically located to provide essential neighborhood commercial services within one-half-mile walking and biking distance of residential uses.

Furthermore, the project includes a 13.5-acre public community park; private neighborhood and pocket parks, most of which are available for use by the general public; multi-use trails; bike paths and bike lanes; active orchards and other agricultural uses; associated community facilities, such as a private recreation facility, community/civic center, information center, Country inn, and supporting infrastructure; as well as permanent preservation of biological open space. Also included is a complete senior neighborhood with an assisted living component, including a group care facility, and a senior center constructed on one of the private parks. Also included within the senior neighborhood is a 10-acre institutional site, which may be developed for uses such a church or other civic use.

Finally, the project will retain and promote agriculture uses in the project's common areas; e.g., community gardens. Existing agriculture uses also will be allowed to continue, but not expanded into non-disturbed land within the areas subject to biological open space easements. Figure 1-B illustrates the project layout.

The project would be constructed in five phases. A brief description of each phase is provided below. Construction of the project would require on-site grading activities that would be balanced on site; grading for off-site improvements also would occur. (The project would

also require some blasting-related activities; as such, the project's air quality study estimated the criteria air pollutants associated with blasting. Of relevance to this analysis, blasting-related activities would utilize ammonium nitrate with fuel oil (ANFO) based explosives. When ANFO detonates, the blast would produce both CO and NOx which are not considered GHGs (EPA, 1995). Please see Chapter 1.0, Project Description, Location, and Environmental Setting of the project's EIR for additional information regarding the project's construction-related activities and phasing parameters (e.g., EIR Figure 1-17 illustrates the Phasing Plan; EIR Figure 1-18 illustrates the Conceptual Grading Plan).

Phase 1 encompasses 121.5 acres and would be located in the northern portion of the project site, adjacent to West Lilac Road. This area would include 352 new single-family detached units, along with 2.4 acres of public pocket park(s), including a 1.9-acre park to accommodate a private recreational center (P-4), as detailed above. A parcel with an existing dwelling would be maintained.

Phase 2 would be located just south of Phase 1 is the only phase which is entirely surrounded by the other phases of the project (Phases 1 and 3), and is not adjacent to any existing homes or parcels. The 89.6-acre area would include the location of the Town Center and approximately 196 single-family detached units; 59 single-family attached units; 211 mixed-use residential units; 80,000 square feet of commercial space; a 0.8-acre park, with an adjacent 2.0-acre Village Green. The RF would also be located within this phase, in proximity to the future commercial center.

Phase 2 is the only phase that is completely surrounded by single-family neighborhoods within the project thus providing a transition from the more urban uses within the Town Center to the existing uses on the project boundary.

Phase 3 encompasses 223.0 acres and would be located directly south of Phase 2. This phase would include the construction of 355 single-family detached and 105 single-family attached dwelling units and 7,500 square feet of commercial space. Also located within Phase 3 are the school site, the WRF, detention basin, a 13.5-acre public park (P-7), private recreation facility, and other civic facilities. The CPF area, as described above, would be included within this phase.

Phase 4 would be located southeast of Phase 3. A total of 171 age-restricted/single-family detached homes are proposed on 61.5 acres. Primary access to Phase 4 would be via Lilac Hills Ranch Road from Phase 3. Covey Lane would provide alternative access from the east to West Lilac Road, and secondary emergency access would be provided via Street "B," connecting to Rodriguez Road on the east. Also proposed within Phase 4 are a 3.3-acre senior

center, private park, a 200-unit group care facility, a 4-acre pocket park, and a detention basin.

Phase 5 would be located directly south of Phase 4. Phase 5 would include 297 age-restricted/single-family detached homes, 2,500 square feet of commercial space, and 10.0 acres for a religious/institutional use. Also included in Phase 5 is a detention basin. Primary access would be from a connection to Lilac Hills Ranch Road constructed in Phase 4 to the north. A secondary emergency access road would be provided via Rodriguez Road to the east, and Mountain Ridge Road would provide limited access to the south. Mountain Ridge Road would be gated north of the institutional parcel, but would be opened during emergencies to facilitate evacuation of residents in the area during an emergency. This gate would provide automatic access to residents in Phase 5 with a key fob or access code.

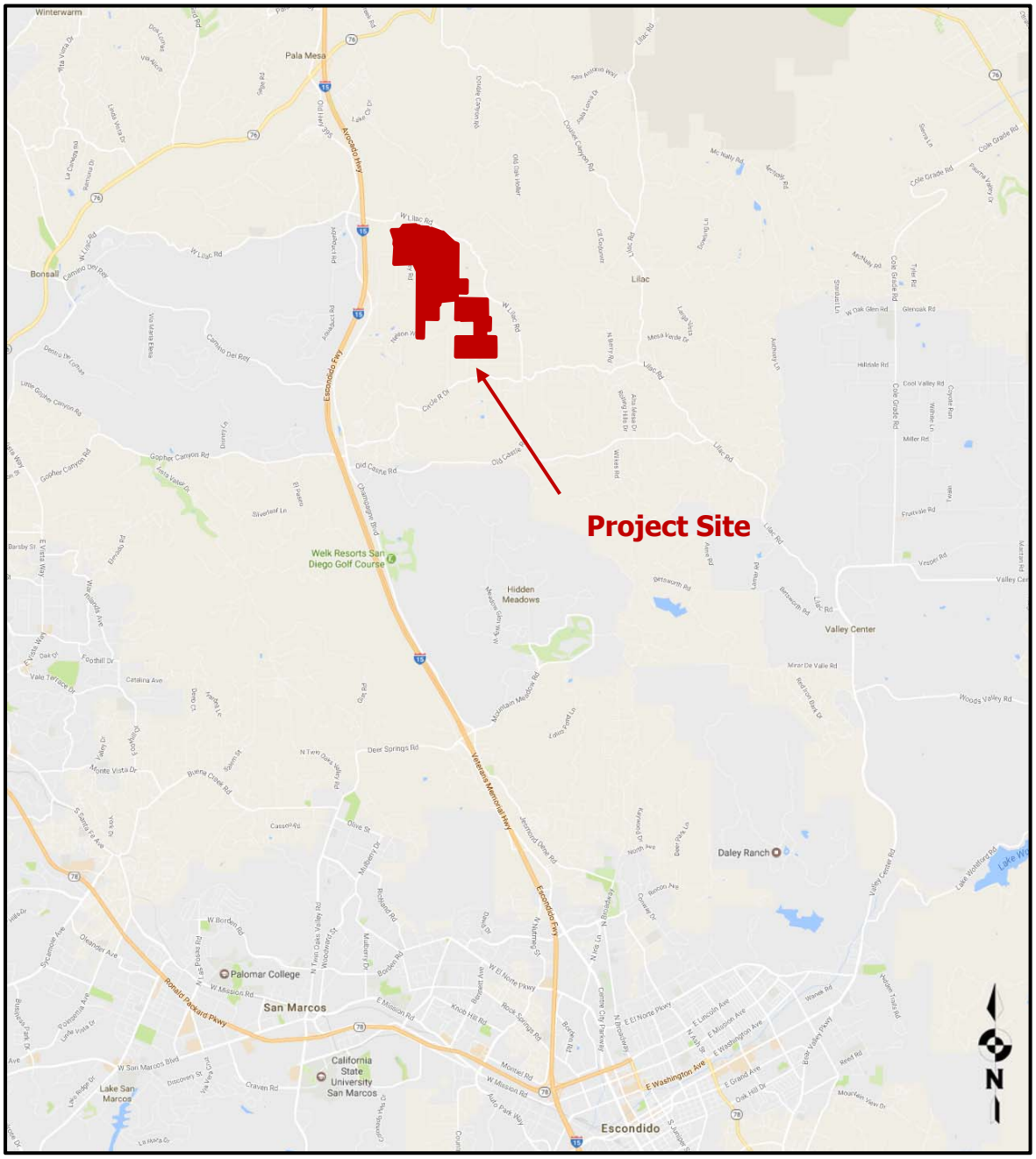
Project Design Features

The following design features of the project are relevant to the quantification of GHG emissions presented in this analysis:

- Design all residences to achieve the California Energy Commission's Zero Net Energy standards, as defined in that agency's 2015 *Integrated Energy Policy Report* (California Energy Commission, 2015).
- Provision of on-site, solar photovoltaic systems on a minimum of 45% of non-residential building roof space and on all covered parking areas. This combination of solar coverage locations (i.e., non-residential building roof space and covered parking areas) is estimated to meet approximately 100% of the non-residential land uses' demand for electricity.
- Exclusive utilization of high-efficiency (LED or equivalent) indoor and outdoor lighting in all non-residential buildings.
- Implementation of a Transportation Demand Management (TDM) program, which includes specific strategies for residents, hotel guests, and commercial employees.
- On-site installation of Level 2 electric vehicle (EV) charging stations (U.S. Department of Energy, 2017) as follows: one (1) single-port EV charging station for each of the 1,746 residential units and at least 22 dual-port EV charging stations (serving a total of 44 parking spaces) in parking areas for the non-residential uses, including the recreation center, park, school, senior center and commercial uses located within the Project site.

These design features are discussed in the Lilac Hills Ranch Specific Plan, and the implementation of these features will be required as conditions of approval from the County of San Diego.

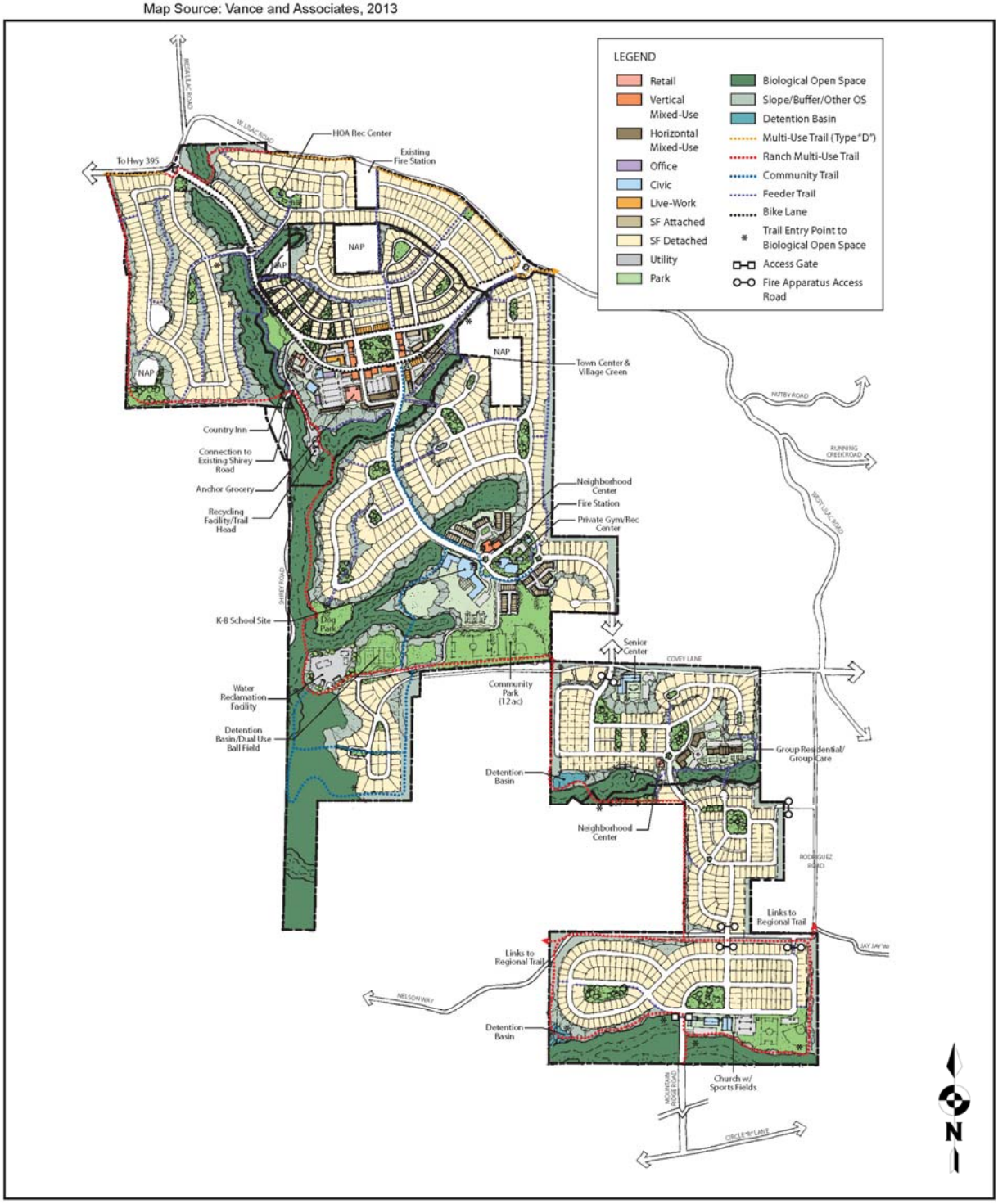
Figure 1-A: Project Vicinity Map



Source: (Google, 2017)

Figure 1-B: Proposed Project Layout

Map Source: Vance and Associates, 2013



2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding Climate Change and Greenhouse Gases

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere. The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise. A summary of current and future climate change impacts to resource areas in California, as discussed in the *Safeguarding California: Reducing Climate Risk* publication (California Natural Resources Agency, 2014), is provided below.

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought, to destructive storm events; significant shifts in water availability and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. For example, changes in weather patterns can foster longer growing periods for certain crops, but simultaneously increase the likelihood of pests. It is predicted that current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated (California Natural Resources Agency, 2014).

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. The preservation of California's unique biological heritage is of ever-increasing importance given the forecasted impacts associated with climate change. Similar to the agricultural sector, there are a number of climate change challenges the biodiversity sector must contend with, on top of the ever-increasing pressures of habitat loss and fragmentation, population growth, pollution, plant and animal diseases, and other human-induced impacts. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shift and novel combinations of species; pathogens, parasites and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss occurs).

Habitat restoration, conservation, and resource management across California and through collaborative efforts amongst public, private and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate as a result of climate change, based on geographic region. As such, it is critical to ensure habitat corridors, linkages and connectivity are established to allow species the mobility to move from place to place as resources change over time. Continued collaborative efforts are required across agencies to ensure the health of existing habitat, wildlife, and the geographic extent of their existence required to support biodiversity (California Natural Resources Agency, 2014).

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex integrated system. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events and sea level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea level rise and extreme storm events (California Natural Resources Agency, 2014).

Forestry. Forests occupy approximately 33 percent of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of carbon dioxide, renewable energy and building materials. The most significant climate change related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public

safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat and decreased carbon absorption. These losses can also negatively impact the timber industry as well as recreation opportunities. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality or other climate change effects on vegetation (California Natural Resources Agency, 2014).

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea level rise in addition to more frequent and severe coastal storms and erosion are threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities as well as negatively impacting the coastal recreational assets such as beaches and tidal wetlands. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally (California Natural Resources Agency, 2014).

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first Century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies, and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity and duration of extreme heat and heat waves are likely to increase the risk of mortality due to heat related illness as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies. Additional health impacts that may be influenced by climate change include cardiovascular disease, vector-borne diseases, mental health impacts, and malnutrition injuries. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality (California Natural Resources Agency, 2014).

Transportation. Residents of California rely on airports, seaports, public transportation and an extensive roadway network to gain access to destinations, goods and services. While the transportation industry is a source of GHG emissions it is also vulnerable to climate change risks. Particularly, sea level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand which leads to

increased pressure and pavement buckling. High temperatures can also cause rail breakages which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure which can impair movement of peoples and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety (California Natural Resources Agency, 2014).

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes and ecosystems and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the winter. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmlands throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively impact wildlife that rely on a specific range of temperatures for suitable habitat (California Natural Resources Agency, 2014).

The GHGs analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). A brief description of each GHG follows:

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities. It is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include, but are not limited to, respiration of bacteria, plants, animals, and fungi; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. CH_4 is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

To simplify greenhouse gas calculations, both CH_4 and N_2O are converted to an equivalent amount of carbon dioxide, or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). CalEEMod 2016 uses the Intergovernmental Panel on Climate Change (IPCC) report as source data for GWP factors for both CH_4 and N_2O (CAPCOA, September 2016), using the 100-year period of 25 and 298, respectively (IPCC, 2007).

2.2 Existing Setting

The subject property currently supports agricultural land that includes citrus and avocado groves. The existing agricultural operations generate GHG emissions associated with, for example, the distribution of irrigation water and vehicle trips undertaken by agricultural workers.[2] For purposes of this analysis, it has conservatively been assumed that the existing agricultural activities occurring on the project site do not emit any GHG emissions and emissions from the proposed project are treated as a net increase from existing conditions.

[2] As discussed in Subchapter 3.1.7, Utilities and Service Systems, of the project's Final EIR, the project would offset a portion of its water demand through the generation of recycled water, the utilization of groundwater that historically has been used on the project site, and the utilization of water conservation-related design features. Following implementation of these offset mechanisms, the project would result in a water demand that is less than the imported water demand associated with the existing agricultural operations.

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, HFCs, PFCs, and 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—CO_2, CH_4, N_2O, and HFCs—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.

Energy Independence and Security Act

On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the Act requires the following, which aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy

efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams/mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses and work trucks. The final standards are expected to lower carbon dioxide emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

3.2 State

State Greenhouse Gas Targets

Executive Order S-3-05

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 Assembly Bill (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 California Air Resources Board (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[3] 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
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. 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

[3] 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.

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 Senate Bill (SB) 32 (discussed

below). The strategy includes continuing the Cap-and-Trade Program through 2030,[4] 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 net 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.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under 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

[4] 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.

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).

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 2013 Title 24 standards went into effect on July 1, 2014 and were estimated to reduce energy uses between 3.8% to 36.4%, depending on the energy source and land (Architectural Energy Corporation (AEC), 2013). The current version of CalEEMod used in this analysis, as a default parameter, utilizes compliance with the 2013 Title 24 standards to estimate GHG emissions.

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% and 15% less electricity under the 2016 standards, respectively. Similarly, implementation of the 2016 standards is expected to reduce natural gas consumption by 21% in single-family homes and 31% in multi-family homes. Newly constructed non-residential buildings are estimated to achieve a 5% reduction in electricity consumption under the 2016 standards and no significant change relative to natural gas consumption (California Energy Commission, 2015).

The project would be required, at a minimum, to comply with 2016 Title 24 standards because its building construction phase would commence after January 1, 2017.

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 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 2016 standards became effective on January 1, 2017. 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 electric vehicle 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 also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 75 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

Zero Net Energy Design Goals

As recognized in the *First Update* to the *Scoping Plan*, the California Public Utilities Commission, CEC, and CARB also have a shared, established goal of achieving zero net energy for new construction in California. As background, the California Public Utilities Commission first set forth its zero net energy goals in the 2008 Energy Efficiency Strategic Plan and the 2011 Big Bold Energy Efficiency Strategies. The key policy timelines include: (1) all new residential construction in California will be zero net energy by 2020, and (2) all new commercial construction in California will be zero net energy by 2030. As most recently defined by the CEC in its 2015 *Integrated Energy Policy Report*, a zero net energy code building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building using the CEC's Time Dependent Valuation metric.

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.

<u>Mobile Sources</u>

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 the state board 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.

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.

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 within their Regional Transportation Plan. The goal of the Sustainable Communities Strategy is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If a Sustainable Communities Strategy 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.

Pursuant to Government Code Section 65080(b)(2)(K), a Sustainable Communities Strategy does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for the San Diego Association of Governments (SANDAG) are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035.

SANDAG completed and adopted its *2050 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) in October 2011. In November 2011, 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.

After SANDAG's 2050 RTP/SCS was adopted, a lawsuit was filed by the Cleveland National Forest Foundation and others. The matter was recently resolved by the California Supreme Court (Case No. S223603), which held that SANDAG did not abuse its discretion when certifying its EIR by declining to explicitly engage in an analysis of the consistency of the RTP/SCS' projected 2050 GHG emissions with the GHG reduction goals reflected in Executive Order No. S-3-05.

In 2015, SANDAG adopted the next iteration of its RTP/SCS in accordance with statutorily mandated timelines and no subsequent litigation challenge was filed. More specifically, in October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*. Like the 2050 RTP/SCS, this planning document meets CARB's 2020 and 2035 reduction targets for the region (SANDAG 2015). 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.

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 2011). To improve air quality, CARB 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, 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 (California Air Resources Board, 2012) .

The Zero Emission Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric (PHEV) vehicles 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.

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.

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.

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 2015). 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

County of San Diego Climate Action Plan

The County is in the process of developing a Climate Action Plan (CAP) that will serve as a comprehensive strategy to reduce GHG emissions in the unincorporated communities of San Diego County. The Climate Action Plan will outline specific reduction measures to reduce GHG emissions and aid the County meeting state-mandated GHG reduction targets. A draft of the Climate Action Plan was released for review and comment on August 10, 2017; the Climate Action Plan is anticipated to be completed in 2018.

County of San Diego General Plan

The County's General Plan includes smart growth and land use planning principles designed to reduce vehicle miles travelled and result in a reduction in GHG emissions. The project's consistency with applicable General Plan strategies, goals, and policies is evaluated in Subchapter 3.1.4, Land Use and Planning, of the project's Final EIR.

3.4 Carbon Markets

Like a stock, a GHG offset credit represents a unit of GHG emissions reductions – each credit essentially verifies that a certain quantity of GHG emissions has been avoided, prevented or sequestered. Offset credits are issued by a neutral, third-party registry that has undertaken the responsibility of certifying that emissions reductions have occurred in accordance with standards-based protocols, which typically set forth parameters and defined methodologies for the quantification and verification of emissions reductions.

Under CEQA Guidelines Section 15126.4(c)(3)-(4), a project's GHG emissions can be reduced by "[o]ff-site measures, including offsets that are not otherwise required" and "[m]easures that sequester greenhouse gases." As such, the CEQA Guidelines expressly allow projects to reduce GHG emissions by relying on voluntary market offsets that are not otherwise required, as well as other off-site and sequestration measures that result in GHG reductions.

3.5 CEQA Requirements and Thresholds of Significance

SB 97-Related Amendments to the CEQA Guidelines

The following discussion provides a generally applicable overview of the pertinent parameters of the CEQA Guidelines amendments that address GHG emissions.

More specifically, SB 97, enacted in 2007, expressly recognized the need to analyze GHG emissions as a part of the CEQA process. SB 97 required the Governor's Office of Planning and Research to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines to address the analysis and mitigation of GHG emissions (Pub. Resources Code Section 21083.05.) In 2010, a series of CEQA Guidelines amendments were adopted to fulfill SB 97 requirements, including revisions to Appendix G of the CEQA Guidelines. The revisions included two questions related to GHG emissions, which were intended to satisfy the Legislative directive in Public Resources Code Section 21083.05 that the effects of GHG emissions be analyzed under CEQA.

Section 15064.4 of the CEQA Guidelines was added as one of the amendments addressing GHG emissions. Section 15064.4 states that the "determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." Section 15064.4(b)(1)-(3) further states that, "a lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment: (1) the extent to which a project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) whether project emissions exceed a threshold of significance that the lead agency determines applies to the project; and, (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions."

Recognizing that GHG emissions contribute to the cumulative impact condition of global climate change, section 15064(h)(1) of the CEQA Guidelines is also applicable. Section 15064(h)(1) states that "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." A cumulative impact may be significant when the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of other past, current, and reasonably foreseeable probable future projects. As discussed above, climate change is the product of incremental contributions of GHG emissions on a global scale.

Finally, Section 15064(h)(3) of the CEQA Guidelines is pertinent. Section 15064(h)(3) states that: "[a] lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program…that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located."

Appendix G of the CEQA Guidelines

According to Appendix G of the CEQA Guidelines, a project would have a significant environmental impact 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 and previously discussed in the EIR.

4.0 METHODOLOGY

The project's GHG emissions estimates presented in this report were calculated using CalEEMod Version 2016.3.1[5]. CalEEMod provides a platform to calculate both construction and operational emissions from land use development projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with multiple air districts across the State of California, including the San Diego Air Pollution Control District (SDAPCD). Numerous lead agencies in the State, including the County of San Diego, utilize CalEEMod to estimate GHG emissions in accordance with CEQA Guidelines Section 15064.4(a)(1).

4.1 Construction CO_2e Emissions Calculation Methodology

CalEEMod estimates the total construction-related emissions from the project. In doing so, CalEEMod incorporates emission factors for construction-related equipment and vehicles from both the EMFAC2014 and OFFROAD2011 models. Specifically, CalEEMod utilizes data from EMFAC2014 for on-road vehicle emissions (i.e., emissions associated with construction worker trips on roadways) and OFFROAD2011 for off-road vehicle emissions (e.g., emissions from medium- and heavy-duty, off-road equipment).

Construction of the project is expected to commence in 2020 and conclude in 2030. Figure 4-A on the following page shows the anticipated construction schedule. Tables 4.1 through 4.5 show the proposed duration and equipment requirements of the project's various construction phases, as defined by CalEEMod. These tables, and the corresponding GHG emissions estimates, account for on-site and off-site construction-related activities associated with the project. As previously discussed, the project's blasting-related activities would not generate GHG emissions. Please see Chapter 1.0, Project Description, Location, and Environmental Setting of the project's EIR for additional information regarding the project's construction-related activities and phasing parameters (e.g., EIR Figure 1-17 illustrates the Phasing Plan; EIR Figure 1-18 illustrates the Conceptual Grading Plan).

[5] CalEEMod Version 2016.3.1 was the current version of CalEEMod when the analysis presented in this report was initiated. In October 2017, following completion of the emissions modeling presented herein, CalEEMod Version 2016.3.2 was released. CalEEMod Version 2016.3.2 includes several upgrades, the most notable of which arguably is the incorporation of percent reductions in default energy consumption to reflect compliance with the 2016 Title 24 standards. CalEEMod Version 2016.3.2 also includes multiple bug fixes, one of which overestimated annual particulate matter emissions from construction-related fugitive dust in multiple-year scenario runs. (A summary of the changes is available at the "FAQs" link on www.caleemod.com.) All CalEEMod Version 2016.3.2 updates were reviewed, and use of CalEEMod Version 2016.3.2 is not anticipated to result in greater GHG emissions compared to those estimated using CalEEMod Version 2016.3.1.

Figure 4-A: Project Construction Schedule

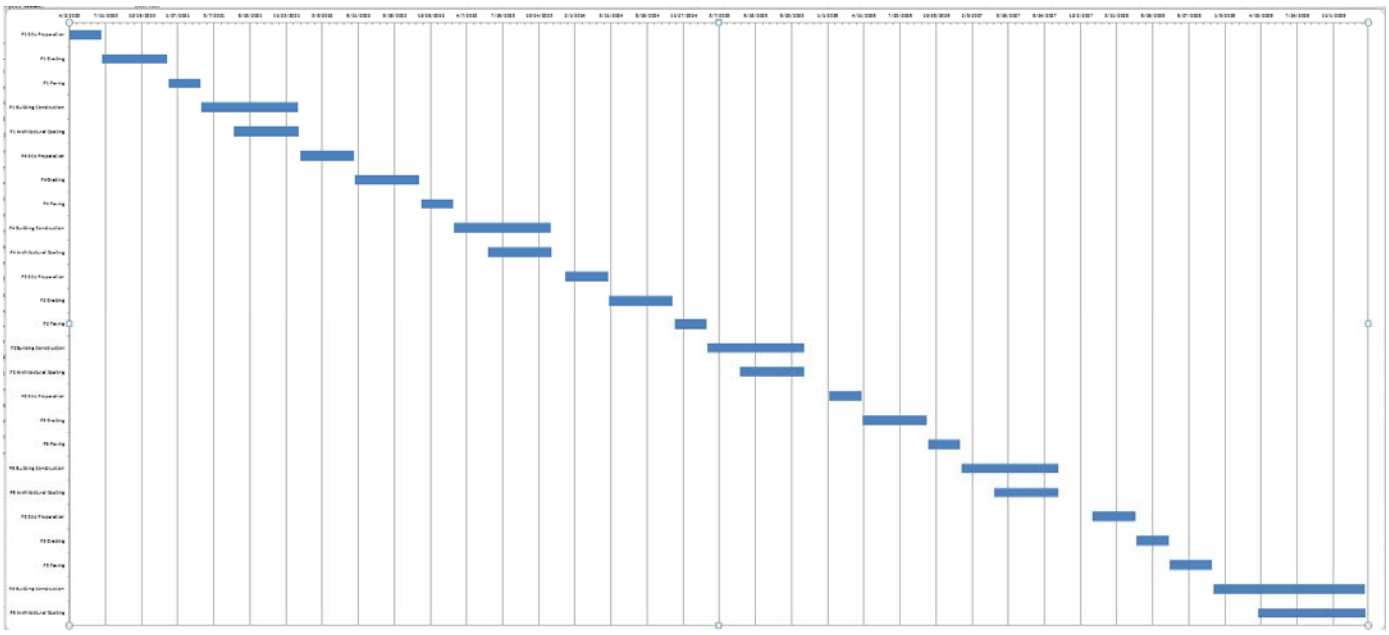


Table 4.1: Expected Construction Equipment (Phase 1)

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Phase 1 Site Prep	4/3/2020	6/30/2020	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Phase 1 Grading	7/1/2020	12/31/2020	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Phase 1 Paving	1/1/2021	3/29/2021	
Pavers			2
Paving Equipment			2
Rollers			2
Phase 1 Building Construction	4/1/2021	12/31/2021	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Phase 1 Architectural Coating	7/1/2021	12/31/2021	
Air Compressors			1
This equipment list is consistent with the project's Air Quality Technical Report, RECON 2015.			

Table 4.2: Expected Construction Equipment (Phase 4)

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Phase 4 Site Prep	1/2/2022	6/1/2022	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Phase 4 Grading	6/2/2022	11/29/2022	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Phase 4 Paving	12/2/2022	3/1/2023	
Pavers			2
Paving Equipment			2
Rollers			2
Phase 4 Building Construction	3/3/2023	12/1/2023	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Phase 4 Architectural Coating	6/5/2023	12/1/2023	
Air Compressors			1
This equipment list is consistent with the project's Air Quality Technical Report, RECON 2015.			

Table 4.3: Expected Construction Equipment (Phase 2)

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Phase 2 Site Prep	1/5/2024	5/4/2024	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Phase 2 Grading	5/5/2024	11/2/2024	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Phase 2 Paving	11/3/2024	1/31/2025	
Pavers			2
Paving Equipment			2
Rollers			2
Phase 2 Building Construction	2/1/2025	10/30/2025	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Phase 2 Architectural Coating	5/2/2025	10/30/2025	
Air Compressors			1
This equipment list is consistent with the project's Air Quality Technical Report, RECON 2015.			

Table 4.4: Expected Construction Equipment (Phase 5)

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Phase 5 Site Prep	1/5/2026	4/6/2026	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Phase 5 Grading	4/7/2026	10/5/2026	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Phase 5 Paving	10/6/2026	1/5/2027	
Pavers			2
Paving Equipment			2
Rollers			2
Phase 5 Building Construction	1/6/2027	10/4/2027	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Phase 5 Architectural Coating	4/6/2027	10/4/2027	
Air Compressors			1
This equipment list is consistent with the project's Air Quality Technical Report, RECON 2015.			

Table 4.5: Expected Construction Equipment (Phase 3)

Equipment Identification	Proposed Start	Proposed Finish	Quantity
Phase 3 Site Prep	1/5/2028	5/4/2028	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Phase 3 Grading	5/2/2029	7/31/2029	
Excavators			2
Graders			1
Rubber Tired Dozers			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Phase 3 Paving	8/5/2028	12/3/2028	
Pavers			2
Paving Equipment			2
Rollers			2
Phase 3 Building Construction	12/4/2028	2/4/2030	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Phase 3 Architectural Coating	4/7/2029	2/4/2030	
Air Compressors			1
This equipment list is consistent with the project's Air Quality Technical Report, RECON 2015.			

4.2 Operational Emissions Calculation Methodology

Operation of the project would generate GHG emissions, as calculated by CalEEMod, from area, energy, mobile, solid waste and water uses. The project's proposed land uses, as modeled within CalEEMod, are shown in Table 4.6 below. The annual CalEEMod model outputs are shown in the project's unmitigated model, included as ***Attachment A*** to this report. The project's mitigated model is included as ***Attachment B*** to this report.

Table 4.6: Proposed Project as Modeled within CalEEMod

Project Land Use	CalEEMod Land Use	Proposed Size
Commercial and Mixed Use	Office Park	28,500 square feet
Elementary School (K-5)	Elementary School	568 students
Middle School (6–8)	Junior High School	132 students
Institutional	Place of Worship	10,700 square feet
Water Reclamation	User Defined Industrial	2.4 acre
Recycling Center	User Defined Industrial	0.6 acre
Public and Private Parks	City Park	23.8 acre
County Inn	Hotel	50 rooms
Community Purpose Facility	User Defined Recreational	40,000 square feet
Single–family attached/ residential mixed-use units	Condo/Townhouse	375 du
Assisted Living	Congregate Care (Assisted Living)	200 du
Senior Citizen Community	Retirement Community	468 du
Single Family	Single Family Housing	903 du
Specialty Commercial	Strip Mall	61,500 square feet

4.3 Mobile Source Calculations

CalEEMod calculates the GHG emissions associated with on-road mobile sources, such as the light-duty vehicles and trucks that would be driven by the project's residents, workers, and customers, as well as delivery vehicles visiting the land use types in the project. The emissions associated with on-road mobile sources include running and starting exhaust emissions, evaporative emissions, brake and tire wear, and fugitive dust from paved and unpaved roads. With the exception of starting and evaporative emissions, which are associated with the number of starts or time between vehicle uses, all of the other categories of mobile source emissions are dependent on vehicle miles travelled (VMT).

Linscott, Law and Greenspan, Engineers (LLG), the project's transportation/traffic consulting firm, prepared a memorandum that calculates the project's total VMT in 2030 (LLG Engineers, 2017). Based on that assessment, it was found that the project would generate 85,566,385 VMT per year. The VMT was calculated for the project's build-out year (2030) using information from SANDAG's traffic model; to calculate the annual VMT, the daily weekday and weekend VMT amounts were multiplied by their respective number of days in a year. The project's VMT total identified in this paragraph does not account for implementation of the project's TDM program. These VMT results were incorporated into CalEEMod, and a copy of LLG's memorandum is provided as ***Attachment C*** to this report.

4.4 Area Source Calculations

The area source module within CalEEMod is used to calculate direct sources of GHG emissions located at the project site. Area sources include hearths, consumer product use, architectural coatings, and landscape maintenance equipment. For this analysis, all residential units would only include natural gas hearths. Based on discussions with ConSol, a building energy efficiency consultant retained by the project applicant, residential heating loads are met by either natural gas furnaces or natural gas hearths (e.g., fireplaces). Accordingly, any natural gas hearth usage would offset natural gas furnace usage. Therefore, this analysis assumes that the natural gas consumption of hearths in residential units already is accounted for in ConSol's modeling (see ***Attachment D*** to this report). It should be noted that the project's 200 assisted living units would not include hearth options by design.

4.5 Electricity Consumption Calculations

GHGs from electrical usage are calculated using energy-intensity factors. CalEEMod's default factors for San Diego Gas & Electric (SDG&E) reflect SDG&E's emissions rate in 2009. In 2009, SDG&E achieved 10.5 percent procurement of renewable energy (California Public Utilities Commission, 2016). The state mandate for renewable energy under SB 350 is 50 percent by 2030. Given this, SDG&E energy-intensity factors for 2030, as modeled within CalEEMod, are shown in Table 4.7.

Table 4.7: San Diego Gas & Electric Energy Intensity Factors

GHG	2009 Factors (lbs/MWh) w/10.5% RPS	SDGE Emission Factors without Renewables	2030 Factors - 50% Renewables (lbs/MWh)
Carbon Dioxide (CO_2)	720.49	805.017	402.508
Methane (CH_4)	0.029	0.032	0.016
Nitrous Oxide (N_2O)	0.006	0.007	0.0034

ConSol, a building energy efficiency consultant, was retained to calculate the residential energy demand for the project. ConSol modeled the energy demand of prototype residences with CEC's public-domain compliance software, known as California Building Energy Code Compliance – Residential. The three residential prototypes included in ConSol's analysis include: (1) a 2,067 SF single-family residence, and (2) a 3,242 SF single-family residence, and (3) an 8-plex multi-family building. For purposes of CalEEMod, the project's single-family residences were assumed to be split equally between the smaller and larger prototypes evaluated by ConSol. The smaller prototype was utilized for the 468-unit, age-restricted community.

The ConSol modeling uses the CEC's public-domain compliance software, California Building Energy Code Compliance – Residential (CBECC-Res), which calculates Title 24 compliance and annual energy use. The estimated energy use of each prototype was calculated for both a code-based compliance scenario and a Zero Net Energy attainment scenario. ConSol's report also separates both electrical and natural gas demand into regulated and unregulated loads. Regulated loads are attributed to sources such as heating, cooling and water heating. Unregulated loads are attributed to interior and exterior lighting, appliances, cooking and other plug loads. ConSol's report is provided as ***Attachment D*** to this report.

For purposes of this analysis, the project's GHG emissions were estimated utilizing ConSol's code-based compliance scenario, which assumed that each of the residential prototypes was designed in accordance with the 2016 Title 24 standards. The project's GHG emissions also were estimated utilizing ConSol's Zero Net Energy attainment scenario, consistent with the project's energy efficiency design feature for residential buildings set forth in the Specific Plan (see Section 1.3 above). ConSol's Zero Net Energy attainment scenario assumed that each of the project's residential prototypes was designed in accordance with the CEC's definition of Zero Net Energy. Based on ConSol's analysis, the project's residences can achieve Zero Net Energy through a combination of energy efficiency enhancements to the building envelope and regulated loads, and the provision of on-site solar.

Default CalEEMod energy inputs for all other non-residential land uses not modeled by ConSol were based on the 2013 Title 24 standards. Since the 2016 Title 24 standards currently are applicable, the project's non-residential buildings would have a reduction from the 2013 Title 24 standards of 5 percent for electricity and no significant reduction for natural gas (California Energy Commission, 2015).

As a design feature set forth in the project's Specific Plan, the project's non-residential buildings would exclusively utilize high-efficiency indoor and outdoor lighting. One example of high-efficiency lighting is light-emitting diode (LED) lighting. LED indoor lighting is 75-90% more efficient than standard lighting. For example: a 10 watt LED bulb replaces a 60 watt

standard bulb, which would be 83% more efficient. A typical 15 watt LED bulb has an equivalent rating of a 100 watt standard bulb. Outdoor LED 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 and is further discussed in Section 5.3 of this report.

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 standards.

4.6 Natural Gas Consumption Calculations

Natural gas consumption for the project's residential units was based on ConSol's modeling, as discussed in Section 4.5 above. Natural gas inputs for the remaining non-residential uses were represented by CalEEMod default settings.

4.7 Solid Waste Calculations

CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill. The program uses annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses. If waste disposal information was not available, waste generation data was used. CalEEMod also uses the overall California Waste Stream composition to generate the necessary types of different waste disposed into landfills (CAPCOA, 2016). Solid waste-related emissions for the project were based on CalEEMod default settings.

4.8 Water Use Emission Calculations

The project's water demand assessment determined that the project would require approximately 1,246 Acre-Feet (AF) per year, before accounting for water conservation measures the project is planning to implement. The project's conservation measures would reduce the project's water demand to 935 AF per year (Dexter Wilson Engineering, INC., 2015). The project's EIR (see Subchapter 3.1.7, Utilities and Service Systems) found that this total yearly demand could be met by various water sources, which include: potable water from the local water purveyor, groundwater from wells, recycled water, and harvested rain water. For purposes of this analysis, it was assumed that all water would be from potable

sources; this is a conservative assumption because potable water sources would be the most intense in terms of GHG emissions generation. In terms of wastewater, the project would generate approximately 292 AF per year of wastewater, which would be equivalent to indoor water usage within CalEEMod. Also, since the project uses 935 AF per year after all design features are implemented, 643 AF per year of exterior water demand would be expected. It should be noted that the exterior demand would be made up of both potable and non-potable water, with about 160 AF per year coming from potable sources and the remaining 483 AF per year from non-potable sources (Dexter Wilson Engineering, INC., 2015).

4.9 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 conditions generally are avocado and citrus groves with some grasslands, coastal sage and riparian areas. In addition to planting trees within individual residential lots and at park-related amenities, the project's Specific Plan also provides for trees to be planted on slopes, along streets, within HOA open space areas, and around all perimeters of the project to visually buffer the community from view as shown on the Master Landscape Concept Plan (see Specific Plan, Figure 70).

Site landscape shall require the approval of a Landscape Plan(s) from the County's Planning & Development Services Department; the plan(s) shall comply with the County's Water Conservation in Landscape Ordinance, the Water Efficiency Landscape Design Manual, and other applicable regulatory standards identified in the project's Specific Plan. Native trees and shrubs, such as Sycamores, Oaks, Madrone, Currant and Toyon as well as local Apricot, Lemon, Orange, Guava, and Avocado, may be planted along parkways. Natural materials, rural styled fencing, and grove-like plantings of trees will be utilized throughout the project to relate to and enhance the rural visual setting consistent with the applicable provisions of the Design Guidelines of the project's Specific Plan.

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. By this logic, removing trees in excess of 20 years and replacing them with new trees would significantly increase sequestration.

The project would remove approximately 504 acres of vegetation, based on the project's Biological Resources Report prepared by RECON, 2015 (see EIR Appendix G). The project would also plant approximately 35,146 new trees, based on the project's Landscape Report (Wimmer Yamada and Caughey, 2017). The vegetation removal for each phase of project development was incorporated into CalEEMod, and information regarding proposed tree plantings is provided in ***Attachment E*** to this report. As calculated by CalEEMod, the project's removal of existing vegetation would release a total of approximately 5,991.1 MT CO_2e of carbon that presently is sequestered in the existing vegetation.

It should be noted, for purposes of this analysis, carbon sequestration credit for the new trees planted was not taken in the impact evaluation that follows in Section 5.4 of this report. For disclosure purposes only, CalEEMod estimates that the new tree plantings would sequester approximately 24,883 MT CO_2e which will result in a net offset of 18,892 MT CO_2e.

5.0 FINDINGS

5.1 Project-Related Construction Emissions

Utilizing the CalEEMod inputs shown in Tables 4.1 through 4.5 above, construction of the project will produce approximately 12,247.45 MT CO_2e. A summary of the construction emissions is shown in Table 5.1. The CalEEMod outputs are provided in ***Attachment A***.

Table 5.1: Expected Annual Construction CO_2e Emissions Summary

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT)
2020	0.00	478.58	478.58	0.15	0.00	482.35
2021	0.00	1,955.81	1,955.81	0.16	0.00	1,959.69
2022	0.00	569.68	569.68	0.18	0.00	574.16
2023	0.00	1,831.54	1,831.54	0.14	0.00	1,834.96
2024	0.00	555.19	555.19	0.18	0.00	559.57
2025	0.00	1,717.24	1,717.24	0.12	0.00	1,720.34
2026	0.00	541.43	541.43	0.17	0.00	545.71
2027	0.00	1,633.84	1,633.84	0.11	0.00	1,636.70
2028	0.00	393.27	393.27	0.09	0.00	395.42
2029	0.00	2,321.74	2,321.74	0.21	0.00	2,326.91
2030	0.00	211.42	211.42	0.01	0.00	211.64
					Construction Subtotal	**12,247.45**
					Removal of Existing Vegetation	**5,991.10**
					Construction Total	**18,238.55**
Expected construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Tables 4.1 through 4.5 above.						

As noted in Section 4.9 of this report, during the construction phase of the project, approximately 504 acres of vegetation will be removed though modified and replanted. The sequestered carbon released as a result of the removal of existing vegetation for each phase per the Project's Biological Report (RECON), which totals 5,991.1 MT CO_2e, is shown in Table 5.1 and would result in a total construction emission of 18,238.55 MT CO_2e. Replanting and modification of the land uses changed as part of this project will increase sequestration though to present a worst-case analysis, credit has not been applied to project construction emissions. Table 5.2 below also identifies the construction-related GHG emissions attributable to each of the project's five phases.

Table 5.2: Expected Total Construction CO_2e Emissions Summary Per Phase

Phase	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e (MT)	CO_2e (MT) With Loss of Vegetation
Phase 1	0.00	2,434.39	2,434.39	0.31	0.00	2,442.04	3,840.65
Phase 4	0.00	2,401.22	2,401.22	0.32	0.00	2,409.12	3,908.61
Phase 2	0.00	2,272.43	2,272.43	0.30	0.00	2,279.91	2,461.64
Phase 5	0.00	2,175.27	2,175.27	0.28	0.00	2,182.41	2,858.61
Phase 3	0.00	2,926.43	2,926.43	0.31	0.00	2,933.97	5,169.04
					Total	**12,247.45**	**18,238.55**

Expected construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Tables 4.1 through 4.5 above.

5.2 Project-Related Operational Emissions

As previously discussed, emissions generated from area, energy, mobile, solid waste and water uses are calculated within CalEEMod. The project's operational emissions, prior to incorporation of the project design features set forth in the Specific Plan and the recommended mitigation measures, are 33,211.82 MT CO_2e per year. A summary of the operational emissions is shown in Table 5.3 below. The CalEEMod outputs are provided in ***Attachment A***.

Table 5.3: Expected Operational Emissions Summary MT/Year

Year 2030	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e (MT/Yr)
Area	0.00	23.62	23.62	0.02	0.00	24.18
Energy	0.00	4,626.65	4,626.65	0.14	0.06	4,622.06
Mobile	0.00	26,251.80	26,251.80	1.22	0.00	26,282.26
Waste	522.43	0.00	522.43	30.87	0.00	1,294.30
Water	30.19	856.76	886.94	3.13	0.08	989.02
					Total	**33,211.82**

Data is presented in decimal format and may have minor rounding variations.

5.3 Calculated GHG Emissions Reductions

VMT Reduction Evaluation – Transportation Demand Management (Specific Plan-Mandated Design Feature)

The project will implement a TDM program with strategies for all proposed land uses, such that residents, workers and hotel guests would ultimately reduce GHGs as a result of reductions in VMT (FEHR & PEERS, 2017). The project would include the following:

Strategies for Residents

- Interim Transit Pool Program/Vanpool (provided until public transit services are available)
- Interim Private Transit Services (provided until public transit services are available)
- Carpool Matching Program
- Guaranteed Ride Home Program
- Car Share Program
- Subsidized Transit Pass Program
- Bike Share Program
- School Pool Program
- School Bus Program
- Walking School Bus Program
- Unbundled Parking Program
- TDM Strategy Marketing

Strategies for Hotel Guests

- Interim Private Transit Services (provided until public transit services are available)
- Bike Share Program
- Hotel Shuttle Service

Strategies for Employees

- Employee Vanpool/Shuttle Services
- Employee Trip Reduction Through Telecommuting and Staggered Work Hours
- Carpool Matching Program
- Employee Parking Cash-Out Program
- Subsidized Transit Pass Program
- TDM Program Marketing

Land Use and Design Strategies

- Transit Facility Optimization (Coordination of Future Public Transit Stops)
- Bicycle Circulation Improvements
- Traffic Calming

The project's VMT assessment (see ***Attachment C*** to this report) determined that the project would generate 85,566,385 VMT per year (LLG Engineers, 2017). Based on the Fehr & Peers' TDM analysis (which is provided as ***Attachment F*** to this report), an 8.1% reduction in total VMT would be achieved through implementation of the project's TDM program. This reduces

the project's total VMT from 85,566,385 to 78,635,560 (59,314,573 residential VMT and 19,320,987 non-residential VMT). Based on emissions from CalEEMod, mobile emissions would be 26,282.26 MT CO_2e prior to accounting for the TDM features and 24,235.22 MT CO_2e after accounting for the TDM features. Based on CalEEMod modeling, the TDM features would reduce emissions by 2,047.04 MT.

Zero Emission Vehicle Usage

To begin, the electrification of California's transportation sector is recognized by CARB and other state, regional and local agencies as a critical element of the State's attainment of its 2030 and 2050 reduction targets. Indeed, CARB's *Second Update* to the *Scoping Plan* (as adopted in December 2017) seeks to have 1.5 million ZEVs on California's roadways in 2025 and 4.2 million ZEVs by 2030. The plan would require billions of dollars in investment, and would deploy ZEVs across all classes of vehicles and would accelerate deployment of alternative fueling infrastructure.

Relatedly, the emissions reduction benefits of ZEVs are substantial. As background, while a standard petroleum-based car is rated in miles per gallon (MPG), ZEVs are typically rated in kilowatt hours per 100 miles traveled. The U.S. Department of Energy has developed a miles per gallon gasoline equivalent unit (MPGe) of 0.337 kWh/100 miles traveled (Department of Energy, 2000). The U.S. Department of Energy estimates that the average fuel economy for ZEVs in 2017 is as high as 136 MPGe for the midsize Hyundai Ioniq, having a range of 124 miles. The higher range Tesla Model S can achieve a range of 335 miles with a fuel efficiency of 102 MPGe.

Information Regarding Vehicle Marketplace Conditions and Trends.

In 2015, 17,836,000 new vehicles and 38,276,140 used vehicles were sold within the United States (Davis, October 2016) (Edmonds, 2016), for a total of 56,112,140 vehicle sales. There also were 218.084 million licensed drivers in 2015 (Statista, 2016). Based on this, roughly 25.7% of drivers buy a vehicle each year and, of that total, 8% will buy a new vehicle and 92% will buy a used vehicle.

In 2015, 2,052,750 light-duty vehicles were sold in California (California New Car Dealers Association, 2016). Total light-duty vehicle registration was 24,487,807 (CA DMV, 2016), which makes new cars roughly 8.4% of total registration, this statewide data point generally correlates with the nationwide data points. Also, it should be noted that Californians are responsible for between 45% and 55% of all electric vehicle sales within the United States. As of 2016, Californians drive 47% of all EVs on the road in the U.S. (Office of Governor Edmund G. Brown Jr., 2016). Between March 2010 and July 2016, more than 223,000 EVs were sold in California (California Energy Commission, 2016).

In 2015, 1.7% of all new vehicle sales in California were for plug-in EVs (California New Car Dealers Association, 2016). In 2040, it's estimated that California's EV market share will be 35% of all new vehicles sold that year (Bloomberg New Energy Finance, 2016). Based on this, an annual average EV sales increase of 11.8% needs to be realized in order to achieve a 35% market share by 2040. Using this interpolated methodology, in 2030, it is expected that at least 11.76% of all new vehicles in California would be EVs.

Additional information regarding the EV penetration forecasts for California utilized in this analysis are provided in Table 5.4. It should be noted that the information in Table 5.4 pertains to new car sales in California and does not account for the larger scaled used car market described herein.

Table 5.4: Expected EV Market Share as a % of Total New Cars Purchased

Year	EV Market Share (%) - California	Total EV Sold per year - California
2015	1.70%[2]	34,897[5]
2020	3.79%	77,728
2025	6.67%	136,983
2030	11.76%	241,411
2035	20.73%	425,449
2040	35.00%[4]	718,463

[1] 2015 Auto Sales: 2,052,750. Source: (California New Car Dealers Association, 2016)
[2] Source: (LA Times, May 2017)
[3] Calculated 11.8% average annual increase expected from 2017 to 2040 to reach 35% new EV market share by 2040.
[4] Source: (Bloomberg New Energy Finance, 2016)
[5] Based on information published by the California Energy Commission, 223,000 EVs had been purchased in California between 2010 and 2016.

As stated above, 92% of all vehicles sold within the US are used vehicles, used EV purchases would also be expected within the Lilac Hills Ranch community. Used EV markets would reflect the availability of EVs from prior model years, and would likely be dependent on availability and costs. While some of the financial incentives for purchasing a new EV may not be available within the used EV market, it is reasonable to expect that incentives received by new buyers would be reflected in each car's resale price. This information is consistent based on used EV research by Fleetcarma, EV sales are typically very reasonable. "In 2017, the electrified Ford sells for less than $10,000 on the used market. The Focus Electric is not alone. Used models of the Nissan Leaf, Smart Fortwo Electric Drive and Fiat 500e start around $6,000. These prices speak for themselves, and the odometers inside the cars rarely read higher than 40,000 miles." (Fleetcarma, 2017).

Information Regarding Factors That Influence Purchasing Decisions.

There are a number of key characteristics and factors that impact if and when people purchase an EV. The key factors that influence the decision to purchase an EV include the ability to charge at home or work, battery range, recharging infrastructure, purchase price, rebates and tax credits, operating cost and environmental influences (i.e., "being green"). A 2016 survey conducted by the Union of Concerned Scientists (UCS) found that more than 54% of California drivers are likely to consider an EV in their next vehicle purchase or lease, and more than 65% are interested in EVs (Consumers Union Policy & Action from Consumer Roports, 2016).

EV purchasing behavior suggests that price is the barrier to adoption of EVs, with cost including the initial purchase cost of the vehicle and the subsequent operating costs. Historically, the purchase price of an EV used to be about $8,000 to $10,000 higher than comparable internal combustion vehicles, prior to application of incentives (such as state and federal tax rebates and credits, like the California Clean Vehicle Rebate Project). Since the introduction of more competition in the marketplace attributable to the number of EV manufacturers and models, the comparative costs have declined by $5,000 to $10,000 (Edmonds, 2016). Additionally, since 2007, the cost of EV batteries has declined over the years from $1,000/kWh to $410/kWh and is expected to decrease further (Yirka, 2015).

EV operating costs also tend to be lower than those associated with conventional gas vehicles. For example, electricity costs per-mile typically pale in comparison to even the most efficient comparable gas vehicles. A study conducted by Fleetcarma looked at seven of the leading EVs and compared them to their closest gas-fueled equivalents. The study used current average electric and gas prices and calculated costs per mile for each model and found some offering significant cost-of-ownership savings over time and a full recoup of cost in a normal vehicle lifecycle (McDonald, 2016). In addition to operational cost savings, other benefits are associated with the utilization of EVs, such as access to HOV lanes for single drivers that can serve to reduce commute times and preferred EV parking.

As noted above, the range that an EV can travel on one charge also is a key topic associated with the decision to purchase an EV. With the recent increase in battery charge ranges from EVs and the increasing presence of publicly available charging stations in the near horizon, the issue of "range" is expected to diminish in importance. For example, Tesla launched the new Model 3 for around $35,000 and advertised over 200 miles in range on a single charge. Tesla confirmed having received nearly 400,000 Model 3 reservations since its unveiling in March 2016 (Fehrenbacher, 2016).

The overall charging network and charging station availability also is of interest to potential EV buyers. Numerous studies have shown that EV charging currently occurs primarily at home, and this will most likely continue with the remaining EV charging occurring at work and retail stores. Charging stations outside the home are also critical to EV conversion.

California is making significant progress in both ZEV infrastructure construction and vehicle deployment. One regionally-specific example is the Charge Ready Program, administered by Southern California Edison, which calls for approximately 1,500 charging stations at 150 workplaces, multi-unit dwellings, fleets and destination centers, and requires time-of-use rates and demand response capabilities for these facilities. Additionally, the Power Your Drive Program, administered by San Diego Gas & Electric, authorizes roughly 3,500 charging stations at 350 workplaces and multi-unit dwellings, as well as a vehicle-grid integration rate to incentivize charging that is responsive to dynamic, location-based electricity rates that will help integrate renewable energy and avoid infrastructure and capacity upgrades.

Project-Specific Analysis.

With this relevant background information in place, the TDM program evaluation conducted for this project determined that the residential population for the project would be 5,185 persons (FEHR & PEERS, 2017). Based on studies conducted by the Federal Highway Administration, there were 639 drivers per 1,000 residents in the State of California (Federal Highway Administration, 2017). Therefore, out of the 5,185 project residents, it is estimated that 3,313 residents would be driving in 2030.

CalEEMod incorporates emission factors for on-road mobile sources from the EMFAC2014 model. Based on the EMFAC2014 projections for the year 2030, California would have 32.25 million vehicles on the road; EMFAC2014 assumes that 1.96 million of those vehicles would be electric. This equates to roughly 6% of the vehicle fleet in the year 2030 being electric. However, as discussed above, CARB's *Second Update* to the *Scoping Plan* (which incorporates information from CARB's Mobile Source Strategy (2016)) seeks to have 4.2 million ZEVs on California's roadways by 2030. This would increase the electric vehicle market to 13% of the market share, or a 7% increase over what EMFAC 2014 estimates and is accounted for in CalEEMod.

The project seeks to maximize the usage of ZEVs through project design features that require the installation of on-site charging infrastructure. Specifically, the project would install Level 2 EV charging stations on the project site as follows: one (1) Level 2 single-port charging station for each of the 1,746 residential units, and at least 22 Level 2 dual-port EV charging stations (serving a total of 44 parking spaces) throughout the common parking areas for the

on-site non-residential uses.[6] Additional details and emissions reductions from the off-site charging stations is provided below. For purposes of this analysis, and the charging infrastructure proposed by the project to support the deployment of ZEVs, Level 2 charging stations are 220 volt chargers that can provide between 7.2 and 19.2 kW of power depending on the charging systems amperage rating. Based on this, for a 100 MPGe vehicle, each hour of charging will provide a range of 21.36 miles to 56.97 miles from a Level 2 charger, assuming a standard 100 MPGe rating.

Residential On-Site EV Charging Stations (Specific Plan-Mandated Design Feature)

Based on the project's commitment to provide extensive EV charging infrastructure, which includes 1,746 charging stations at the residential units, the project will facilitate the utilization of electric vehicles. Therefore, an additional 7% conversion to ZEV-driven residential miles was assumed in this analysis, consistent with the fleet projections identified in CARB's *Second Update* to the *Scoping Plan*. In other words, with implementation of the residential on-site charging network, at least 13% (6% +7%) of the total trips generated by the project would be from some sort of ZEV. Of the anticipated 3,313 residential drivers, it is estimated that 431 drivers would operate ZEVs, of which 199 drivers were assumed to be present without adding any project design features per the EMFAC emission factors. Project design features, therefore, would increase the number of ZEVs operated by the project's homeowners by 232 ZEVs.

As discussed in Section 3.2 of this report, ZEVs include BEVs, PHEVs and FCEVs, though for purposes of this analysis, due to the limited infrastructure for FCEVs, only PHEVs and BEVs will be considered as project-related ZEVs. Given this, the expected ZEV fleet breakdown for the project is expected to be roughly 60% PHEVs and 40% BEVs (California Energy Commission, 2016). Based on this breakdown, out of the 232 ZEVs estimated above as attributable to the project design features, the project would add 139 PHEVs (232 x 60%)

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6 The project also would install up to 13 Level 2 dual-port charging stations (capable of servicing 26 parking spaces) at off-site locations in the project's vicinity (see mitigation measure GHG-1 below). Additional details and emissions reductions from the off-site charging stations is provided below. It is anticipated that any off-site EV charging stations would be installed in existing developed areas and require limited ground disturbance in such developed areas. For example, the charging stations may be located in areas that include, but are not limited to, retail centers, employment centers, recreational facilities, schools, and other categories of public facilities.

Based on an initial screening, the off-site charging stations are not expected to result in significant environmental impacts to any of the resource categories identified in Appendix G of the CEQA Guidelines because of the minor scope and intensity associated with the installation of charging stations. Specifically, the construction activities associated with such stations primarily are limited to electrical work, and are not expected to require either additional or substantial ground disturbance. This characterization is consistent with Section 91.1.105.3.1.2 of the County's Municipal Code, which provides for streamlined processing of electric vehicle charging station permits, where the charging system meets referenced requirements.

and 93 BEVs (232 x 40%). These vehicles would take the place of regular internal combustion engine vehicles.

Since PHEVs can both operate as an EV and as a light-duty gasoline powered vehicle, PHEVs will generate some driving GHG emissions while BEVs would not. Specifically, PHEVs generate both direct tailpipe GHGs from the burning of carbon-based fuels and indirect offsite GHGs related to utility power generation. BEVs only generate indirect GHGs at an offsite point source from a utility provider like SDG&E. Since BEVs only run off stored electricity, no tailpipe emissions would be emitted during driving events. Given this, overall GHG emissions from PHEVs (tailpipe and offsite) depend on a number of factors, including battery size, vehicle size and charging schemes.

In terms of fleet averages however, an internal combustion powered vehicle emits roughly 381 grams per mile (grpm) CO_2e while a PHEV emits on average 185 grpm CO_2e and a BEV emits on average 110 grpm (Union of Concerned Scientists, 2017). Breaking this down into terms of tailpipe and offsite utility emissions can be approximated by the following assumptions: 1. BEVs do not produce tailpipe emissions, 2. PHEVs have smaller battery charging systems since PHEVs also have an internal combustion engine. Given this, battery storage is assumed to be ½ that of BEVs, 3. Internal combustion powered vehicles would produce 100% tailpipe emissions.

Using this information, an average BEV emits 110 grpm, of which 100% would be from an offsite utility provider. PHEVs produce a fleet average of 185 grpm, of which it's assumed that 55 grpm would be from an offsite utility source to charge the PHEV batteries (½ the average BEV rate of 110 grpm due to smaller batteries) and 130 grpm would be from tailpipe emissions. In terms of total emissions, PHEV would produce roughly 51.4% less emissions than a fully internal combustion vehicle and BEVs would produce roughly a 71.1% reduction. Since the proposed project's ZEVs will be charged by onsite solar, offsite GHG emissions from utility providers would not be expected. In terms of tailpipe emission alone, solar PHEV would produce roughly 130 grpm or 65% less tailpipe emissions than a fully internal combustion vehicle and BEVs would result in zero grpm and have a 100% reduction. Given this, tailpipe reductions over totally internal combustion powered vehicles would correspond to GHG reductions by the project.

Since the project would have the 139 PHEVs and 93 BEVs above the EMFAC assumed ZEVs, the project-related tailpipe emission offsets would be realized by offsetting internal combustion powered vehicle emissions per mile driven by 79.5% or (0.659*139+93)/232.

Based on the traffic study, after applying the TDM reductions, the daily trip generation for residential uses is 12,546.19 trips and would have an average trip length of 12.95 miles. Since

the project would have 3,313 drivers, each driver would be expected to make an average of 3.787 trips per day or 49.04 miles per day. Of those 3,313 drivers, 431 would be ZEV drivers (199 drivers of which was already accounted for by EMFAC) and 232 of those ZEV drivers would offset GHG emissions by 79% as it relates to only those 232 drivers. Based on this, the 232 drivers traveling 12.95 miles, 3.787 times per day for 365 days per year would likely drive 4,151,189.25 miles each year. Based on CalEEMod, GHG emission rates for every mile driven is roughly 0.000308 MT CO_2e/per mile driven. Out of the 4,152,846.92 miles per year driven by ZEVs, tailpipe reductions would be 1,016.81 MT annually (4,151,189.25 miles X 0.000308 MT CO_2e/per mile driven X 0.795). This analysis and calculations has been provided in ***Attachment G*** to this report.

For each ZEV used within the project, it is estimated that the charging of that vehicle would require at least 2,865 kWh/Yr (ConSol, 2017). As stated above, this analysis estimates that the project residents will operate an additional 232 ZEVs in 2030. Based on this, the required energy for all 232 ZEVs would be 664,680 kWH per year that will be provided from installed solar. It should be noted that the total energy consumption from onsite ZEV usage was subtracted from the project's total solar usage as shown in Table 5.5 of this report.

Non-Residential On-Site EV Charging Stations (Specific Plan-Mandated Design Feature)

As a project design feature, the project would install up to 22 Level 2 dual-port charging stations (serving a total of 44 parking spaces) in parking areas for the non-residential uses, including the recreation center, park, school, senior center and commercial uses located within the project site. Since VMT by ZEVs do not generate GHG emissions, it is appropriate to relate the consumption of electricity at EV charging stations to zero emission-driven miles. On average, a Level 2 EV charging station would provide enough charge for a vehicle having a 100 MPGe efficiency to travel roughly 57 miles for each hour of charging. Since each charging location is expected to be utilized for at least 4 hours per day, each EV charger could provide electricity for 228 zero emission-driven miles per day. Given this, 22 Level 2 dual-port charging stations would provide enough charge for 10,032 zero emission-driven miles per day, and would equate to 3,661,680 VMT per year.

As discussed above, the EV charging stations are estimated to be utilized at least 4 hours per day, which would consume about 76.8 kWh of electricity per day per charging station. The 22 Level 2 dual-port charging stations would, therefore, require approximately 1,233,408 kWh per year to provide charging to EV vehicles. Since the chargers would consume 19.1 kWh of electricity per 57 zero emission-driven miles, each charger would require 0.3351 kWh for every mile of zero-emission driving.

CalEEMod outputs were used to develop GHG emission rates in terms of MT CO_2e/VMT for both standard gas consumption vehicles and EVs. For EVs, electrical data was utilized in terms

of MT CO_2e/kWH by summing up the total electrical GHG emissions and dividing that number by the total energy usage, which yielded 0.000183 MT CO_2e/kWH. Since EV charging requires 0.3351 kWH for every VMT, the indirect emissions for every VMT is 6.169×10^{-5} MT CO_2e/VMT.

In terms of calculating the GHG emission rate per VMT for standard gas consumption vehicles, the total mobile emission rate was divided by the total VMT used within CalEEMod. From this data, it was found that the typical fleet of non-ZEVs would generate roughly 0.000308 MT CO_2e/VMT.

Based on this data, the ratio of gas-driven GHGs to ZEV-driven GHGs (from charging) is ($0.000308 / 6.169 \times 10^{-5}$) or 4.99. In other words, from a global perspective, the utilization of a standard gas consumption vehicle fleet for the project would produce roughly five times more GHG emissions when compared to VMTs produced by ZEVs on an equivalent VMT basis. Given this, the 3,661,680 VMT per year would produce 1,127.79 MT CO_2e using standard vehicles and the equivalent VMTs using ZEV would consume 1,227,029 kWH of power, which would generate 225.89 MT CO_2e. Therefore, adding the 22 Level 2 dual-port EV charging stations would reduce cumulative GHG emissions by 901.90 MT CO_2e annually (1,127.79 MT CO_2e – 225.89 MT CO_2e).

Off-Site EV Charging Stations (Mitigation Measure)

As a mitigation measure (see GHG-1 below), the project would install up to 13 Level 2 dual-port charging stations capable of servicing 26 parking spaces at off-site locations within the County of San Diego. Similar to the on-site EV charging stations, each Level 2 EV charging station would provide enough charge for a vehicle having a 100 MPGe efficiency to travel roughly 57 miles for each hour of charging. Since each charging location is expected to be utilized for at least 4 hours per day, each EV charger could provide electricity for 228 zero emission-driven miles per day. Given this, mitigation measure GHG-1's 13 Level 2 dual-port charging stations would provide enough charge for 5,928 zero emission-driven miles per day, or 2,163,720 miles per year.

As discussed above, the EV charging stations are estimated to be utilized at least 4 hours per day, which would consume about 76.8 kWh of electricity per day per charging station. The charging stations would, therefore, require approximately 728,832 kWh per year to provide charging to EV vehicles. Since the chargers would consume 19.1 kWh of electricity per 57 zero emission-driven miles, each charger would consume 0.3351 kWh for every mile of zero-emission driving. Given this, the 2,163,720 VMT per year would produce 666.43 MT CO_2e using standard vehicles; the equivalent VMT driven with ZEVs would consume 725,062.57 kWH of power, which would generate 133.48 MT CO_2e. Therefore, adding the 13 Level 2 dual-port EV charging stations would reduce GHG emissions by 532.95 MT CO_2e annually (666.43 MT CO_2e – 133.48 MT CO_2e).

Water Use Reductions (Specific Plan-Mandated Design Feature)

The project's water service report (see EIR Appendix T) finds that the project would have an unmitigated water use of 1,246 AF per year; with design features, the project would reduce that water demand to 935 AF. Emission reductions from water reductions attributable to conservation would be approximately 206.22 MT CO_2e.

Solid Waste Reductions

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 to 75%. The project reserves a site for the construction and operation of an on-site recycling facility, and would provide separate waste containers to allow for simpler material separations or would pay for a waste collection service that recycles materials. All green waste from the project's parks and residential areas also will be diverted from landfills and recycled as mulch, in accordance with AB 341. For purposes of this analysis, a 25% reduction in solid waste-related GHGs was applied to reflect AB 341's diversion standard, reducing GHG emissions by 323.57 MT CO_2e.

Lighting Efficiency Energy Reductions for Non-Residential Buildings (Specific Plan-Mandated Design Feature)

As previously discussed, as a design feature, the project's non-residential buildings would exclusively utilize high-efficiency indoor and outdoor lighting. One example of high-efficiency lighting is light-emitting diode (LED) lighting. LED lighting is approximately 75-90% more efficient than standard lighting. For example, a 10-watt LED bulb replaces a 60-watt standard bulb, and is 83.3% more efficient. A typical 15-watt LED bulb has an equivalent rating of a 100-watt standard bulb. Outdoor LED 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.

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 standards.

The applicable 2016 Title 24 standards do not require the exclusive use of high-efficiency lighting in non-residential buildings; instead, the standards require that 50% of outdoor

lighting qualify as high-efficiency lighting. Therefore, the project design feature requiring the exclusive use of high-efficiency indoor and outdoor lighting in the non-residential buildings would be beyond code.

For purposes of calculating the estimated GHG emissions reduction attributable to this design feature, it conservatively was assumed that the amount of energy needed for outdoor lighting use would be the same as that needed for indoor use. This is conservative because the amount of lighting needed in the interior of buildings is typically higher than the amount of lighting needed outdoors. Based on the design feature, the utilization of 100% high-efficiency lighting would reduce energy usage from combined indoor and outdoor lighting by 65%. Calculations on estimated lighting energy reductions are shown in ***Attachment H***. The CalEEMod default lighting energy intensity input for non-residential land uses was adjusted to reflect this reduction which equates to 69.67 MT CO_2e.

On-Site Solar for Non-Residential Buildings (Specific Plan-Mandated Design Feature)

As a design feature, the project will provide on-site solar/PV systems to maximize the amount of energy demand for the non-residential land uses that can be met through the installation of on-site renewable energy resources. Based on a Nationwide Analysis of U.S. Commercial Building Solar Photovoltaic (PV) Breakeven Conditions, it was determined that after installation of roof top mechanical systems, skylights and other roof mounted equipment, an average of 35% to 50% of the total rooftop area could be utilized for solar; 50% of the rooftop area generally can be allocated to solar if the building designers are mindful of the need for solar during the design process (NREL, 2015). For purposes of this analysis, it was assumed that 45% of all available commercial rooftop area will be available for the installation of on-site solar/PV systems, as well as all covered parking areas (approximately 375 parking stalls at the town center and 130 parking stalls at the school). Table 5.5 below provides relevant information regarding the solar calculation parameters for the project's non-residential land uses.

Calculations on estimated solar energy production are shown in ***Attachment I***. The nonresidential estimated solar energy production from PV was added into CalEEMod and is reflected in ***Attachment J*** of this report.

Zero Net Energy Residences (Specific Plan-Mandated Design Feature)

As a design feature, the project's residences would be designed to achieve Zero Net Energy, as that term is defined by the CEC. Table 5.5 provides relevant information regarding the calculation parameters for the project's residences. Calculations on estimated solar energy production are shown in ***Attachment I***. The residential estimated solar energy production from PV was added into CalEEMod and is also reflected in ***Attachment J*** of this report.

Table 5.5: Estimated On-Site Solar Attributes

Solar Description per Land Use	Dwelling Units or Square Feet	Amount of Solar Panels	Power (watts)
Single-Family Detached Homes (2,067 SF) *Based on the Consol Energy Report, each home would need 7,229 kWh of solar power along with 2,865 kWh for the EV charging station. This would be equivalent to 20-22 (320 watt) solar panels. For modeling purposes, it was assumed each unit would have 20 (320 watt) panels.*	443	8,860	2,835,200
Single-Family Detached Homes (3,242 SF) *Based on the Consol Energy Report, each home would need 8,949 kWh of solar power along with 2,865 kWh for the EV charging station. This would be equivalent to 23-25 (320 watt) solar panels. For modeling purposes and, it was assumed each unit would have 24 (320 watt) panels.*	460	11,040	3,532,800
Single-Family Detached (Age-Restricted Units) *Based on the Consol Energy Report, each home would need 7,229 kWh of solar power along with 2,865 kWh for the EV charging station. This would be equivalent to 20-22 (320 watt) solar panels. For modeling purposes and, it was assumed each unit would have 20 (320 watt) panels.*	468	9,360	2,995,200
Single-Family Attached *Based on the Consol Energy Report, an 8-unit building would need 48,044 kWh of solar power or 6,006 kWh per unit. Additionally, each unit would need to produce 2,865 kWh for each EV charging station. This would be equivalent to 14-15 (345 watt) solar panels. For modeling purposes and, it was assumed each unit would have 14 (345 watt) panels.*	164	2,296	792,120
Group Care (200 beds) *The project will maximize the amount of solar achievable on rooftop areas or shaded parking structure areas with 320 watt panels.*	100,000 sq. ft	1,950	848,250
Commercial and Mixed-Use *The project will maximize the amount of solar achievable on rooftop areas or shaded parking structure areas with 435 watt panels.*	211/ 90,000 sq. ft.	1,000	554,625
K-8 School *The project will maximize the amount of solar achievable on rooftop areas or shaded parking structure areas with 345 watt panels.*	85,000 sq. ft. and 130 covered parking stalls	2,695	1,172,325
Institutional Use *The project will maximize the amount of solar achievable on rooftop areas or shaded parking structure areas with 345 watt panels.*	29,000 sq. ft.	560	243,600
Community Purpose Facility *The project will maximize the amount of solar achievable on rooftop areas or shaded parking structure areas with 345 watt panels.*	27,000 sq. ft.	525	228,375
Water Reclamation Facility *The project will install rooftop solar with 345 watt panels.*	N/A	5	2,175
Recycling Facility/Trail Head/Staging Area *The project will install rooftop solar with 345 watt panels.*	N/A	5	2,175
Covered Parking Areas (375 parking stalls). Each parking stall can accommodate 8 to 12 solar panels. Conservatively, 8 panels per parking stall was modeled.	375 parking stalls	3,000	1,305,000
TOTALS		**41,296**	**14,511,845**
Total Energy Produced (kWH)	**25,212,879.50**		
EV Charging Stations Energy Requirements (kWh) for 232 Residential EV	**664,680**		
Total Net Energy Generated (kWh)	**24,548,199.50**		
Total GHG Reduction (MT CO_2e)	**4,481.28**		

5.4 2030 Project Buildout Emissions

The project's construction-related emissions are approximately 18,238.55 MT CO_2e, as identified in Table 5.3 above. After considering all of the design features identified in Section 1.3, after construction, the proposed project would operationally generate approximately 24,093.76 MT CO_2e per year. These results are provided below in Table 5.6, along with mitigation-related reductions. The modeling outputs for the project's emissions, before and after application of the Specific Plan's GHG emissions-reducing design features, are provided in ***Attachments A and B***, respectively.

Table 5.6: Project GHG Emissions with Reductions for Design Features and Mitigation

Construction-Related CO_2e Emissions	**Total Project CO_2e Emissions (Metric Tons)**
Total Construction-Related Emissions (see Table 5.2)	18,238.55
Carbon Offset Mitigation (MM GHG-2)	-18,238.55
Mitigated Construction-Related Emissions	**0**
Operational-Related CO_2e Emissions	**Total Project CO_2e Emissions (Metric Tons)**
Area	24.18
Electricity	2,621.80
Natural Gas	2,000.26
Mobile	26,282.26
Waste	1,294.30
Water	989.02
Subtotal	33,211.82
Operational CO_2e-Reducing Design Features and Mitigation	**CO_2e Reduction (Metric Tons)**
Zero Net Energy Residences (PDF)	-3,397.92
Non-Residential Solar/PV Systems (PDF)	-1,083.36
Non-Residential High-Efficiency Lighting (PDF)	-141.24
Low-Flow Water Fixtures and Drought-Resistant Landscaping (PDF)	-206.22
Solid Waste Diversion/Recycling (PDF)	-323.57
TDM Program (PDF)	-2,047.04
Residential ZEV Use (PDF)	-1,016.81
On-Site Non-Residential EV Charging Stations (PDF)	-901.90
Design Features Reductions Total	-9,118.06
Operational-Related Emissions with Design Features	24,093.76
Off-Site EV Charging Stations (MM GHG-1)	-532.95
Carbon Offset Mitigation Measure (MM GHG-3)	-23,560.81
Mitigated Operational-Related Emissions	**0**

After analyzing and requiring all reasonable and feasible on-site measures to reduce GHG emissions (see ***Attachment K*** to this report, which presents an evaluation of the project's utilization of emissions reducing strategies recommended by CARB in its *Second Update* to the *Scoping Plan*), the County has determined that additional off-site mitigation measures can further reduce impacts from GHG emissions. Specifically, three mitigation measures have been identified that require the installation of up to 13 off-site Level 2 dual-port EV charging stations (GHG-1) and the purchase of carbon offset credits sufficient to offset all project GHG emissions to net zero (GHG-2 [construction emissions] and GHG-3 [operational emissions]).

GHG-1 Prior to issuance of the project's 1,000th residential building permit, the project applicant or its designee shall provide the County of San Diego's Director of the Planning & Development Services Department (PDS) with proof of installation of 13 dual-port electric vehicle (EV) charging stations capable of serving 26 off-site parking spaces per the following ratios:

- one (1) off-site parking space shall be served by an electric vehicle charging station for every 100 dwelling units (equivalent to 17 electric vehicle charging stations), and
- one (1) off-site parking space shall be served by an electric vehicle charging station for every 10,000 square feet of commercial development (equivalent to 9 electric vehicle charging stations). ("Commercial development" includes retail, office, and hotel buildings.)

Off-site electric vehicle charging stations capable of servicing 26 parking spaces would be required if the maximum allowable development facilitated by the project occurs; fewer electric vehicle charging stations would be required if maximum build-out under project does not occur.

The EV charging stations shall achieve a similar or better functionality as a Level 2 charging station and may service one or more parking spaces. Additionally, the EV charging stations shall be located within the geographic area defined to include the unincorporated County of San Diego in areas that are generally accessible to the public, such as areas that include, but are not limited to, retail centers, employment centers and office complexes, recreational facilities, schools, and other categories of public facilities.

GHG-2 The project applicant or its designee shall purchase and retire carbon offsets in a quantity sufficient to offset 100 percent of the Project's construction and vegetation removal emissions, which total 18,239 MT CO_2e, consistent with the performance standards and requirements set forth below.

First, "carbon offset" shall mean an instrument issued by any of the following: (i) the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard, (ii) any registry approved by CARB to act as a registry under the State's cap-and-trade program, or (iii) if no registry is in existence as identified in options (i) and (ii), above, then any other reputable registry or entity that issues carbon offsets.

Second, any carbon offset utilized to reduce the project's GHG emissions shall be a carbon offset that represents the past reduction or sequestration of one metric ton of carbon dioxide equivalent that is "not otherwise required" (CEQA Guidelines section 15126.4(c)(3)).

Third, as to construction GHG emissions, prior to the County's issuance of each project-related grading permit, the project applicant or its designee shall provide evidence to the satisfaction of the Director of the Planning & Development Services Department (PDS) that the project applicant or its designee has purchased and retired carbon offsets in a quantity sufficient to offset 100 percent of the construction GHG emissions generated by construction-related activities in the disturbance area covered by the grading permit as identified in the approved Greenhouse Gas Emissions Report (EIR Appendix X).

Fourth, the County will consider, to the satisfaction of the Director of PDS, the following geographic priorities for GHG reduction features, and off-site carbon offset projects: 1) project design features/on-site reduction measures; 2) off-site within the unincorporated areas of the County of San Diego; 3) off-site within the County of San Diego; 4) off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally. The purchased carbon offsets used to reduce construction GHG emissions shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions (Cal. Health & Saf. Code Section 38562(d)(1)).

GHG-3 As to operational GHG emissions, prior to the County's issuance of building permits for each implementing Site Plan, the project applicant or its designee shall purchase and retire carbon offsets for the incremental portion of the project within the Site Plan in a quantity sufficient to offset, for a 30-year period, the operational GHG emissions from that incremental amount of development to net zero, consistent with the performance standards and requirements set forth below.

First, "carbon offset" shall have the same meaning as set forth in M-GHG-1.

Second, any carbon offset utilized to reduce the project's GHG emissions shall be a carbon offset that represents the past reduction or sequestration of one metric ton of

carbon dioxide equivalent that is "not otherwise required" (CEQA Guidelines section 15126.4(c)(3)).

Third, as to operational emissions, prior to the County's issuance of building permits for each implementing Site Plan, the project applicant or its designee shall provide evidence to the satisfaction of the Director of the Planning & Development Services Department (PDS) that it has purchased and retired carbon offsets for the incremental portion of the project within the Site Plan in a quantity sufficient to offset, for a 30-year period, the operational GHG emissions from the incremental amount of development to net zero. The "project life" is 30 years. This methodology is consistent with the 30-year project life time frame used by the South Coast Air Quality Management District's GHG guidance (SCAQMD 2008).

Fourth, the County will consider, to the satisfaction of the Director of PDS, the following geographic priorities for GHG reduction features, and off-site carbon offset projects: 1) project design features/on-site reduction measures; 2) off-site within the unincorporated areas of the County of San Diego; 3) off-site within the County of San Diego; 4) off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally. The purchased carbon offsets used to reduce operational GHG emissions shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions (Cal. Health & Saf. Code Section 38562(d)(1)).

Fifth, the amount of carbon offsets required for each implementing Site Plan shall be based on the GHG emissions with the implementing Site Plan, and shall include operational GHG emissions as identified in the approved Greenhouse Gas Emissions Report (EIR Appendix X, ***Attachment L*** therein).

Sixth, each implementing Site Plan shall include a tabulation that identifies the overall carbon offsets required to mitigate the entire project's GHG emissions, and shall identify the amount of carbon offsets purchased to date as well as the remaining carbon offsets required to reduce the project's emissions to net zero. Such tabulation and tracking shall be to the satisfaction of the Director of PDS.

Seventh, this study and the project's EIR acknowledges that the project's GHG emissions estimates are conservative because the project's GHG emissions are expected to decrease beyond the estimates presented in the EIR's analysis, in part, due to reasonably foreseeable improvements in fuel efficiency, vehicle fleet turnover, technological improvements related to transportation and energy, and updates to emissions models and methodologies. Thus, subject to County oversight, the operational emission estimates that govern implementation of this project are subject to a "true up"

at the election of the project applicant or its designee and subject to the satisfaction of the Director of PDS. Specifically, if new technological-advancements, regulatory updates, or model and methodology updates occur at a future date result in greater GHG efficiencies and less impacts from project operations than the information projected in the certified Final EIR for the project and a "true-up" exercise is undertaken, the project applicant or its designee shall provide an operational GHG emissions inventory of the project's operational emissions for the "true up" operational conditions, including emissions from mobile sources, energy, area sources, water consumption, and solid waste. If updated GHG emission calculations are conducted for the "true-up" exercise at the project applicant's (or its designee's) election, subject to the satisfaction of the Director of PDS, these calculations shall be conducted using a County-approved model and/or methodology. Alternatively, the project applicant or its designee may purchase all carbon offset credits to reduce operational GHG emissions at issuance of the first building permit.

The "true up" operational GHG emissions inventory, if conducted, will be provided in the form of a project-specific Updated Emissions Inventory and Offset Report to the County's Director of PDS (or its designee) prior to the issuance of building permits for the next buildout phase. The subject technical documentation shall be prepared by a County-approved, qualified air quality and greenhouse gas technical specialist. If the Director of PDS (or its designee) determines that the technical documentation demonstrates that the quantity of project-related greenhouse gas emissions would be lower than the quantity identified in the certified Final EIR for the project, and finds that the technical documentation is supported by substantial evidence, such Planning Director may authorize a reduction in the total carbon offsets value required for the project. In all instances, substantial evidence must confirm that any reduction to the total carbon offsets value as identified in the certified Final EIR for the project is consistent with the project commitment to achieve and maintain carbon neutrality (i.e., net zero emissions) for the 30-year life of the project.

With implementation of the mitigation measures requiring the purchase and retirement of carbon offsets, the project would result in no net increase in GHG emissions as compared to the existing environmental setting (see CEQA Guidelines Section 15064.4(b)(1)). Because the project, with implementation of the recommended mitigation measures, would result in no net increase to the existing GHG emissions level associated with the project site, the project would not result in a project-specific or cumulatively considerable contribution to the cumulative GHG emissions that result in a significant impact to global climate change.

5.5 Plan Consistency Evaluation

Because the project would not increase net GHG emissions above existing levels following implementation of the project design features and mitigation measures GHG-1 through GHG-3, above, the project would not conflict with any local or state plans, policies, or regulations adopted for the purpose of reducing GHG emissions. However, for information purposes, the following provides additional discussion of plans, policies, and regulations adopted for the purpose of reducing GHG emissions and the determination that the project does not conflict with such plans, policies, or regulations.

Consistency with SANDAG's San Diego Forward: The Regional Plan

As to SANDAG's RTP/SCS, the project would include site design elements and project design features that are consistent with the policy objectives of the RTP/SCS and its corresponding legislation (SB 375), including VMT-reducing strategies that would be implemented as part of the project's TDM program. As discussed above and as illustrated further in ***Attachment F***, the project's TDM program would work to reduce the project's VMT (and corresponding GHG emissions, as shown in Table 5.6 above) through four primary strategies: (1) land use and design measures that include transit facility optimization, bicycle/pedestrian circulation improvements, and traffic calming features; (2) services for residents that would reduce VMT by providing alternatives to single-occupancy vehicle trips (e.g., vanpool & carpool programs; car share and bike share programs; transit pass subsidies; school transport options); (3) services for employees of the project's non-residential uses that would reduce VMT (e.g., transit fare subsidies; employee parking cash-out program; trip reduction options, including telecommuting); and (4) services for hotel guests, such as private transit and bike share.

To achieve strategy 1, the project would provide interim private transit services (until public transit service on the project site is available), and would be designed to: (i) develop a comprehensive trails network that provides internal connectivity; (ii) provide a comfortable walking environment for pedestrians; and, (iii) install amenities for bicyclists (e.g., bicycle racks and lockers) along main travel corridors, adjacent to commercial development areas, at public parks and open spaces, and at multi-family residential uses. The project design also would include traffic calming features on at least 25% of the on-site roadways and at 25% of the on-site intersections.

The project would provide interim transit services, until such time that public transit services become available on the project site. The project's TDM program also would provide a carpool matching program; guaranteed ride home program; car and bike share programs; school pool, school bus and walking school bus programs; unbundled parking; and subsidized transit

passes. In order to ensure the success of the program and the effective dissemination of information, TDM strategy marketing would occur.

The TDM program would provide employee vanpool/shuttle services; an employee trip reduction program; carpool matching and employee parking cash-out programs; and subsidized transit passes. In order to ensure the success of the program and the effective dissemination of information, TDM strategy marketing would occur.

In furtherance of strategy 4, the TDM program would provide interim private transit services to hotel guests, until such time that public transit services become available on the project site. The TDM program also would make the bike share program available to hotel guests, and provide a hotel shuttle service.

The elements of the project's TDM program (which are described in additional detail in ***Attachment F***) would support the goals and policies outlined in SANDAG's RTP/SCS, and would achieve an 8.1 percent reduction in the project-related VMT. As such, the project would not conflict with SANDAG's RTP/SCS and the corresponding policy objectives set forth in SB 375.

Consistency with Relevant General Plan Policies

This discussion analyzes the project's potential to conflict with an applicable plan—the County of San Diego's General Plan—as that planning document contains various goals, policies, and objectives related to the reduction of GHG emissions and global climate change. The project's consistency with specific General Plan Conservation and Open Space Element policies is analyzed in Table 5.7 below (See also Appendix W of the project's Final EIR for further analysis).

Table 5.7 Evaluation of Consistency with Applicable 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*. Please see Section 1.3 above for discussion of the project's "green" design features and sustainable land use development practices. The GHG emissions reduction benefits of those features and practices, where quantifiable, are shown in Table 5.6 above.
COS14.7 Alternative Energy Sources for Development Projects. Encourage development projects that use energy recovery, photovoltaic, and wind energy.	*Consistent*. The project would install on-site, solar photovoltaic systems on approximately 45% of the non-residential buildings' rooftop area, and on all covered parking areas. Also, as a design feature, the project's residences would be designed to achieve Zero Net Energy, as that term is defined by the CEC.
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*. All project-related construction equipment would be required to meet Tier 3 emissions standards.
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's residences would be designed to achieve Zero Net Energy, as that term is defined by the CEC. Also, the project's non-residential buildings would be required to comply, at a minimum, with the 2016 Title 24 standards because the building construction phase would commence after January 1, 2017.
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's residences would be designed to achieve Zero Net Energy, as that term is defined by the CEC. The commitment to design to Zero Net Energy standards exceeds the existing Title 24 energy standards. The project's non-residential buildings also would utilize on-site, solar photovoltaic systems, which exceeds the requirements of the existing Title 24 energy 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*. The project proposes to construct and operate an on-site recycled facility. The project also would provide separate waste containers to allow for simpler material separations or would pay for a waste collection service that recycles the materials. Finally, all green waste from parks and residential areas would be diverted from landfills and recycled as mulch.
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 at least 90 percent of inert materials and 70 percent of all other materials associated with construction waste from landfills through reuse and recycling.

5.6 Conclusions

With implementation of the identified design features and Mitigation Measures GHG-1 through GHG-3, the project's GHG emissions would be reduced to net zero. Based on the emissions data provided in Table 5.6, the project will reduce its annual emissions by approximately 29 percent with the incorporation of design features and mitigation measure GHG-2 that total 9,651.01 CO_2e (9,651.01 MT CO_2e / 33,211.82 MT CO_2e). Approximately 71 percent of the project's annual GHG emissions reductions would be achieved through the purchase and retirement of GHG offset credits that would secure reductions in off-site locations in the State of California, United States and beyond.

The project would have *no net increase* in GHG emissions, as compared to the existing environmental setting (see CEQA Guidelines Section 15064.4(b)(1)). Because the project would have no net increase in the GHG emissions level, the project would not generate GHG emissions that may have a significant impact on the environment. Further, after mitigation, the project would not result in a cumulatively considerable contribution to global GHG emissions.

Additionally, because the project would not increase net GHG emissions above existing levels following implementation of the identified design features and mitigation measures, it would not conflict with any adopted and applicable local or state plans, policies or regulations to reduce GHG emissions. The project is consistent with CARB's *Second Update* to the *Scoping Plan*, which states that "[a]chieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" for purposes of demonstrating that a project will not impair achievement of the 2030 and 2050 statewide reduction targets. Finally, the project's attainment of net zero GHG emissions and TDM program ensure that the project does not conflict with SANDAG's adopted *San Diego Forward: The Regional Plan* by focusing on strategies to reduce GHG emissions and VMT.

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7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the projected CO_2e emissions from the proposed Lilac Hills Ranch 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 Greenhouse Gas.

DRAFT

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Date January 24, 2018

ATTACHMENT A:

CALEEMOD – Annual
Unmitigated Emissions
(2030)

Lilac Hills Ranch - Buildout 2030 - without design features

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	28.50	1000sqft	0.65	28,500.00	66
Elementary School	568.00	Student	6.00	47,486.71	29
Junior High School	132.00	Student	6.00	15,518.14	9
Place of Worship	10.70	1000sqft	10.70	10,700.00	0
User Defined Industrial	2.40	User Defined Unit	2.40	104,544.00	20
User Defined Industrial	0.60	User Defined Unit	0.60	26,136.00	5
City Park	23.80	Acre	23.80	0.00	0
Hotel	50.00	Room	1.67	72,600.00	0
User Defined Recreational	40.00	User Defined Unit	2.00	0.00	0
Condo/Townhouse	375.00	Dwelling Unit	23.20	375,000.00	1073
Congregate Care (Assisted Living)	200.00	Dwelling Unit	6.50	40,000.00	572
Retirement Community	468.00	Dwelling Unit	75.90	468,000.00	1338
Single Family Housing	903.00	Dwelling Unit	165.40	1,625,400.00	2583
Strip Mall	61.50	1000sqft	1.41	61,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity	402.51	**CH4 Intensity**	0.016	**N2O Intensity**	0.003

(lb/MWhr) **(lb/MWhr)** **(lb/MWhr)**

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2030 factors 402.51, .0162, .0034

Land Use - xc

Construction Phase - Construction from approximatly April 2020 to Feb 2030

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - 326.23

Architectural Coating - Rule 67 Paint

Vehicle Trips - Trip distances were adjusted to reflect Traffic Study VMT numbers

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Per Consol Report Any heating with NG via Hearth will cancel heat needed from HVAC.

Area Coating - Rule 67 Paints will be utilized

Energy Use - Residential Energy Usage was provided by Consol. Remaining non-residential assumes default - T24 2016 5% reductions on electrical

Water And Wastewater - Based on WTR Report and Appendix D Table 9.1 Water Consumption Rates

Solid Waste - Added from AQ Study

Land Use Change - Since Wetland sequestration is zero it was not included in this analysis

Sequestration -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00

tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
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tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150

tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	440.00	130.00
tblConstructionPhase	NumDays	440.00	130.00
tblConstructionPhase	NumDays	440.00	130.00
tblConstructionPhase	NumDays	440.00	216.00
tblConstructionPhase	NumDays	440.00	132.00
tblConstructionPhase	NumDays	6,200.00	194.00
tblConstructionPhase	NumDays	6,200.00	194.00
tblConstructionPhase	NumDays	6,200.00	306.00
tblConstructionPhase	NumDays	6,200.00	197.00
tblConstructionPhase	NumDays	6,200.00	196.00
tblConstructionPhase	NumDays	620.00	130.00
tblConstructionPhase	NumDays	620.00	130.00
tblConstructionPhase	NumDays	620.00	132.00
tblConstructionPhase	NumDays	620.00	65.00
tblConstructionPhase	NumDays	620.00	129.00
tblConstructionPhase	NumDays	440.00	65.00
tblConstructionPhase	NumDays	440.00	66.00
tblConstructionPhase	NumDays	440.00	85.00
tblConstructionPhase	NumDays	440.00	62.00
tblConstructionPhase	NumDays	440.00	64.00
tblConstructionPhase	NumDays	240.00	63.00
tblConstructionPhase	NumDays	240.00	86.00
tblConstructionPhase	NumDays	240.00	66.00
tblConstructionPhase	NumDays	240.00	87.00
tblConstructionPhase	NumDays	240.00	108.00
tblEnergyUse	LightingElect	1,001.10	423.29

tblEnergyUse	LightingElect	1,001.10	617.40
tblEnergyUse	LightingElect	1,608.84	756.50
tblEnergyUse	LightingElect	0.00	3.25
tblEnergyUse	LightingElect	0.00	3.25
tblEnergyUse	NT24E	4,109.59	3,639.18
tblEnergyUse	NT24E	3,418.36	4,259.80
tblEnergyUse	NT24E	6,680.41	4,572.85
tblEnergyUse	NT24NG	4,180.00	1,389.67
tblEnergyUse	NT24NG	4,180.00	1,519.64
tblEnergyUse	NT24NG	4,180.00	1,584.62
tblEnergyUse	T24E	257.33	817.95
tblEnergyUse	T24E	246.93	234.58
tblEnergyUse	T24E	1.60	1.52
tblEnergyUse	T24E	5.01	4.76
tblEnergyUse	T24E	1.60	1.52
tblEnergyUse	T24E	6.14	5.83
tblEnergyUse	T24E	1.27	1.21
tblEnergyUse	T24E	307.62	930.40
tblEnergyUse	T24E	374.93	974.30
tblEnergyUse	T24E	3.34	3.17
tblEnergyUse	T24E	0.00	1.48
tblEnergyUse	T24E	0.00	1.48
tblEnergyUse	T24NG	12,915.01	12,033.38
tblEnergyUse	T24NG	10,166.66	14,036.65
tblEnergyUse	T24NG	24,312.55	16,980.94
tblEnergyUse	T24NG	0.00	4.54
tblEnergyUse	T24NG	0.00	4.54

tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	206.25	0.00
tblFireplaces	NumberGas	110.00	0.00
tblFireplaces	NumberGas	257.40	0.00
tblFireplaces	NumberGas	496.65	0.00
tblFireplaces	NumberNoFireplace	37.50	0.00
tblFireplaces	NumberNoFireplace	20.00	0.00
tblFireplaces	NumberNoFireplace	46.80	0.00
tblFireplaces	NumberNoFireplace	90.30	0.00
tblFireplaces	NumberWood	131.25	0.00
tblFireplaces	NumberWood	70.00	0.00
tblFireplaces	NumberWood	163.80	0.00
tblFireplaces	NumberWood	316.05	0.00
tblFleetMix	FleetMixLandUseSubType	Office Park	City Park
tblFleetMix	FleetMixLandUseSubType	Elementary School	Condo/Townhouse
tblFleetMix	FleetMixLandUseSubType	Junior High School	Congregate Care (Assisted Living)

tblFleetMix	FleetMixLandUseSubType	Place of Worship	Elementary School
tblFleetMix	FleetMixLandUseSubType	User Defined Industrial	Hotel
tblFleetMix	FleetMixLandUseSubType	User Defined Industrial	Junior High School
tblFleetMix	FleetMixLandUseSubType	City Park	Office Park
tblFleetMix	FleetMixLandUseSubType	Hotel	Place of Worship
tblFleetMix	FleetMixLandUseSubType	User Defined Recreational	Retirement Community
tblFleetMix	FleetMixLandUseSubType	Condo/Townhouse	Single Family Housing
tblFleetMix	FleetMixLandUseSubType	Congregate Care (Assisted Living)	Strip Mall
tblFleetMix	FleetMixLandUseSubType	Retirement Community	User Defined Industrial
tblFleetMix	FleetMixLandUseSubType	Single Family Housing	User Defined Industrial
tblFleetMix	FleetMixLandUseSubType	Strip Mall	User Defined Recreational
tblGrading	AcresOfGrading	325.00	322.50
tblGrading	AcresOfGrading	330.00	326.23
tblGrading	AcresOfGrading	322.50	325.00
tblGrading	AcresOfGrading	0.00	326.23
tblGrading	AcresOfGrading	0.00	322.50
tblGrading	AcresOfGrading	0.00	330.00
tblGrading	AcresOfGrading	0.00	325.00
tblLandUse	BuildingSpaceSquareFeet	0.00	26,136.00
tblLandUse	BuildingSpaceSquareFeet	0.00	104,544.00
tblLandUse	BuildingSpaceSquareFeet	200,000.00	40,000.00
tblLandUse	GreenSpaceSquareFeet	1,036,728.00	0.00
tblLandUse	LandUseSquareFeet	0.00	26,136.00
tblLandUse	LandUseSquareFeet	0.00	104,544.00
tblLandUse	LandUseSquareFeet	1,036,728.00	0.00
tblLandUse	LandUseSquareFeet	200,000.00	40,000.00
tblLandUse	LotAcreage	1.09	6.00

tblLandUse	LotAcreage	0.36	6.00
tblLandUse	LotAcreage	0.25	10.70
tblLandUse	LotAcreage	0.00	0.60
tblLandUse	LotAcreage	0.00	2.40
tblLandUse	LotAcreage	0.00	2.00
tblLandUse	LotAcreage	23.44	23.20
tblLandUse	LotAcreage	12.50	6.50
tblLandUse	LotAcreage	93.60	75.90
tblLandUse	LotAcreage	293.18	165.40
tblLandUse	Population	0.00	66.00
tblLandUse	Population	0.00	29.00
tblLandUse	Population	0.00	9.00
tblLandUse	Population	0.00	5.00
tblLandUse	Population	0.00	20.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	402.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2018	2030
tblSolidWaste	SolidWasteGenerationRate	0.00	508.10
tblSolidWaste	SolidWasteGenerationRate	0.00	127.00
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01

tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TL	7.30	10.01
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	30.00	100.00
tblVehicleTrips	CC_TTP	61.60	100.00
tblVehicleTrips	CC_TTP	22.20	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	95.00	100.00
tblVehicleTrips	CC_TTP	64.40	100.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	65.00	0.00
tblVehicleTrips	CW_TTP	19.40	0.00
tblVehicleTrips	CW_TTP	72.80	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.60	0.00
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	25.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
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tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	25.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	40.00	0.00
tblVehicleTrips	HO_TL	7.50	0.00

tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HW_TL	10.80	13.00
tblVehicleTrips	HW_TL	10.80	13.00
tblVehicleTrips	HW_TL	10.80	13.00
tblVehicleTrips	HW_TL	10.80	13.01
tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00

tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	15.00	0.00
tblVehicleTrips	PR_TP	66.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	63.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00
tblVehicleTrips	PR_TP	63.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	64.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	45.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	22.75	5.00
tblVehicleTrips	ST_TR	5.67	6.00
tblVehicleTrips	ST_TR	2.20	2.50
tblVehicleTrips	ST_TR	0.00	1.60
tblVehicleTrips	ST_TR	8.19	9.00
tblVehicleTrips	ST_TR	0.00	1.40
tblVehicleTrips	ST_TR	1.64	14.00

tblVehicleTrips	ST_TR	10.37	28.04
tblVehicleTrips	ST_TR	2.03	4.00
tblVehicleTrips	ST_TR	9.91	10.00
tblVehicleTrips	ST_TR	42.04	40.00
tblVehicleTrips	ST_TR	0.00	6.00
tblVehicleTrips	ST_TR	0.00	22.88
tblVehicleTrips	SU_TR	16.74	5.00
tblVehicleTrips	SU_TR	4.84	6.00
tblVehicleTrips	SU_TR	2.44	2.50
tblVehicleTrips	SU_TR	0.00	1.60
tblVehicleTrips	SU_TR	5.95	9.00
tblVehicleTrips	SU_TR	0.00	1.40
tblVehicleTrips	SU_TR	0.76	14.00
tblVehicleTrips	SU_TR	36.63	28.04
tblVehicleTrips	SU_TR	1.95	4.00
tblVehicleTrips	SU_TR	8.62	10.00
tblVehicleTrips	SU_TR	20.43	40.00
tblVehicleTrips	SU_TR	0.00	6.00
tblVehicleTrips	SU_TR	0.00	22.88
tblVehicleTrips	WD_TR	1.89	5.00
tblVehicleTrips	WD_TR	5.81	6.00
tblVehicleTrips	WD_TR	2.74	2.50
tblVehicleTrips	WD_TR	1.29	1.60
tblVehicleTrips	WD_TR	8.17	9.00
tblVehicleTrips	WD_TR	1.62	1.40
tblVehicleTrips	WD_TR	11.42	14.00
tblVehicleTrips	WD_TR	9.11	28.04

tblVehicleTrips	WD_TR	2.40	4.00
tblVehicleTrips	WD_TR	9.52	10.00
tblVehicleTrips	WD_TR	44.32	40.00
tblVehicleTrips	WD_TR	0.00	6.00
tblVehicleTrips	WD_TR	0.00	22.88
tblWater	IndoorWaterUseRate	24,432,759.61	6,505,437.47
tblWater	IndoorWaterUseRate	13,030,805.12	3,469,566.65
tblWater	IndoorWaterUseRate	1,376,968.32	366,629.94
tblWater	IndoorWaterUseRate	1,268,338.50	337,706.30
tblWater	IndoorWaterUseRate	319,999.68	85,202.73
tblWater	IndoorWaterUseRate	5,065,411.82	1,348,710.52
tblWater	IndoorWaterUseRate	334,791.32	89,141.14
tblWater	IndoorWaterUseRate	30,492,083.99	8,118,785.96
tblWater	IndoorWaterUseRate	58,834,085.14	15,665,093.42
tblWater	IndoorWaterUseRate	4,555,460.07	1,212,931.37
tblWater	IndoorWaterUseRate	0.00	23,602,024.85
tblWater	IndoorWaterUseRate	0.00	34,347,386.33
tblWater	OutdoorWaterUseRate	28,357,256.12	71,256,065.58
tblWater	OutdoorWaterUseRate	15,403,261.49	38,705,289.62
tblWater	OutdoorWaterUseRate	8,215,072.80	20,642,821.14
tblWater	OutdoorWaterUseRate	3,540,775.68	8,897,255.19
tblWater	OutdoorWaterUseRate	140,926.50	354,119.87
tblWater	OutdoorWaterUseRate	822,856.32	2,067,671.98
tblWater	OutdoorWaterUseRate	3,104,607.24	7,801,251.86
tblWater	OutdoorWaterUseRate	523,647.96	1,315,821.71
tblWater	OutdoorWaterUseRate	19,223,270.34	48,304,201.44
tblWater	OutdoorWaterUseRate	37,091,053.67	93,202,337.41

tblWater	OutdoorWaterUseRate	2,792,056.17	7,015,874.06
tblWater	OutdoorWaterUseRate	0.00	11,299,551.49
tblWoodstoves	NumberCatalytic	18.75	0.00
tblWoodstoves	NumberCatalytic	10.00	0.00
tblWoodstoves	NumberCatalytic	23.40	0.00
tblWoodstoves	NumberCatalytic	45.15	0.00
tblWoodstoves	NumberNoncatalytic	18.75	0.00
tblWoodstoves	NumberNoncatalytic	10.00	0.00
tblWoodstoves	NumberNoncatalytic	23.40	0.00
tblWoodstoves	NumberNoncatalytic	45.15	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.4291	4.6543	2.8374	5.4400e-003	1.3276	0.2128	1.5405	0.5727	0.1958	0.7685	0.0000	478.5814	478.5814	0.1508	0.0000	482.3506
2021	26.8929	5.2705	6.3489	0.0212	1.2725	0.1352	1.4077	0.3422	0.1270	0.4691	0.0000	1,955.8140	1,955.8140	0.1550	0.0000	1,959.6884
2022	0.4245	4.4142	3.1461	6.4800e-003	1.7281	0.1986	1.9267	0.7921	0.1827	0.9749	0.0000	569.6776	569.6776	0.1794	0.0000	574.1629
2023	26.7656	3.9963	5.5658	0.0198	1.2637	0.0939	1.3576	0.3398	0.0883	0.4281	0.0000	1,831.5380	1,831.5380	0.1369	0.0000	1,834.9602
2024	0.3514	3.4776	2.9456	6.3200e-003	1.5295	0.1496	1.6791	0.6842	0.1377	0.8219	0.0000	555.1937	555.1937	0.1751	0.0000	559.5715
2025	26.6840	3.5430	4.9495	0.0186	1.2509	0.0687	1.3195	0.3364	0.0646	0.4009	0.0000	1,717.2379	1,717.2379	0.1240	0.0000	1,720.3380
2026	0.3054	2.9232	2.8035	6.1600e-003	1.3539	0.1227	1.4766	0.5854	0.1129	0.6983	0.0000	541.4325	541.4325	0.1710	0.0000	545.7078
2027	26.6406	3.3720	4.4991	0.0176	1.2497	0.0638	1.3134	0.3360	0.0601	0.3961	0.0000	1,633.8429	1,633.8429	0.1142	0.0000	1,636.6985
2028	0.1991	1.7971	1.8323	4.3800e-003	0.9130	0.0712	0.9841	0.4662	0.0656	0.5318	0.0000	393.2695	393.2695	0.0860	0.0000	395.4200
2029	23.8596	5.3469	6.6149	0.0251	1.9839	0.1209	2.1047	0.5745	0.1131	0.6876	0.0000	2,321.7379	2,321.7379	0.2067	0.0000	2,326.9062
2030	3.0847	0.3657	0.5551	2.2900e-003	0.1691	3.0700e-003	0.1722	0.0454	3.0000e-003	0.0484	0.0000	211.4236	211.4236	8.7600e-003	0.0000	211.6425
Maximum	**26.8929**	**5.3469**	**6.6149**	**0.0251**	**1.9839**	**0.2128**	**2.1047**	**0.7921**	**0.1958**	**0.9749**	**0.0000**	**2,321.7379**	**2,321.7379**	**0.2067**	**0.0000**	**2,326.9062**

2.1 Overall Construction

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	0.4291	4.6543	2.8374	5.4400e-003	1.3276	0.2128	1.5405	0.5727	0.1958	0.7685	0.0000	478.5808	478.5808	0.1508	0.0000	482.3501
2021	26.8929	5.2705	6.3489	0.0212	1.2725	0.1352	1.4077	0.3422	0.1270	0.4691	0.0000	1,955.8137	1,955.8137	0.1550	0.0000	1,959.6880
2022	0.4245	4.4142	3.1461	6.4800e-003	1.7281	0.1986	1.9267	0.7921	0.1827	0.9749	0.0000	569.6770	569.6770	0.1794	0.0000	574.1622
2023	26.7656	3.9963	5.5658	0.0198	1.2637	0.0939	1.3576	0.3398	0.0883	0.4281	0.0000	1,831.5377	1,831.5377	0.1369	0.0000	1,834.9598
2024	0.3514	3.4776	2.9455	6.3200e-003	1.5295	0.1496	1.6791	0.6842	0.1377	0.8219	0.0000	555.1931	555.1931	0.1751	0.0000	559.5709
2025	26.6840	3.5430	4.9495	0.0186	1.2509	0.0687	1.3195	0.3364	0.0646	0.4009	0.0000	1,717.2375	1,717.2375	0.1240	0.0000	1,720.3377
2026	0.3054	2.9232	2.8035	6.1600e-003	1.3539	0.1227	1.4766	0.5854	0.1129	0.6983	0.0000	541.4318	541.4318	0.1710	0.0000	545.7072
2027	26.6406	3.3720	4.4991	0.0176	1.2497	0.0638	1.3134	0.3360	0.0601	0.3961	0.0000	1,633.8426	1,633.8426	0.1142	0.0000	1,636.6982
2028	0.1991	1.7971	1.8323	4.3800e-003	0.9130	0.0712	0.9841	0.4662	0.0656	0.5318	0.0000	393.2692	393.2692	0.0860	0.0000	395.4197
2029	23.8596	5.3469	6.6149	0.0251	1.9839	0.1209	2.1047	0.5745	0.1131	0.6876	0.0000	2,321.7373	2,321.7373	0.2067	0.0000	2,326.9056
2030	3.0847	0.3657	0.5551	2.2900e-003	0.1691	3.0700e-003	0.1722	0.0454	3.0000e-003	0.0484	0.0000	211.4235	211.4235	8.7600e-003	0.0000	211.6425
Maximum	**26.8929**	**5.3469**	**6.6149**	**0.0251**	**1.9839**	**0.2128**	**2.1047**	**0.7921**	**0.1958**	**0.9749**	**0.0000**	**2,321.7373**	**2,321.7373**	**0.2067**	**0.0000**	**2,326.9056**

	ROG	NOx	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**

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
11	7-1-2020	9-30-2020	1.7996	1.7996
12	10-1-2020	12-31-2020	1.8001	1.8001
13	1-1-2021	3-31-2021	0.4485	0.4485
14	4-1-2021	6-30-2021	1.7680	1.7680
15	7-1-2021	9-30-2021	14.8816	14.8816
16	10-1-2021	12-31-2021	14.9162	14.9162
18	4-1-2022	6-30-2022	0.4410	0.4410
19	7-1-2022	9-30-2022	1.3989	1.3989
20	10-1-2022	12-31-2022	1.0446	1.0446
21	1-1-2023	3-31-2023	0.6945	0.6945
22	4-1-2023	6-30-2023	5.1475	5.1475
23	7-1-2023	9-30-2023	14.6896	14.6896
24	10-1-2023	12-31-2023	9.9197	9.9197
26	4-1-2024	6-30-2024	0.7265	0.7265
27	7-1-2024	9-30-2024	1.1726	1.1726
28	10-1-2024	12-31-2024	0.6440	0.6440
29	1-1-2025	3-31-2025	0.9520	0.9520
30	4-1-2025	6-30-2025	9.9367	9.9367
31	7-1-2025	9-30-2025	14.5662	14.5662
32	10-1-2025	12-31-2025	4.7587	4.7587
34	4-1-2026	6-30-2026	0.9389	0.9389
35	7-1-2026	9-30-2026	1.0162	1.0162
36	10-1-2026	12-31-2026	0.3525	0.3525
37	1-1-2027	3-31-2027	1.2003	1.2003
38	4-1-2027	6-30-2027	13.6471	13.6471
39	7-1-2027	9-30-2027	14.5259	14.5259

40	**10-1-2027**	**12-31-2027**	0.6326	0.6326
43	**7-1-2028**	**9-30-2028**	0.1945	0.1945
44	**10-1-2028**	**12-31-2028**	0.6031	0.6031
45	**1-1-2029**	**3-31-2029**	1.2189	1.2189
46	**4-1-2029**	**6-30-2029**	9.2777	9.2777
47	**7-1-2029**	**9-30-2029**	9.5804	9.5804
48	**10-1-2029**	**12-31-2029**	9.2605	9.2605
49	**1-1-2030**	**3-31-2030**	3.4543	3.4543
		Highest	14.9162	14.9162

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	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Energy	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	4,601.8455	4,601.8455	0.1420	0.0559	4,622.0635
Mobile	4.7100	20.5701	65.0632	0.2826	32.2459	0.1793	32.4252	8.6320	0.1666	8.7986	0.0000	26,251.7988	26,251.7988	1.2185	0.0000	26,282.2610
Waste						0.0000	0.0000		0.0000	0.0000	522.4318	0.0000	522.4318	30.8748	0.0000	1,294.3026
Water						0.0000	0.0000		0.0000	0.0000	30.1863	856.7554	886.9417	3.1345	0.0796	989.0224
Total	**19.1821**	**22.4721**	**80.3515**	**0.2943**	**32.2459**	**0.3982**	**32.6442**	**8.6320**	**0.3856**	**9.0175**	**552.6180**	**31,734.0188**	**32,286.6368**	**35.3923**	**0.1355**	**33,211.8317**

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	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Energy	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	4,601.8455	4,601.8455	0.1420	0.0559	4,622.0635
Mobile	4.7100	20.5701	65.0632	0.2826	32.2459	0.1793	32.4252	8.6320	0.1666	8.7986	0.0000	26,251.7988	26,251.7988	1.2185	0.0000	26,282.2610
Waste						0.0000	0.0000		0.0000	0.0000	522.4318	0.0000	522.4318	30.8748	0.0000	1,294.3026
Water						0.0000	0.0000		0.0000	0.0000	30.1863	856.7554	886.9417	3.1345	0.0796	989.0224
Total	**19.1821**	**22.4721**	**80.3515**	**0.2943**	**32.2459**	**0.3982**	**32.6442**	**8.6320**	**0.3856**	**9.0175**	**552.6180**	**31,734.0188**	**32,286.6368**	**35.3923**	**0.1355**	**33,211.8317**

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

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	-5,991.1000
Total	**-5,991.1000**

3.0 Construction Detail

Construction Phase

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	A Phase 1 Site Prep	Site Preparation	4/3/2020	6/30/2020	5	63	
2	B Phase 1 Grading	Grading	7/1/2020	12/31/2020	5	132	
3	C Phase 1 Paving	Paving	1/1/2021	3/29/2021	5	62	
4	D Phase 1 Building Construction	Building Construction	4/1/2021	12/31/2021	5	197	
5	E Phase 1 Architectural Coating	Architectural Coating	7/1/2021	12/31/2021	5	132	
6	F Phase 4 Site Prep	Site Preparation	1/2/2022	6/1/2022	5	108	
7	G Phase 4 Grading	Grading	6/2/2022	11/29/2022	5	129	
8	H Phase 4 Paving	Paving	12/2/2022	3/1/2023	5	64	
9	I Phase 4 Building Construction	Building Construction	3/3/2023	12/1/2023	5	196	
10	J Phase 4 Architectural Coating	Architectural Coating	6/5/2023	12/1/2023	5	130	
11	K Phase 2 Site Prep	Site Preparation	1/5/2024	5/4/2024	5	86	
12	L Phase 2 Grading	Grading	5/5/2024	11/2/2024	5	130	
13	M Phase 2 Paving	Paving	11/3/2024	1/31/2025	5	65	
14	N Phase 2 Building Construction	Building Construction	2/1/2025	10/30/2025	5	194	
15	O Phase 2 Architectural Coating	Architectural Coating	5/2/2025	10/30/2025	5	130	
16	P Phase 5 Site Prep	Site Preparation	1/5/2026	4/6/2026	5	66	
17	Q Phase 5 Grading	Grading	4/7/2026	10/5/2026	5	130	
18	R Phase 5 Paving	Paving	10/6/2026	1/5/2027	5	66	
19	S Phase 5 Building Construction	Building Construction	1/6/2027	10/4/2027	5	194	
20	T Phase 5 Architectural Coating	Architectural Coating	4/6/2027	10/4/2027	5	130	
21	U Phase 3 Site Prep	Site Preparation	1/5/2028	5/4/2028	5	87	
22	W Phase 3 Paving	Paving	8/5/2028	12/3/2028	5	85	
23	X Phase 3 Building Construction	Building Construction	12/4/2028	2/4/2030	5	306	
24	Y Phase 3 Architectural Coating	Architectural Coating	4/7/2029	2/4/2030	5	216	
25	V Phase 3 Grading	Grading	5/2/2029	7/31/2029	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 5,079,510; Residential Outdoor: 1,693,170; Non-Residential Indoor: 550,477; Non-Residential Outdoor: 183,492; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

G Phase 4 Grading	Graders	1	8.00	187	0.41
G Phase 4 Grading	Rubber Tired Dozers	1	8.00	247	0.40
G Phase 4 Grading	Scrapers	2	8.00	367	0.48
G Phase 4 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
H Phase 4 Paving	Pavers	2	8.00	130	0.42
H Phase 4 Paving	Paving Equipment	2	8.00	132	0.36
H Phase 4 Paving	Rollers	2	8.00	80	0.38
I Phase 4 Building Construction	Cranes	1	7.00	231	0.29
I Phase 4 Building Construction	Forklifts	3	8.00	89	0.20
I Phase 4 Building Construction	Generator Sets	1	8.00	84	0.74
I Phase 4 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
I Phase 4 Building Construction	Welders	1	8.00	46	0.45
J Phase 4 Architectural Coating	Air Compressors	1	6.00	78	0.48
K Phase 2 Site Prep	Rubber Tired Dozers	3	8.00	247	0.40
K Phase 2 Site Prep	Tractors/Loaders/Backhoes	4	8.00	97	0.37
L Phase 2 Grading	Excavators	2	8.00	158	0.38
L Phase 2 Grading	Graders	1	8.00	187	0.41
L Phase 2 Grading	Rubber Tired Dozers	1	8.00	247	0.40
L Phase 2 Grading	Scrapers	2	8.00	367	0.48
L Phase 2 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
M Phase 2 Paving	Pavers	2	8.00	130	0.42
M Phase 2 Paving	Paving Equipment	2	8.00	132	0.36
M Phase 2 Paving	Rollers	2	8.00	80	0.38
N Phase 2 Building Construction	Cranes	1	7.00	231	0.29
N Phase 2 Building Construction	Forklifts	3	8.00	89	0.20
N Phase 2 Building Construction	Generator Sets	1	8.00	84	0.74
N Phase 2 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

N Phase 2 Building Construction	Welders	1	8.00	46	0.45
O Phase 2 Architectural Coating	Air Compressors	1	6.00	78	0.48
P Phase 5 Site Prep	Rubber Tired Dozers	3	8.00	247	0.40
P Phase 5 Site Prep	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Q Phase 5 Grading	Excavators	2	8.00	158	0.38
Q Phase 5 Grading	Graders	1	8.00	187	0.41
Q Phase 5 Grading	Rubber Tired Dozers	1	8.00	247	0.40
Q Phase 5 Grading	Scrapers	2	8.00	367	0.48
Q Phase 5 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
R Phase 5 Paving	Pavers	2	8.00	130	0.42
R Phase 5 Paving	Paving Equipment	2	8.00	132	0.36
R Phase 5 Paving	Rollers	2	8.00	80	0.38
S Phase 5 Building Construction	Cranes	1	7.00	231	0.29
S Phase 5 Building Construction	Forklifts	3	8.00	89	0.20
S Phase 5 Building Construction	Generator Sets	1	8.00	84	0.74
S Phase 5 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
S Phase 5 Building Construction	Welders	1	8.00	46	0.45
T Phase 5 Architectural Coating	Air Compressors	1	6.00	78	0.48
U Phase 3 Site Prep	Rubber Tired Dozers	3	8.00	247	0.40
U Phase 3 Site Prep	Tractors/Loaders/Backhoes	4	8.00	97	0.37
W Phase 3 Paving	Pavers	2	8.00	130	0.42
W Phase 3 Paving	Paving Equipment	2	8.00	132	0.36
W Phase 3 Paving	Rollers	2	8.00	80	0.38
X Phase 3 Building Construction	Cranes	1	7.00	231	0.29
X Phase 3 Building Construction	Forklifts	3	8.00	89	0.20
X Phase 3 Building Construction	Generator Sets	1	8.00	84	0.74
X Phase 3 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

X Phase 3 Building Construction	Welders	1	8.00	46	0.45
Y Phase 3 Architectural Coating	Air Compressors	1	6.00	78	0.48
V Phase 3 Grading	Excavators	2	8.00	158	0.38
V Phase 3 Grading	Graders	1	8.00	187	0.41
V Phase 3 Grading	Rubber Tired Dozers	1	8.00	247	0.40
V Phase 3 Grading	Scrapers	2	8.00	367	0.48
V Phase 3 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

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
A Phase 1 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
B Phase 1 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
C Phase 1 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
D Phase 1 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
E Phase 1 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
F Phase 4 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
G Phase 4 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
H Phase 4 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
I Phase 4 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
J Phase 4 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
K Phase 2 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
L Phase 2 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
M Phase 2 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
N Phase 2 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
O Phase 2 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P Phase 5 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Q Phase 5 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
R Phase 5 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
S Phase 5 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
T Phase 5 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
U Phase 3 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
W Phase 3 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
X Phase 3 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Y Phase 3 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
V Phase 3 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 A Phase 1 Site Prep - 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					0.7421	0.0000	0.7421	0.3315	0.0000	0.3315	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1284	1.3362	0.6777	1.2000e-003		0.0692	0.0692		0.0637	0.0637	0.0000	105.3066	105.3066	0.0341	0.0000	106.1581
Total	**0.1284**	**1.3362**	**0.6777**	**1.2000e-003**	**0.7421**	**0.0692**	**0.8113**	**0.3315**	**0.0637**	**0.3952**	**0.0000**	**105.3066**	**105.3066**	**0.0341**	**0.0000**	**106.1581**

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	2.0900e-003	1.5500e-003	0.0152	5.0000e-005	4.5500e-003	3.0000e-005	4.5800e-003	1.2100e-003	3.0000e-005	1.2400e-003	0.0000	4.1100	4.1100	1.2000e-004	0.0000	4.1131
Total	**2.0900e-003**	**1.5500e-003**	**0.0152**	**5.0000e-005**	**4.5500e-003**	**3.0000e-005**	**4.5800e-003**	**1.2100e-003**	**3.0000e-005**	**1.2400e-003**	**0.0000**	**4.1100**	**4.1100**	**1.2000e-004**	**0.0000**	**4.1131**

3.2 A Phase 1 Site Prep - 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					0.7421	0.0000	0.7421	0.3315	0.0000	0.3315	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1284	1.3361	0.6777	1.2000e-003		0.0692	0.0692		0.0637	0.0637	0.0000	105.3065	105.3065	0.0341	0.0000	106.1580
Total	**0.1284**	**1.3361**	**0.6777**	**1.2000e-003**	**0.7421**	**0.0692**	**0.8113**	**0.3315**	**0.0637**	**0.3952**	**0.0000**	**105.3065**	**105.3065**	**0.0341**	**0.0000**	**106.1580**

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	2.0900e-003	1.5500e-003	0.0152	5.0000e-005	4.5500e-003	3.0000e-005	4.5800e-003	1.2100e-003	3.0000e-005	1.2400e-003	0.0000	4.1100	4.1100	1.2000e-004	0.0000	4.1131
Total	**2.0900e-003**	**1.5500e-003**	**0.0152**	**5.0000e-005**	**4.5500e-003**	**3.0000e-005**	**4.5800e-003**	**1.2100e-003**	**3.0000e-005**	**1.2400e-003**	**0.0000**	**4.1100**	**4.1100**	**1.2000e-004**	**0.0000**	**4.1131**

3.3 B Phase 1 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5704	0.0000	0.5704	0.2372	0.0000	0.2372	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2937	3.3130	2.1093	4.0900e-003		0.1435	0.1435		0.1320	0.1320	0.0000	359.5963	359.5963	0.1163	0.0000	362.5039
Total	**0.2937**	**3.3130**	**2.1093**	**4.0900e-003**	**0.5704**	**0.1435**	**0.7139**	**0.2372**	**0.1320**	**0.3692**	**0.0000**	**359.5963**	**359.5963**	**0.1163**	**0.0000**	**362.5039**

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	4.8700e-003	3.6000e-003	0.0353	1.1000e-004	0.0106	8.0000e-005	0.0107	2.8100e-003	7.0000e-005	2.8800e-003	0.0000	9.5684	9.5684	2.9000e-004	0.0000	9.5755
Total	**4.8700e-003**	**3.6000e-003**	**0.0353**	**1.1000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8100e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**9.5684**	**9.5684**	**2.9000e-004**	**0.0000**	**9.5755**

3.3 B Phase 1 Grading - 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					0.5704	0.0000	0.5704	0.2372	0.0000	0.2372	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2937	3.3130	2.1092	4.0900e-003		0.1435	0.1435		0.1320	0.1320	0.0000	359.5959	359.5959	0.1163	0.0000	362.5034
Total	**0.2937**	**3.3130**	**2.1092**	**4.0900e-003**	**0.5704**	**0.1435**	**0.7139**	**0.2372**	**0.1320**	**0.3692**	**0.0000**	**359.5959**	**359.5959**	**0.1163**	**0.0000**	**362.5034**

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	4.8700e-003	3.6000e-003	0.0353	1.1000e-004	0.0106	8.0000e-005	0.0107	2.8100e-003	7.0000e-005	2.8800e-003	0.0000	9.5684	9.5684	2.9000e-004	0.0000	9.5755
Total	**4.8700e-003**	**3.6000e-003**	**0.0353**	**1.1000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8100e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**9.5684**	**9.5684**	**2.9000e-004**	**0.0000**	**9.5755**

3.4 C Phase 1 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0389	0.4005	0.4543	7.1000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	62.0728	62.0728	0.0201	0.0000	62.5747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.4005**	**0.4543**	**7.1000e-004**		**0.0210**	**0.0210**		**0.0193**	**0.0193**	**0.0000**	**62.0728**	**62.0728**	**0.0201**	**0.0000**	**62.5747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1500e-003	0.0116	4.0000e-005	3.7300e-003	3.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0200e-003	0.0000	3.2574	3.2574	9.0000e-005	0.0000	3.2598
Total	**1.6200e-003**	**1.1500e-003**	**0.0116**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7600e-003**	**9.9000e-004**	**2.0000e-005**	**1.0200e-003**	**0.0000**	**3.2574**	**3.2574**	**9.0000e-005**	**0.0000**	**3.2598**

3.4 C Phase 1 Paving - 2021

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	0.0389	0.4005	0.4543	7.1000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	62.0727	62.0727	0.0201	0.0000	62.5746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.4005**	**0.4543**	**7.1000e-004**		**0.0210**	**0.0210**		**0.0193**	**0.0193**	**0.0000**	**62.0727**	**62.0727**	**0.0201**	**0.0000**	**62.5746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1500e-003	0.0116	4.0000e-005	3.7300e-003	3.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0200e-003	0.0000	3.2574	3.2574	9.0000e-005	0.0000	3.2598
Total	**1.6200e-003**	**1.1500e-003**	**0.0116**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7600e-003**	**9.9000e-004**	**2.0000e-005**	**1.0200e-003**	**0.0000**	**3.2574**	**3.2574**	**9.0000e-005**	**0.0000**	**3.2598**

3.5 D Phase 1 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	0.1872	1.7171	1.6327	2.6500e-003		0.0944	0.0944		0.0888	0.0888	0.0000	228.1627	228.1627	0.0551	0.0000	229.5389
Total	**0.1872**	**1.7171**	**1.6327**	**2.6500e-003**		**0.0944**	**0.0944**		**0.0888**	**0.0888**	**0.0000**	**228.1627**	**228.1627**	**0.0551**	**0.0000**	**229.5389**

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	0.0816	2.7128	0.7235	7.0700e-003	0.1752	5.7400e-003	0.1810	0.0506	5.4900e-003	0.0561	0.0000	690.1494	690.1494	0.0512	0.0000	691.4300
Worker	0.4181	0.2983	3.0046	9.3200e-003	0.9645	6.8300e-003	0.9713	0.2563	6.2900e-003	0.2626	0.0000	842.5081	842.5081	0.0242	0.0000	843.1118
Total	**0.4997**	**3.0111**	**3.7281**	**0.0164**	**1.1397**	**0.0126**	**1.1522**	**0.3069**	**0.0118**	**0.3187**	**0.0000**	**1,532.6575**	**1,532.6575**	**0.0754**	**0.0000**	**1,534.5417**

3.5 D Phase 1 Building Construction - 2021

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	0.1872	1.7171	1.6327	2.6500e-003		0.0944	0.0944		0.0888	0.0888	0.0000	228.1625	228.1625	0.0551	0.0000	229.5386
Total	**0.1872**	**1.7171**	**1.6327**	**2.6500e-003**		**0.0944**	**0.0944**		**0.0888**	**0.0888**	**0.0000**	**228.1625**	**228.1625**	**0.0551**	**0.0000**	**229.5386**

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	0.0816	2.7128	0.7235	7.0700e-003	0.1752	5.7400e-003	0.1810	0.0506	5.4900e-003	0.0561	0.0000	690.1494	690.1494	0.0512	0.0000	691.4300
Worker	0.4181	0.2983	3.0046	9.3200e-003	0.9645	6.8300e-003	0.9713	0.2563	6.2900e-003	0.2626	0.0000	842.5081	842.5081	0.0242	0.0000	843.1118
Total	**0.4997**	**3.0111**	**3.7281**	**0.0164**	**1.1397**	**0.0126**	**1.1522**	**0.3069**	**0.0118**	**0.3187**	**0.0000**	**1,532.6575**	**1,532.6575**	**0.0754**	**0.0000**	**1,534.5417**

3.6 E Phase 1 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1008	0.1200	2.0000e-004		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.0000	16.8515	16.8515	1.1600e-003	0.0000	16.8804
Total	**26.1094**	**0.1008**	**0.1200**	**2.0000e-004**		**6.2100e-003**	**6.2100e-003**		**6.2100e-003**	**6.2100e-003**	**0.0000**	**16.8515**	**16.8515**	**1.1600e-003**	**0.0000**	**16.8804**

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	0.0560	0.0399	0.4023	1.2500e-003	0.1291	9.1000e-004	0.1301	0.0343	8.4000e-004	0.0352	0.0000	112.8122	112.8122	3.2300e-003	0.0000	112.8930
Total	**0.0560**	**0.0399**	**0.4023**	**1.2500e-003**	**0.1291**	**9.1000e-004**	**0.1301**	**0.0343**	**8.4000e-004**	**0.0352**	**0.0000**	**112.8122**	**112.8122**	**3.2300e-003**	**0.0000**	**112.8930**

3.6 E Phase 1 Architectural Coating - 2021

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1008	0.1200	2.0000e-004		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.0000	16.8515	16.8515	1.1600e-003	0.0000	16.8804
Total	**26.1094**	**0.1008**	**0.1200**	**2.0000e-004**		**6.2100e-003**	**6.2100e-003**		**6.2100e-003**	**6.2100e-003**	**0.0000**	**16.8515**	**16.8515**	**1.1600e-003**	**0.0000**	**16.8804**

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	0.0560	0.0399	0.4023	1.2500e-003	0.1291	9.1000e-004	0.1301	0.0343	8.4000e-004	0.0352	0.0000	112.8122	112.8122	3.2300e-003	0.0000	112.8930
Total	**0.0560**	**0.0399**	**0.4023**	**1.2500e-003**	**0.1291**	**9.1000e-004**	**0.1301**	**0.0343**	**8.4000e-004**	**0.0352**	**0.0000**	**112.8122**	**112.8122**	**3.2300e-003**	**0.0000**	**112.8930**

3.7 F Phase 4 Site Prep - 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					
Fugitive Dust					1.1479	0.0000	1.1479	0.5549	0.0000	0.5549	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1712	1.7865	1.0637	2.0500e-003		0.0871	0.0871		0.0801	0.0801	0.0000	180.5727	180.5727	0.0584	0.0000	182.0327
Total	**0.1712**	**1.7865**	**1.0637**	**2.0500e-003**	**1.1479**	**0.0871**	**1.2350**	**0.5549**	**0.0801**	**0.6350**	**0.0000**	**180.5727**	**180.5727**	**0.0584**	**0.0000**	**182.0327**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.2000e-003	0.0225	7.0000e-005	7.7900e-003	5.0000e-005	7.8500e-003	2.0700e-003	5.0000e-005	2.1200e-003	0.0000	6.5595	6.5595	1.8000e-004	0.0000	6.5639
Total	**3.2000e-003**	**2.2000e-003**	**0.0225**	**7.0000e-005**	**7.7900e-003**	**5.0000e-005**	**7.8500e-003**	**2.0700e-003**	**5.0000e-005**	**2.1200e-003**	**0.0000**	**6.5595**	**6.5595**	**1.8000e-004**	**0.0000**	**6.5639**

3.7 F Phase 4 Site Prep - 2022

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					1.1479	0.0000	1.1479	0.5549	0.0000	0.5549	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1712	1.7865	1.0637	2.0500e-003		0.0871	0.0871		0.0801	0.0801	0.0000	180.5725	180.5725	0.0584	0.0000	182.0325
Total	**0.1712**	**1.7865**	**1.0637**	**2.0500e-003**	**1.1479**	**0.0871**	**1.2350**	**0.5549**	**0.0801**	**0.6350**	**0.0000**	**180.5725**	**180.5725**	**0.0584**	**0.0000**	**182.0325**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.2000e-003	0.0225	7.0000e-005	7.7900e-003	5.0000e-005	7.8500e-003	2.0700e-003	5.0000e-005	2.1200e-003	0.0000	6.5595	6.5595	1.8000e-004	0.0000	6.5639
Total	**3.2000e-003**	**2.2000e-003**	**0.0225**	**7.0000e-005**	**7.7900e-003**	**5.0000e-005**	**7.8500e-003**	**2.0700e-003**	**5.0000e-005**	**2.1200e-003**	**0.0000**	**6.5595**	**6.5595**	**1.8000e-004**	**0.0000**	**6.5639**

3.8 G Phase 4 Grading - 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					
Fugitive Dust					0.5608	0.0000	0.5608	0.2321	0.0000	0.2321	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2338	2.5054	1.8732	4.0000e-003		0.1055	0.1055		0.0970	0.0970	0.0000	351.7482	351.7482	0.1138	0.0000	354.5922
Total	**0.2338**	**2.5054**	**1.8732**	**4.0000e-003**	**0.5608**	**0.1055**	**0.6662**	**0.2321**	**0.0970**	**0.3291**	**0.0000**	**351.7482**	**351.7482**	**0.1138**	**0.0000**	**354.5922**

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	4.2400e-003	2.9200e-003	0.0299	1.0000e-004	0.0103	7.0000e-005	0.0104	2.7500e-003	7.0000e-005	2.8100e-003	0.0000	8.7055	8.7055	2.4000e-004	0.0000	8.7114
Total	**4.2400e-003**	**2.9200e-003**	**0.0299**	**1.0000e-004**	**0.0103**	**7.0000e-005**	**0.0104**	**2.7500e-003**	**7.0000e-005**	**2.8100e-003**	**0.0000**	**8.7055**	**8.7055**	**2.4000e-004**	**0.0000**	**8.7114**

3.8 G Phase 4 Grading - 2022

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					0.5608	0.0000	0.5608	0.2321	0.0000	0.2321	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2338	2.5054	1.8732	4.0000e-003		0.1055	0.1055		0.0970	0.0970	0.0000	351.7478	351.7478	0.1138	0.0000	354.5918
Total	**0.2338**	**2.5054**	**1.8732**	**4.0000e-003**	**0.5608**	**0.1055**	**0.6662**	**0.2321**	**0.0970**	**0.3291**	**0.0000**	**351.7478**	**351.7478**	**0.1138**	**0.0000**	**354.5918**

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	4.2400e-003	2.9200e-003	0.0299	1.0000e-004	0.0103	7.0000e-005	0.0104	2.7500e-003	7.0000e-005	2.8100e-003	0.0000	8.7055	8.7055	2.4000e-004	0.0000	8.7114
Total	**4.2400e-003**	**2.9200e-003**	**0.0299**	**1.0000e-004**	**0.0103**	**7.0000e-005**	**0.0104**	**2.7500e-003**	**7.0000e-005**	**2.8100e-003**	**0.0000**	**8.7055**	**8.7055**	**2.4000e-004**	**0.0000**	**8.7114**

3.9 H Phase 4 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	0.0116	0.1168	0.1531	2.4000e-004		5.9600e-003	5.9600e-003		5.4900e-003	5.4900e-003	0.0000	21.0289	21.0289	6.8000e-003	0.0000	21.1990
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1168**	**0.1531**	**2.4000e-004**		**5.9600e-003**	**5.9600e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**21.0289**	**21.0289**	**6.8000e-003**	**0.0000**	**21.1990**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.6000e-004	3.6500e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0629	1.0629	3.0000e-005	0.0000	1.0636
Total	**5.2000e-004**	**3.6000e-004**	**3.6500e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0629**	**1.0629**	**3.0000e-005**	**0.0000**	**1.0636**

3.9 H Phase 4 Paving - 2022

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	0.0116	0.1168	0.1531	2.4000e-004		5.9600e-003	5.9600e-003		5.4900e-003	5.4900e-003	0.0000	21.0289	21.0289	6.8000e-003	0.0000	21.1989
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1168**	**0.1531**	**2.4000e-004**		**5.9600e-003**	**5.9600e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**21.0289**	**21.0289**	**6.8000e-003**	**0.0000**	**21.1989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.6000e-004	3.6500e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0629	1.0629	3.0000e-005	0.0000	1.0636
Total	**5.2000e-004**	**3.6000e-004**	**3.6500e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0629**	**1.0629**	**3.0000e-005**	**0.0000**	**1.0636**

3.9 H Phase 4 Paving - 2023

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	0.0222	0.2191	0.3136	4.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	43.0578	43.0578	0.0139	0.0000	43.4059
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0222**	**0.2191**	**0.3136**	**4.9000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**43.0578**	**43.0578**	**0.0139**	**0.0000**	**43.4059**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.7000e-004	6.9400e-003	2.0000e-005	2.5900e-003	2.0000e-005	2.6000e-003	6.9000e-004	2.0000e-005	7.0000e-004	0.0000	2.0932	2.0932	5.0000e-005	0.0000	2.0946
Total	**1.0100e-003**	**6.7000e-004**	**6.9400e-003**	**2.0000e-005**	**2.5900e-003**	**2.0000e-005**	**2.6000e-003**	**6.9000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**2.0932**	**2.0932**	**5.0000e-005**	**0.0000**	**2.0946**

3.9 H Phase 4 Paving - 2023

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	0.0222	0.2191	0.3136	4.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	43.0577	43.0577	0.0139	0.0000	43.4059
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0222**	**0.2191**	**0.3136**	**4.9000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**43.0577**	**43.0577**	**0.0139**	**0.0000**	**43.4059**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.7000e-004	6.9400e-003	2.0000e-005	2.5900e-003	2.0000e-005	2.6000e-003	6.9000e-004	2.0000e-005	7.0000e-004	0.0000	2.0932	2.0932	5.0000e-005	0.0000	2.0946
Total	**1.0100e-003**	**6.7000e-004**	**6.9400e-003**	**2.0000e-005**	**2.5900e-003**	**2.0000e-005**	**2.6000e-003**	**6.9000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**2.0932**	**2.0932**	**5.0000e-005**	**0.0000**	**2.0946**

3.10 I Phase 4 Building Construction - 2023

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	0.1541	1.4097	1.5919	2.6400e-003		0.0686	0.0686		0.0645	0.0645	0.0000	227.1687	227.1687	0.0540	0.0000	228.5197
Total	**0.1541**	**1.4097**	**1.5919**	**2.6400e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**227.1687**	**227.1687**	**0.0540**	**0.0000**	**228.5197**

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	0.0583	2.0023	0.6206	6.7700e-003	0.1743	2.4000e-003	0.1767	0.0503	2.2900e-003	0.0526	0.0000	663.0218	663.0218	0.0451	0.0000	664.1488
Worker	0.3731	0.2470	2.5739	8.5900e-003	0.9596	6.5100e-003	0.9661	0.2550	6.0000e-003	0.2610	0.0000	776.6587	776.6587	0.0201	0.0000	777.1618
Total	**0.4314**	**2.2494**	**3.1945**	**0.0154**	**1.1339**	**8.9100e-003**	**1.1428**	**0.3053**	**8.2900e-003**	**0.3136**	**0.0000**	**1,439.6805**	**1,439.6805**	**0.0652**	**0.0000**	**1,441.3106**

3.10 I Phase 4 Building Construction - 2023

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	0.1541	1.4097	1.5919	2.6400e-003		0.0686	0.0686		0.0645	0.0645	0.0000	227.1684	227.1684	0.0540	0.0000	228.5194
Total	**0.1541**	**1.4097**	**1.5919**	**2.6400e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**227.1684**	**227.1684**	**0.0540**	**0.0000**	**228.5194**

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	0.0583	2.0023	0.6206	6.7700e-003	0.1743	2.4000e-003	0.1767	0.0503	2.2900e-003	0.0526	0.0000	663.0218	663.0218	0.0451	0.0000	664.1488
Worker	0.3731	0.2470	2.5739	8.5900e-003	0.9596	6.5100e-003	0.9661	0.2550	6.0000e-003	0.2610	0.0000	776.6587	776.6587	0.0201	0.0000	777.1618
Total	**0.4314**	**2.2494**	**3.1945**	**0.0154**	**1.1339**	**8.9100e-003**	**1.1428**	**0.3053**	**8.2900e-003**	**0.3136**	**0.0000**	**1,439.6805**	**1,439.6805**	**0.0652**	**0.0000**	**1,441.3106**

3.11 J Phase 4 Architectural Coating - 2023

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0125	0.0847	0.1177	1.9000e-004		4.6000e-003	4.6000e-003		4.6000e-003	4.6000e-003	0.0000	16.5962	16.5962	9.9000e-004	0.0000	16.6210
Total	**26.1075**	**0.0847**	**0.1177**	**1.9000e-004**		**4.6000e-003**	**4.6000e-003**		**4.6000e-003**	**4.6000e-003**	**0.0000**	**16.5962**	**16.5962**	**9.9000e-004**	**0.0000**	**16.6210**

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	0.0495	0.0327	0.3412	1.1400e-003	0.1272	8.6000e-004	0.1281	0.0338	7.9000e-004	0.0346	0.0000	102.9418	102.9418	2.6700e-003	0.0000	103.0085
Total	**0.0495**	**0.0327**	**0.3412**	**1.1400e-003**	**0.1272**	**8.6000e-004**	**0.1281**	**0.0338**	**7.9000e-004**	**0.0346**	**0.0000**	**102.9418**	**102.9418**	**2.6700e-003**	**0.0000**	**103.0085**

3.11 J Phase 4 Architectural Coating - 2023

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0125	0.0847	0.1177	1.9000e-004		4.6000e-003	4.6000e-003		4.6000e-003	4.6000e-003	0.0000	16.5961	16.5961	9.9000e-004	0.0000	16.6210
Total	**26.1075**	**0.0847**	**0.1177**	**1.9000e-004**		**4.6000e-003**	**4.6000e-003**		**4.6000e-003**	**4.6000e-003**	**0.0000**	**16.5961**	**16.5961**	**9.9000e-004**	**0.0000**	**16.6210**

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	0.0495	0.0327	0.3412	1.1400e-003	0.1272	8.6000e-004	0.1281	0.0338	7.9000e-004	0.0346	0.0000	102.9418	102.9418	2.6700e-003	0.0000	103.0085
Total	**0.0495**	**0.0327**	**0.3412**	**1.1400e-003**	**0.1272**	**8.6000e-004**	**0.1281**	**0.0338**	**7.9000e-004**	**0.0346**	**0.0000**	**102.9418**	**102.9418**	**2.6700e-003**	**0.0000**	**103.0085**

3.12 K Phase 2 Site Prep - 2024

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					0.9479	0.0000	0.9479	0.4455	0.0000	0.4455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1144	1.1686	0.7884	1.6400e-003		0.0529	0.0529		0.0486	0.0486	0.0000	143.8654	143.8654	0.0465	0.0000	145.0286
Total	**0.1144**	**1.1686**	**0.7884**	**1.6400e-003**	**0.9479**	**0.0529**	**1.0007**	**0.4455**	**0.0486**	**0.4941**	**0.0000**	**143.8654**	**143.8654**	**0.0465**	**0.0000**	**145.0286**

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	2.3000e-003	1.4700e-003	0.0156	5.0000e-005	6.2100e-003	4.0000e-005	6.2500e-003	1.6500e-003	4.0000e-005	1.6900e-003	0.0000	4.8260	4.8260	1.2000e-004	0.0000	4.8290
Total	**2.3000e-003**	**1.4700e-003**	**0.0156**	**5.0000e-005**	**6.2100e-003**	**4.0000e-005**	**6.2500e-003**	**1.6500e-003**	**4.0000e-005**	**1.6900e-003**	**0.0000**	**4.8260**	**4.8260**	**1.2000e-004**	**0.0000**	**4.8290**

3.12 K Phase 2 Site Prep - 2024

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					0.9479	0.0000	0.9479	0.4455	0.0000	0.4455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1144	1.1686	0.7884	1.6400e-003		0.0529	0.0529		0.0486	0.0486	0.0000	143.8652	143.8652	0.0465	0.0000	145.0284
Total	**0.1144**	**1.1686**	**0.7884**	**1.6400e-003**	**0.9479**	**0.0529**	**1.0007**	**0.4455**	**0.0486**	**0.4941**	**0.0000**	**143.8652**	**143.8652**	**0.0465**	**0.0000**	**145.0284**

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	2.3000e-003	1.4700e-003	0.0156	5.0000e-005	6.2100e-003	4.0000e-005	6.2500e-003	1.6500e-003	4.0000e-005	1.6900e-003	0.0000	4.8260	4.8260	1.2000e-004	0.0000	4.8290
Total	**2.3000e-003**	**1.4700e-003**	**0.0156**	**5.0000e-005**	**6.2100e-003**	**4.0000e-005**	**6.2500e-003**	**1.6500e-003**	**4.0000e-005**	**1.6900e-003**	**0.0000**	**4.8260**	**4.8260**	**1.2000e-004**	**0.0000**	**4.8290**

3.13 L Phase 2 Grading - 2024

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					0.5624	0.0000	0.5624	0.2336	0.0000	0.2336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2092	2.1045	1.8020	4.0300e-003		0.0868	0.0868		0.0799	0.0799	0.0000	354.3769	354.3769	0.1146	0.0000	357.2422
Total	**0.2092**	**2.1045**	**1.8020**	**4.0300e-003**	**0.5624**	**0.0868**	**0.6492**	**0.2336**	**0.0799**	**0.3135**	**0.0000**	**354.3769**	**354.3769**	**0.1146**	**0.0000**	**357.2422**

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	3.8500e-003	2.4600e-003	0.0261	9.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	8.1057	8.1057	2.0000e-004	0.0000	8.1107
Total	**3.8500e-003**	**2.4600e-003**	**0.0261**	**9.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**8.1057**	**8.1057**	**2.0000e-004**	**0.0000**	**8.1107**

3.13 L Phase 2 Grading - 2024

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					0.5624	0.0000	0.5624	0.2336	0.0000	0.2336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2092	2.1045	1.8020	4.0300e-003		0.0868	0.0868		0.0799	0.0799	0.0000	354.3765	354.3765	0.1146	0.0000	357.2418
Total	**0.2092**	**2.1045**	**1.8020**	**4.0300e-003**	**0.5624**	**0.0868**	**0.6492**	**0.2336**	**0.0799**	**0.3135**	**0.0000**	**354.3765**	**354.3765**	**0.1146**	**0.0000**	**357.2418**

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	3.8500e-003	2.4600e-003	0.0261	9.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	8.1057	8.1057	2.0000e-004	0.0000	8.1107
Total	**3.8500e-003**	**2.4600e-003**	**0.0261**	**9.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**8.1057**	**8.1057**	**2.0000e-004**	**0.0000**	**8.1107**

3.14 M Phase 2 Paving - 2024

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	0.0208	0.2000	0.3071	4.8000e-004		9.8400e-003	9.8400e-003		9.0500e-003	9.0500e-003	0.0000	42.0557	42.0557	0.0136	0.0000	42.3958
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0208**	**0.2000**	**0.3071**	**4.8000e-004**		**9.8400e-003**	**9.8400e-003**		**9.0500e-003**	**9.0500e-003**	**0.0000**	**42.0557**	**42.0557**	**0.0136**	**0.0000**	**42.3958**

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	9.3000e-004	6.0000e-004	6.3300e-003	2.0000e-005	2.5300e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	1.9641	1.9641	5.0000e-005	0.0000	1.9653
Total	**9.3000e-004**	**6.0000e-004**	**6.3300e-003**	**2.0000e-005**	**2.5300e-003**	**2.0000e-005**	**2.5400e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**1.9641**	**1.9641**	**5.0000e-005**	**0.0000**	**1.9653**

3.14 M Phase 2 Paving - 2024

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	0.0208	0.2000	0.3071	4.8000e-004		9.8400e-003	9.8400e-003		9.0500e-003	9.0500e-003	0.0000	42.0557	42.0557	0.0136	0.0000	42.3957
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0208**	**0.2000**	**0.3071**	**4.8000e-004**		**9.8400e-003**	**9.8400e-003**		**9.0500e-003**	**9.0500e-003**	**0.0000**	**42.0557**	**42.0557**	**0.0136**	**0.0000**	**42.3957**

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	9.3000e-004	6.0000e-004	6.3300e-003	2.0000e-005	2.5300e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	1.9641	1.9641	5.0000e-005	0.0000	1.9653
Total	**9.3000e-004**	**6.0000e-004**	**6.3300e-003**	**2.0000e-005**	**2.5300e-003**	**2.0000e-005**	**2.5400e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**1.9641**	**1.9641**	**5.0000e-005**	**0.0000**	**1.9653**

3.14 M Phase 2 Paving - 2025

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	0.0105	0.0987	0.1677	2.6000e-004		4.8100e-003	4.8100e-003		4.4300e-003	4.4300e-003	0.0000	23.0221	23.0221	7.4500e-003	0.0000	23.2083
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0987**	**0.1677**	**2.6000e-004**		**4.8100e-003**	**4.8100e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**23.0221**	**23.0221**	**7.4500e-003**	**0.0000**	**23.2083**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.2300e-003	1.0000e-005	1.3800e-003	1.0000e-005	1.3900e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.0321	1.0321	2.0000e-005	0.0000	1.0327
Total	**4.9000e-004**	**3.0000e-004**	**3.2300e-003**	**1.0000e-005**	**1.3800e-003**	**1.0000e-005**	**1.3900e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.0321**	**1.0321**	**2.0000e-005**	**0.0000**	**1.0327**

3.14 M Phase 2 Paving - 2025

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	0.0105	0.0987	0.1677	2.6000e-004		4.8100e-003	4.8100e-003		4.4300e-003	4.4300e-003	0.0000	23.0221	23.0221	7.4500e-003	0.0000	23.2083
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0987**	**0.1677**	**2.6000e-004**		**4.8100e-003**	**4.8100e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**23.0221**	**23.0221**	**7.4500e-003**	**0.0000**	**23.2083**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.2300e-003	1.0000e-005	1.3800e-003	1.0000e-005	1.3900e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.0321	1.0321	2.0000e-005	0.0000	1.0327
Total	**4.9000e-004**	**3.0000e-004**	**3.2300e-003**	**1.0000e-005**	**1.3800e-003**	**1.0000e-005**	**1.3900e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.0321**	**1.0321**	**2.0000e-005**	**0.0000**	**1.0327**

3.15 N Phase 2 Building Construction - 2025

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9619	224.9619	0.0529	0.0000	226.2839
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9619**	**224.9619**	**0.0529**	**0.0000**	**226.2839**

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	0.0540	1.9256	0.5827	6.6000e-003	0.1725	2.2400e-003	0.1748	0.0498	2.1400e-003	0.0520	0.0000	648.1182	648.1182	0.0436	0.0000	649.2083
Worker	0.3354	0.2068	2.2207	7.8300e-003	0.9498	6.2300e-003	0.9560	0.2524	5.7300e-003	0.2581	0.0000	708.6160	708.6160	0.0169	0.0000	709.0382
Total	**0.3894**	**2.1323**	**2.8034**	**0.0144**	**1.1223**	**8.4700e-003**	**1.1308**	**0.3022**	**7.8700e-003**	**0.3101**	**0.0000**	**1,356.7342**	**1,356.7342**	**0.0605**	**0.0000**	**1,358.2465**

3.15 N Phase 2 Building Construction - 2025

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9616	224.9616	0.0529	0.0000	226.2836
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9616**	**224.9616**	**0.0529**	**0.0000**	**226.2836**

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	0.0540	1.9256	0.5827	6.6000e-003	0.1725	2.2400e-003	0.1748	0.0498	2.1400e-003	0.0520	0.0000	648.1182	648.1182	0.0436	0.0000	649.2083
Worker	0.3354	0.2068	2.2207	7.8300e-003	0.9498	6.2300e-003	0.9560	0.2524	5.7300e-003	0.2581	0.0000	708.6160	708.6160	0.0169	0.0000	709.0382
Total	**0.3894**	**2.1323**	**2.8034**	**0.0144**	**1.1223**	**8.4700e-003**	**1.1308**	**0.3022**	**7.8700e-003**	**0.3101**	**0.0000**	**1,356.7342**	**1,356.7342**	**0.0605**	**0.0000**	**1,358.2465**

3.16 O Phase 2 Architectural Coating - 2025

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5962	16.5962	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5962**	**16.5962**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0449	0.0277	0.2974	1.0500e-003	0.1272	8.3000e-004	0.1280	0.0338	7.7000e-004	0.0346	0.0000	94.8914	94.8914	2.2600e-003	0.0000	94.9479
Total	**0.0449**	**0.0277**	**0.2974**	**1.0500e-003**	**0.1272**	**8.3000e-004**	**0.1280**	**0.0338**	**7.7000e-004**	**0.0346**	**0.0000**	**94.8914**	**94.8914**	**2.2600e-003**	**0.0000**	**94.9479**

3.16 O Phase 2 Architectural Coating - 2025

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5961	16.5961	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5961**	**16.5961**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0449	0.0277	0.2974	1.0500e-003	0.1272	8.3000e-004	0.1280	0.0338	7.7000e-004	0.0346	0.0000	94.8914	94.8914	2.2600e-003	0.0000	94.9479
Total	**0.0449**	**0.0277**	**0.2974**	**1.0500e-003**	**0.1272**	**8.3000e-004**	**0.1280**	**0.0338**	**7.7000e-004**	**0.0346**	**0.0000**	**94.8914**	**94.8914**	**2.2600e-003**	**0.0000**	**94.9479**

3.17 P Phase 5 Site Prep - 2026

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					0.7712	0.0000	0.7712	0.3466	0.0000	0.3466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0816	0.8327	0.5911	1.2600e-003		0.0359	0.0359		0.0330	0.0330	0.0000	110.4411	110.4411	0.0357	0.0000	111.3340
Total	**0.0816**	**0.8327**	**0.5911**	**1.2600e-003**	**0.7712**	**0.0359**	**0.8070**	**0.3466**	**0.0330**	**0.3796**	**0.0000**	**110.4411**	**110.4411**	**0.0357**	**0.0000**	**111.3340**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6100e-003	9.6000e-004	0.0105	4.0000e-005	4.7600e-003	3.0000e-005	4.7900e-003	1.2700e-003	3.0000e-005	1.2900e-003	0.0000	3.4238	3.4238	8.0000e-005	0.0000	3.4258
Total	**1.6100e-003**	**9.6000e-004**	**0.0105**	**4.0000e-005**	**4.7600e-003**	**3.0000e-005**	**4.7900e-003**	**1.2700e-003**	**3.0000e-005**	**1.2900e-003**	**0.0000**	**3.4238**	**3.4238**	**8.0000e-005**	**0.0000**	**3.4258**

3.17 P Phase 5 Site Prep - 2026

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					0.7712	0.0000	0.7712	0.3466	0.0000	0.3466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0816	0.8327	0.5911	1.2600e-003		0.0359	0.0359		0.0330	0.0330	0.0000	110.4409	110.4409	0.0357	0.0000	111.3339
Total	**0.0816**	**0.8327**	**0.5911**	**1.2600e-003**	**0.7712**	**0.0359**	**0.8070**	**0.3466**	**0.0330**	**0.3796**	**0.0000**	**110.4409**	**110.4409**	**0.0357**	**0.0000**	**111.3339**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6100e-003	9.6000e-004	0.0105	4.0000e-005	4.7600e-003	3.0000e-005	4.7900e-003	1.2700e-003	3.0000e-005	1.2900e-003	0.0000	3.4238	3.4238	8.0000e-005	0.0000	3.4258
Total	**1.6100e-003**	**9.6000e-004**	**0.0105**	**4.0000e-005**	**4.7600e-003**	**3.0000e-005**	**4.7900e-003**	**1.2700e-003**	**3.0000e-005**	**1.2900e-003**	**0.0000**	**3.4238**	**3.4238**	**8.0000e-005**	**0.0000**	**3.4258**

3.18 Q Phase 5 Grading - 2026

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					0.5638	0.0000	0.5638	0.2338	0.0000	0.2338	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1886	1.8163	1.7115	4.0300e-003		0.0735	0.0735		0.0676	0.0676	0.0000	354.2904	354.2904	0.1146	0.0000	357.1550
Total	**0.1886**	**1.8163**	**1.7115**	**4.0300e-003**	**0.5638**	**0.0735**	**0.6373**	**0.2338**	**0.0676**	**0.3014**	**0.0000**	**354.2904**	**354.2904**	**0.1146**	**0.0000**	**357.1550**

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	3.5300e-003	2.1100e-003	0.0229	8.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	7.4931	7.4931	1.7000e-004	0.0000	7.4975
Total	**3.5300e-003**	**2.1100e-003**	**0.0229**	**8.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**7.4931**	**7.4931**	**1.7000e-004**	**0.0000**	**7.4975**

3.18 Q Phase 5 Grading - 2026

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					0.5638	0.0000	0.5638	0.2338	0.0000	0.2338	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1886	1.8163	1.7115	4.0300e-003		0.0735	0.0735		0.0676	0.0676	0.0000	354.2900	354.2900	0.1146	0.0000	357.1546
Total	**0.1886**	**1.8163**	**1.7115**	**4.0300e-003**	**0.5638**	**0.0735**	**0.6373**	**0.2338**	**0.0676**	**0.3014**	**0.0000**	**354.2900**	**354.2900**	**0.1146**	**0.0000**	**357.1546**

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	3.5300e-003	2.1100e-003	0.0229	8.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	7.4931	7.4931	1.7000e-004	0.0000	7.4975
Total	**3.5300e-003**	**2.1100e-003**	**0.0229**	**8.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**7.4931**	**7.4931**	**1.7000e-004**	**0.0000**	**7.4975**

3.19 R Phase 5 Paving - 2026

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	0.0288	0.2703	0.4592	7.2000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	63.0607	63.0607	0.0204	0.0000	63.5705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0288**	**0.2703**	**0.4592**	**7.2000e-004**		**0.0132**	**0.0132**		**0.0121**	**0.0121**	**0.0000**	**63.0607**	**63.0607**	**0.0204**	**0.0000**	**63.5705**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	7.7000e-004	8.3300e-003	3.0000e-005	3.7900e-003	2.0000e-005	3.8100e-003	1.0100e-003	2.0000e-005	1.0300e-003	0.0000	2.7235	2.7235	6.0000e-005	0.0000	2.7250
Total	**1.2800e-003**	**7.7000e-004**	**8.3300e-003**	**3.0000e-005**	**3.7900e-003**	**2.0000e-005**	**3.8100e-003**	**1.0100e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.7235**	**2.7235**	**6.0000e-005**	**0.0000**	**2.7250**

3.19 R Phase 5 Paving - 2026

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	0.0288	0.2703	0.4592	7.2000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	63.0606	63.0606	0.0204	0.0000	63.5705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0288**	**0.2703**	**0.4592**	**7.2000e-004**		**0.0132**	**0.0132**		**0.0121**	**0.0121**	**0.0000**	**63.0606**	**63.0606**	**0.0204**	**0.0000**	**63.5705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	7.7000e-004	8.3300e-003	3.0000e-005	3.7900e-003	2.0000e-005	3.8100e-003	1.0100e-003	2.0000e-005	1.0300e-003	0.0000	2.7235	2.7235	6.0000e-005	0.0000	2.7250
Total	**1.2800e-003**	**7.7000e-004**	**8.3300e-003**	**3.0000e-005**	**3.7900e-003**	**2.0000e-005**	**3.8100e-003**	**1.0100e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.7235**	**2.7235**	**6.0000e-005**	**0.0000**	**2.7250**

3.19 R Phase 5 Paving - 2027

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	1.3700e-003	0.0129	0.0219	3.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	3.0029	3.0029	9.7000e-004	0.0000	3.0272
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3700e-003**	**0.0129**	**0.0219**	**3.0000e-005**		**6.3000e-004**	**6.3000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**3.0029**	**3.0029**	**9.7000e-004**	**0.0000**	**3.0272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	3.0000e-005	3.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1253	0.1253	0.0000	0.0000	0.1254
Total	**6.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1253**	**0.1253**	**0.0000**	**0.0000**	**0.1254**

3.19 R Phase 5 Paving - 2027

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	1.3700e-003	0.0129	0.0219	3.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	3.0029	3.0029	9.7000e-004	0.0000	3.0272
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3700e-003**	**0.0129**	**0.0219**	**3.0000e-005**		**6.3000e-004**	**6.3000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**3.0029**	**3.0029**	**9.7000e-004**	**0.0000**	**3.0272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	3.0000e-005	3.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1253	0.1253	0.0000	0.0000	0.1254
Total	**6.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1253**	**0.1253**	**0.0000**	**0.0000**	**0.1254**

3.20 S Phase 5 Building Construction - 2027

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9619	224.9619	0.0529	0.0000	226.2839
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9619**	**224.9619**	**0.0529**	**0.0000**	**226.2839**

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	0.0514	1.8716	0.5673	6.5100e-003	0.1725	2.1300e-003	0.1747	0.0498	2.0300e-003	0.0519	0.0000	641.0069	641.0069	0.0428	0.0000	642.0760
Worker	0.3077	0.1795	1.9682	7.2900e-003	0.9498	5.7100e-003	0.9555	0.2524	5.2500e-003	0.2576	0.0000	659.7959	659.7959	0.0147	0.0000	660.1641
Total	**0.3592**	**2.0511**	**2.5355**	**0.0138**	**1.1223**	**7.8400e-003**	**1.1301**	**0.3022**	**7.2800e-003**	**0.3095**	**0.0000**	**1,300.8028**	**1,300.8028**	**0.0575**	**0.0000**	**1,302.2401**

3.20 S Phase 5 Building Construction - 2027

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9616	224.9616	0.0529	0.0000	226.2836
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9616**	**224.9616**	**0.0529**	**0.0000**	**226.2836**

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	0.0514	1.8716	0.5673	6.5100e-003	0.1725	2.1300e-003	0.1747	0.0498	2.0300e-003	0.0519	0.0000	641.0069	641.0069	0.0428	0.0000	642.0760
Worker	0.3077	0.1795	1.9682	7.2900e-003	0.9498	5.7100e-003	0.9555	0.2524	5.2500e-003	0.2576	0.0000	659.7959	659.7959	0.0147	0.0000	660.1641
Total	**0.3592**	**2.0511**	**2.5355**	**0.0138**	**1.1223**	**7.8400e-003**	**1.1301**	**0.3022**	**7.2800e-003**	**0.3095**	**0.0000**	**1,300.8028**	**1,300.8028**	**0.0575**	**0.0000**	**1,302.2401**

3.21 T Phase 5 Architectural Coating - 2027

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5962	16.5962	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5962**	**16.5962**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0412	0.0240	0.2636	9.8000e-004	0.1272	7.6000e-004	0.1280	0.0338	7.0000e-004	0.0345	0.0000	88.3538	88.3538	1.9700e-003	0.0000	88.4031
Total	**0.0412**	**0.0240**	**0.2636**	**9.8000e-004**	**0.1272**	**7.6000e-004**	**0.1280**	**0.0338**	**7.0000e-004**	**0.0345**	**0.0000**	**88.3538**	**88.3538**	**1.9700e-003**	**0.0000**	**88.4031**

3.21 T Phase 5 Architectural Coating - 2027

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5961	16.5961	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5961**	**16.5961**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0412	0.0240	0.2636	9.8000e-004	0.1272	7.6000e-004	0.1280	0.0338	7.0000e-004	0.0345	0.0000	88.3538	88.3538	1.9700e-003	0.0000	88.4031
Total	**0.0412**	**0.0240**	**0.2636**	**9.8000e-004**	**0.1272**	**7.6000e-004**	**0.1280**	**0.0338**	**7.0000e-004**	**0.0345**	**0.0000**	**88.3538**	**88.3538**	**1.9700e-003**	**0.0000**	**88.4031**

3.22 U Phase 3 Site Prep - 2028

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					0.7859	0.0000	0.7859	0.4320	0.0000	0.4320	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1076	1.0977	0.7792	1.6600e-003		0.0473	0.0473		0.0435	0.0435	0.0000	145.5814	145.5814	0.0471	0.0000	146.7585
Total	**0.1076**	**1.0977**	**0.7792**	**1.6600e-003**	**0.7859**	**0.0473**	**0.8332**	**0.4320**	**0.0435**	**0.4755**	**0.0000**	**145.5814**	**145.5814**	**0.0471**	**0.0000**	**146.7585**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9400e-003	1.1100e-003	0.0123	5.0000e-005	6.2800e-003	3.0000e-005	6.3100e-003	1.6700e-003	3.0000e-005	1.7000e-003	0.0000	4.2293	4.2293	9.0000e-005	0.0000	4.2316
Total	**1.9400e-003**	**1.1100e-003**	**0.0123**	**5.0000e-005**	**6.2800e-003**	**3.0000e-005**	**6.3100e-003**	**1.6700e-003**	**3.0000e-005**	**1.7000e-003**	**0.0000**	**4.2293**	**4.2293**	**9.0000e-005**	**0.0000**	**4.2316**

3.22 U Phase 3 Site Prep - 2028

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					0.7859	0.0000	0.7859	0.4320	0.0000	0.4320	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1076	1.0977	0.7792	1.6600e-003		0.0473	0.0473		0.0435	0.0435	0.0000	145.5812	145.5812	0.0471	0.0000	146.7583
Total	**0.1076**	**1.0977**	**0.7792**	**1.6600e-003**	**0.7859**	**0.0473**	**0.8332**	**0.4320**	**0.0435**	**0.4755**	**0.0000**	**145.5812**	**145.5812**	**0.0471**	**0.0000**	**146.7583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9400e-003	1.1100e-003	0.0123	5.0000e-005	6.2800e-003	3.0000e-005	6.3100e-003	1.6700e-003	3.0000e-005	1.7000e-003	0.0000	4.2293	4.2293	9.0000e-005	0.0000	4.2316
Total	**1.9400e-003**	**1.1100e-003**	**0.0123**	**5.0000e-005**	**6.2800e-003**	**3.0000e-005**	**6.3100e-003**	**1.6700e-003**	**3.0000e-005**	**1.7000e-003**	**0.0000**	**4.2293**	**4.2293**	**9.0000e-005**	**0.0000**	**4.2316**

3.23 W Phase 3 Paving - 2028

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	0.0389	0.3647	0.6196	9.7000e-004		0.0178	0.0178		0.0164	0.0164	0.0000	85.0818	85.0818	0.0275	0.0000	85.7698
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.3647**	**0.6196**	**9.7000e-004**		**0.0178**	**0.0178**		**0.0164**	**0.0164**	**0.0000**	**85.0818**	**85.0818**	**0.0275**	**0.0000**	**85.7698**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5800e-003	9.1000e-004	0.0100	4.0000e-005	5.1100e-003	3.0000e-005	5.1400e-003	1.3600e-003	3.0000e-005	1.3800e-003	0.0000	3.4434	3.4434	7.0000e-005	0.0000	3.4453
Total	**1.5800e-003**	**9.1000e-004**	**0.0100**	**4.0000e-005**	**5.1100e-003**	**3.0000e-005**	**5.1400e-003**	**1.3600e-003**	**3.0000e-005**	**1.3800e-003**	**0.0000**	**3.4434**	**3.4434**	**7.0000e-005**	**0.0000**	**3.4453**

3.23 W Phase 3 Paving - 2028

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	0.0389	0.3647	0.6196	9.7000e-004		0.0178	0.0178		0.0164	0.0164	0.0000	85.0817	85.0817	0.0275	0.0000	85.7697
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.3647**	**0.6196**	**9.7000e-004**		**0.0178**	**0.0178**		**0.0164**	**0.0164**	**0.0000**	**85.0817**	**85.0817**	**0.0275**	**0.0000**	**85.7697**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5800e-003	9.1000e-004	0.0100	4.0000e-005	5.1100e-003	3.0000e-005	5.1400e-003	1.3600e-003	3.0000e-005	1.3800e-003	0.0000	3.4434	3.4434	7.0000e-005	0.0000	3.4453
Total	**1.5800e-003**	**9.1000e-004**	**0.0100**	**4.0000e-005**	**5.1100e-003**	**3.0000e-005**	**5.1400e-003**	**1.3600e-003**	**3.0000e-005**	**1.3800e-003**	**0.0000**	**3.4434**	**3.4434**	**7.0000e-005**	**0.0000**	**3.4453**

3.24 X Phase 3 Building Construction - 2028

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	0.0137	0.1247	0.1609	2.7000e-004		5.2800e-003	5.2800e-003		4.9600e-003	4.9600e-003	0.0000	23.1920	23.1920	5.4500e-003	0.0000	23.3282
Total	**0.0137**	**0.1247**	**0.1609**	**2.7000e-004**		**5.2800e-003**	**5.2800e-003**		**4.9600e-003**	**4.9600e-003**	**0.0000**	**23.1920**	**23.1920**	**5.4500e-003**	**0.0000**	**23.3282**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2100e-003	0.1907	0.0581	6.7000e-004	0.0178	2.1000e-004	0.0180	5.1400e-003	2.0000e-004	5.3400e-003	0.0000	65.7901	65.7901	4.3700e-003	0.0000	65.8994
Worker	0.0302	0.0173	0.1923	7.3000e-004	0.0979	5.5000e-004	0.0985	0.0260	5.0000e-004	0.0265	0.0000	65.9515	65.9515	1.4300e-003	0.0000	65.9873
Total	**0.0354**	**0.2080**	**0.2504**	**1.4000e-003**	**0.1157**	**7.6000e-004**	**0.1165**	**0.0312**	**7.0000e-004**	**0.0319**	**0.0000**	**131.7416**	**131.7416**	**5.8000e-003**	**0.0000**	**131.8866**

3.24 X Phase 3 Building Construction - 2028

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	0.0137	0.1247	0.1609	2.7000e-004		5.2800e-003	5.2800e-003		4.9600e-003	4.9600e-003	0.0000	23.1919	23.1919	5.4500e-003	0.0000	23.3282
Total	**0.0137**	**0.1247**	**0.1609**	**2.7000e-004**		**5.2800e-003**	**5.2800e-003**		**4.9600e-003**	**4.9600e-003**	**0.0000**	**23.1919**	**23.1919**	**5.4500e-003**	**0.0000**	**23.3282**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2100e-003	0.1907	0.0581	6.7000e-004	0.0178	2.1000e-004	0.0180	5.1400e-003	2.0000e-004	5.3400e-003	0.0000	65.7901	65.7901	4.3700e-003	0.0000	65.8994
Worker	0.0302	0.0173	0.1923	7.3000e-004	0.0979	5.5000e-004	0.0985	0.0260	5.0000e-004	0.0265	0.0000	65.9515	65.9515	1.4300e-003	0.0000	65.9873
Total	**0.0354**	**0.2080**	**0.2504**	**1.4000e-003**	**0.1157**	**7.6000e-004**	**0.1165**	**0.0312**	**7.0000e-004**	**0.0319**	**0.0000**	**131.7416**	**131.7416**	**5.8000e-003**	**0.0000**	**131.8866**

3.24 X Phase 3 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	0.0668	2.4579	0.7528	8.6600e-003	0.2321	2.7300e-003	0.2349	0.0670	2.6100e-003	0.0696	0.0000	854.8138	854.8138	0.0567	0.0000	856.2315
Worker	0.3729	0.2123	2.3772	9.2500e-003	1.2778	6.6000e-003	1.2844	0.3395	6.0800e-003	0.3456	0.0000	836.9331	836.9331	0.0176	0.0000	837.3732
Total	**0.4397**	**2.6702**	**3.1300**	**0.0179**	**1.5099**	**9.3300e-003**	**1.5192**	**0.4066**	**8.6900e-003**	**0.4153**	**0.0000**	**1,691.7469**	**1,691.7469**	**0.0743**	**0.0000**	**1,693.6047**

3.24 X Phase 3 Building Construction - 2029

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	0.0668	2.4579	0.7528	8.6600e-003	0.2321	2.7300e-003	0.2349	0.0670	2.6100e-003	0.0696	0.0000	854.8138	854.8138	0.0567	0.0000	856.2315
Worker	0.3729	0.2123	2.3772	9.2500e-003	1.2778	6.6000e-003	1.2844	0.3395	6.0800e-003	0.3456	0.0000	836.9331	836.9331	0.0176	0.0000	837.3732
Total	**0.4397**	**2.6702**	**3.1300**	**0.0179**	**1.5099**	**9.3300e-003**	**1.5192**	**0.4066**	**8.6900e-003**	**0.4153**	**0.0000**	**1,691.7469**	**1,691.7469**	**0.0743**	**0.0000**	**1,693.6047**

3.24 X Phase 3 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0164	0.0992	0.2020	3.9000e-004		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	32.8576	32.8576	1.3200e-003	0.0000	32.8906
Total	**0.0164**	**0.0992**	**0.2020**	**3.9000e-004**		**1.8500e-003**	**1.8500e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**32.8576**	**32.8576**	**1.3200e-003**	**0.0000**	**32.8906**

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	6.3100e-003	0.2330	0.0718	8.3000e-004	0.0222	2.6000e-004	0.0225	6.4200e-003	2.4000e-004	6.6600e-003	0.0000	81.5866	81.5866	5.4000e-003	0.0000	81.7217
Worker	0.0335	0.0190	0.2157	8.6000e-004	0.1224	5.9000e-004	0.1230	0.0325	5.4000e-004	0.0331	0.0000	78.1671	78.1671	1.5900e-003	0.0000	78.2069
Total	**0.0398**	**0.2520**	**0.2875**	**1.6900e-003**	**0.1446**	**8.5000e-004**	**0.1455**	**0.0389**	**7.8000e-004**	**0.0397**	**0.0000**	**159.7537**	**159.7537**	**6.9900e-003**	**0.0000**	**159.9286**

3.24 X Phase 3 Building Construction - 2030

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	0.0164	0.0992	0.2020	3.9000e-004		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	32.8576	32.8576	1.3200e-003	0.0000	32.8905
Total	**0.0164**	**0.0992**	**0.2020**	**3.9000e-004**		**1.8500e-003**	**1.8500e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**32.8576**	**32.8576**	**1.3200e-003**	**0.0000**	**32.8905**

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	6.3100e-003	0.2330	0.0718	8.3000e-004	0.0222	2.6000e-004	0.0225	6.4200e-003	2.4000e-004	6.6600e-003	0.0000	81.5866	81.5866	5.4000e-003	0.0000	81.7217
Worker	0.0335	0.0190	0.2157	8.6000e-004	0.1224	5.9000e-004	0.1230	0.0325	5.4000e-004	0.0331	0.0000	78.1671	78.1671	1.5900e-003	0.0000	78.2069
Total	**0.0398**	**0.2520**	**0.2875**	**1.6900e-003**	**0.1446**	**8.5000e-004**	**0.1455**	**0.0389**	**7.8000e-004**	**0.0397**	**0.0000**	**159.7537**	**159.7537**	**6.9900e-003**	**0.0000**	**159.9286**

3.25 Y Phase 3 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	23.0747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1094	0.1728	2.8000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	24.3836	24.3836	1.3300e-003	0.0000	24.4168
Total	**23.0911**	**0.1094**	**0.1728**	**2.8000e-004**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**24.3836**	**24.3836**	**1.3300e-003**	**0.0000**	**24.4168**

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	0.0545	0.0310	0.3476	1.3500e-003	0.1869	9.7000e-004	0.1878	0.0497	8.9000e-004	0.0505	0.0000	122.3933	122.3933	2.5700e-003	0.0000	122.4577
Total	**0.0545**	**0.0310**	**0.3476**	**1.3500e-003**	**0.1869**	**9.7000e-004**	**0.1878**	**0.0497**	**8.9000e-004**	**0.0505**	**0.0000**	**122.3933**	**122.3933**	**2.5700e-003**	**0.0000**	**122.4577**

3.25 Y Phase 3 Architectural Coating - 2029

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	23.0747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1094	0.1728	2.8000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	24.3835	24.3835	1.3300e-003	0.0000	24.4168
Total	**23.0911**	**0.1094**	**0.1728**	**2.8000e-004**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**24.3835**	**24.3835**	**1.3300e-003**	**0.0000**	**24.4168**

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	0.0545	0.0310	0.3476	1.3500e-003	0.1869	9.7000e-004	0.1878	0.0497	8.9000e-004	0.0505	0.0000	122.3933	122.3933	2.5700e-003	0.0000	122.4577
Total	**0.0545**	**0.0310**	**0.3476**	**1.3500e-003**	**0.1869**	**9.7000e-004**	**0.1878**	**0.0497**	**8.9000e-004**	**0.0505**	**0.0000**	**122.3933**	**122.3933**	**2.5700e-003**	**0.0000**	**122.4577**

3.25 Y Phase 3 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0203					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0107	0.0225	4.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.1916	3.1916	1.3000e-004	0.0000	3.1948
Total	**3.0219**	**0.0107**	**0.0225**	**4.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.3000e-004**	**0.0000**	**3.1948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6900e-003	3.8000e-003	0.0431	1.7000e-004	0.0245	1.2000e-004	0.0246	6.5000e-003	1.1000e-004	6.6100e-003	0.0000	15.6206	15.6206	3.2000e-004	0.0000	15.6286
Total	**6.6900e-003**	**3.8000e-003**	**0.0431**	**1.7000e-004**	**0.0245**	**1.2000e-004**	**0.0246**	**6.5000e-003**	**1.1000e-004**	**6.6100e-003**	**0.0000**	**15.6206**	**15.6206**	**3.2000e-004**	**0.0000**	**15.6286**

3.25 Y Phase 3 Architectural Coating - 2030

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	3.0203					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0107	0.0225	4.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.1916	3.1916	1.3000e-004	0.0000	3.1948
Total	**3.0219**	**0.0107**	**0.0225**	**4.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.3000e-004**	**0.0000**	**3.1948**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6900e-003	3.8000e-003	0.0431	1.7000e-004	0.0245	1.2000e-004	0.0246	6.5000e-003	1.1000e-004	6.6100e-003	0.0000	15.6206	15.6206	3.2000e-004	0.0000	15.6286
Total	**6.6900e-003**	**3.8000e-003**	**0.0431**	**1.7000e-004**	**0.0245**	**1.2000e-004**	**0.0246**	**6.5000e-003**	**1.1000e-004**	**6.6100e-003**	**0.0000**	**15.6206**	**15.6206**	**3.2000e-004**	**0.0000**	**15.6286**

3.26 V Phase 3 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2819	0.0000	0.2819	0.1169	0.0000	0.1169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	0.9081	0.8558	2.0200e-003		0.0368	0.0368		0.0338	0.0338	0.0000	177.1452	177.1452	0.0573	0.0000	178.5775
Total	**0.0943**	**0.9081**	**0.8558**	**2.0200e-003**	**0.2819**	**0.0368**	**0.3186**	**0.1169**	**0.0338**	**0.1507**	**0.0000**	**177.1452**	**177.1452**	**0.0573**	**0.0000**	**178.5775**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	8.7000e-004	9.7000e-003	4.0000e-005	5.2100e-003	3.0000e-005	5.2400e-003	1.3900e-003	2.0000e-005	1.4100e-003	0.0000	3.4141	3.4141	7.0000e-005	0.0000	3.4159
Total	**1.5200e-003**	**8.7000e-004**	**9.7000e-003**	**4.0000e-005**	**5.2100e-003**	**3.0000e-005**	**5.2400e-003**	**1.3900e-003**	**2.0000e-005**	**1.4100e-003**	**0.0000**	**3.4141**	**3.4141**	**7.0000e-005**	**0.0000**	**3.4159**

3.26 V Phase 3 Grading - 2029

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					0.2819	0.0000	0.2819	0.1169	0.0000	0.1169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	0.9081	0.8558	2.0200e-003		0.0368	0.0368		0.0338	0.0338	0.0000	177.1450	177.1450	0.0573	0.0000	178.5773
Total	**0.0943**	**0.9081**	**0.8558**	**2.0200e-003**	**0.2819**	**0.0368**	**0.3186**	**0.1169**	**0.0338**	**0.1507**	**0.0000**	**177.1450**	**177.1450**	**0.0573**	**0.0000**	**178.5773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	8.7000e-004	9.7000e-003	4.0000e-005	5.2100e-003	3.0000e-005	5.2400e-003	1.3900e-003	2.0000e-005	1.4100e-003	0.0000	3.4141	3.4141	7.0000e-005	0.0000	3.4159
Total	**1.5200e-003**	**8.7000e-004**	**9.7000e-003**	**4.0000e-005**	**5.2100e-003**	**3.0000e-005**	**5.2400e-003**	**1.3900e-003**	**2.0000e-005**	**1.4100e-003**	**0.0000**	**3.4141**	**3.4141**	**7.0000e-005**	**0.0000**	**3.4159**

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	4.7100	20.5701	65.0632	0.2826	32.2459	0.1793	32.4252	8.6320	0.1666	8.7986	0.0000	26,251.7988	26,251.7988	1.2185	0.0000	26,282.2610
Unmitigated	4.7100	20.5701	65.0632	0.2826	32.2459	0.1793	32.4252	8.6320	0.1666	8.7986	0.0000	26,251.7988	26,251.7988	1.2185	0.0000	26,282.2610

4.2 Trip Summary Information

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	119.00	119.00	119.00	433,593	433,593
Condo/Townhouse	2,250.00	2,250.00	2250.00	10,647,000	10,647,000
Congregate Care (Assisted Living)	500.00	500.00	500.00	2,366,000	2,366,000
Elementary School	908.80	908.80	908.80	3,311,340	3,311,340
Hotel	450.00	450.00	450.00	1,639,638	1,639,638
Junior High School	184.80	184.80	184.80	673,345	673,345
Office Park	399.00	399.00	399.00	1,453,812	1,453,812
Place of Worship	300.03	300.03	300.03	1,093,194	1,093,194
Retirement Community	1,872.00	1,872.00	1872.00	8,858,304	8,858,304
Single Family Housing	9,030.00	9,030.00	9030.00	42,762,829	42,762,829
Strip Mall	2,460.00	2,460.00	2460.00	8,963,354	8,963,354
User Defined Industrial	14.40	14.40	14.40	52,468	52,468
User Defined Industrial	3.60	3.60	3.60	13,117	13,117
User Defined Recreational	915.20	915.20	915.20	3,334,659	3,334,659
Total	19,406.83	19,406.83	19,406.83	85,602,655	85,602,655

4.3 Trip Type Information

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

	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
City Park	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
Condo/Townhouse	13.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Congregate Care (Assisted	13.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Elementary School	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
Hotel	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
Junior High School	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
Place of Worship	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
Retirement Community	13.00	0.00	0.00	100.00	0.00	0.00	100	0	0
Single Family Housing	13.01	0.00	0.00	100.00	0.00	0.00	100	0	0
Strip Mall	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
User Defined Industrial	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
User Defined Industrial	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0
User Defined Recreational	0.00	10.01	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	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
Condo/Townhouse	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
Congregate Care (Assisted Living)	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
Elementary School	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
Hotel	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
Junior High School	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
Office Park	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
Place of Worship	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
Retirement Community	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
Single Family Housing	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
Strip Mall	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
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
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
User Defined Recreational	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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2,613.3999	2,613.3999	0.1039	0.0195	2,621.8015
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,613.3999	2,613.3999	0.1039	0.0195	2,621.8015
NaturalGas Mitigated	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	1,988.4457	1,988.4457	0.0381	0.0365	2,000.2620
NaturalGas Unmitigated	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	1,988.4457	1,988.4457	0.0381	0.0365	2,000.2620

5.2 Energy by Land Use - NaturalGas

Unmitigated

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

	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					
City Park	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
Condo/Townhouse	5.03364e+006	0.0271	0.2319	0.0987	1.4800e-003		0.0188	0.0188		0.0188	0.0188	0.0000	268.6144	268.6144	5.1500e-003	4.9200e-003	270.2106
Congregate Care (Assisted Living)	1.77359e+006	9.5600e-003	0.0817	0.0348	5.2000e-004		6.6100e-003	6.6100e-003		6.6100e-003	6.6100e-003	0.0000	94.6453	94.6453	1.8100e-003	1.7400e-003	95.2077
Elementary School	282071	1.5200e-003	0.0138	0.0116	8.0000e-005		1.0500e-003	1.0500e-003		1.0500e-003	1.0500e-003	0.0000	15.0524	15.0524	2.9000e-004	2.8000e-004	15.1418
Hotel	4.25509e+006	0.0229	0.2086	0.1752	1.2500e-003		0.0159	0.0159		0.0159	0.0159	0.0000	227.0676	227.0676	4.3500e-003	4.1600e-003	228.4169
Junior High School	92177.8	5.0000e-004	4.5200e-003	3.8000e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9190	4.9190	9.0000e-005	9.0000e-005	4.9482
Office Park	925395	4.9900e-003	0.0454	0.0381	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.3826	49.3826	9.5000e-004	9.1000e-004	49.6761
Place of Worship	124013	6.7000e-004	6.0800e-003	5.1100e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6178	6.6178	1.3000e-004	1.2000e-004	6.6571
Retirement Community	7.28034e+006	0.0393	0.3355	0.1428	2.1400e-003		0.0271	0.0271		0.0271	0.0271	0.0000	388.5069	388.5069	7.4500e-003	7.1200e-003	390.8156
Single Family Housing	1.67647e+007	0.0904	0.7725	0.3287	4.9300e-003		0.0625	0.0625		0.0625	0.0625	0.0000	894.6283	894.6283	0.0172	0.0164	899.9446
Strip Mall	137760	7.4000e-004	6.7500e-003	5.6700e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3514	7.3514	1.4000e-004	1.3000e-004	7.3951
User Defined Industrial	118657	6.4000e-004	5.8200e-003	4.8900e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3320	6.3320	1.2000e-004	1.2000e-004	6.3696
User Defined Industrial	474630	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3281	25.3281	4.9000e-004	4.6000e-004	25.4786
User Defined Recreational	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		**0.2009**	**1.7358**	**0.8689**	**0.0110**		**0.1388**	**0.1388**		**0.1388**	**0.1388**	**0.0000**	**1,988.4457**	**1,988.4457**	**0.0381**	**0.0365**	**2,000.2620**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	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
Condo/Townhouse	5.03364e+006	0.0271	0.2319	0.0987	1.4800e-003		0.0188	0.0188		0.0188	0.0188	0.0000	268.6144	268.6144	5.1500e-003	4.9200e-003	270.2106
Congregate Care (Assisted Living)	1.77359e+006	9.5600e-003	0.0817	0.0348	5.2000e-004		6.6100e-003	6.6100e-003		6.6100e-003	6.6100e-003	0.0000	94.6453	94.6453	1.8100e-003	1.7400e-003	95.2077
Elementary School	282071	1.5200e-003	0.0138	0.0116	8.0000e-005		1.0500e-003	1.0500e-003		1.0500e-003	1.0500e-003	0.0000	15.0524	15.0524	2.9000e-004	2.8000e-004	15.1418
Hotel	4.25509e+006	0.0229	0.2086	0.1752	1.2500e-003		0.0159	0.0159		0.0159	0.0159	0.0000	227.0676	227.0676	4.3500e-003	4.1600e-003	228.4169
Junior High School	92177.8	5.0000e-004	4.5200e-003	3.8000e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9190	4.9190	9.0000e-005	9.0000e-005	4.9482
Office Park	925395	4.9900e-003	0.0454	0.0381	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.3826	49.3826	9.5000e-004	9.1000e-004	49.6761
Place of Worship	124013	6.7000e-004	6.0800e-003	5.1100e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6178	6.6178	1.3000e-004	1.2000e-004	6.6571
Retirement Community	7.28034e+006	0.0393	0.3355	0.1428	2.1400e-003		0.0271	0.0271		0.0271	0.0271	0.0000	388.5069	388.5069	7.4500e-003	7.1200e-003	390.8156
Single Family Housing	1.67647e+007	0.0904	0.7725	0.3287	4.9300e-003		0.0625	0.0625		0.0625	0.0625	0.0000	894.6283	894.6283	0.0172	0.0164	899.9446
Strip Mall	137760	7.4000e-004	6.7500e-003	5.6700e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3514	7.3514	1.4000e-004	1.3000e-004	7.3951
User Defined Industrial	118657	6.4000e-004	5.8200e-003	4.8900e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3320	6.3320	1.2000e-004	1.2000e-004	6.3696
User Defined Industrial	474630	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3281	25.3281	4.9000e-004	4.6000e-004	25.4786
User Defined Recreational	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		**0.2009**	**1.7358**	**0.8689**	**0.0110**		**0.1388**	**0.1388**		**0.1388**	**0.1388**	**0.0000**	**1,988.4457**	**1,988.4457**	**0.0381**	**0.0365**	**2,000.2620**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.83016e+006	334.1419	0.0133	2.4900e-003	335.2161
Congregate Care (Assisted Living)	850616	155.3016	6.1700e-003	1.1600e-003	155.8009
Elementary School	252154	46.0372	1.8300e-003	3.4000e-004	46.1852
Hotel	946704	172.8449	6.8700e-003	1.2900e-003	173.4006
Junior High School	82401.3	15.0445	6.0000e-004	1.1000e-004	15.0928
Office Park	451725	82.4739	3.2800e-003	6.1000e-004	82.7390
Place of Worship	89773	16.3904	6.5000e-004	1.2000e-004	16.4430
Retirement Community	2.71796e+006	496.2322	0.0197	3.7000e-003	497.8275
Single Family Housing	5.6922e+006	1,039.2553	0.0413	7.7500e-003	1,042.5964
Strip Mall	782280	142.8251	5.6800e-003	1.0600e-003	143.2843
User Defined Industrial	123623	22.5706	9.0000e-004	1.7000e-004	22.6431
User Defined Industrial	494493	90.2823	3.5900e-003	6.7000e-004	90.5726
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**2,613.3999**	**0.1039**	**0.0195**	**2,621.8015**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.83016e+006	334.1419	0.0133	2.4900e-003	335.2161
Congregate Care (Assisted Living)	850616	155.3016	6.1700e-003	1.1600e-003	155.8009
Elementary School	252154	46.0372	1.8300e-003	3.4000e-004	46.1852
Hotel	946704	172.8449	6.8700e-003	1.2900e-003	173.4006
Junior High School	82401.3	15.0445	6.0000e-004	1.1000e-004	15.0928
Office Park	451725	82.4739	3.2800e-003	6.1000e-004	82.7390
Place of Worship	89773	16.3904	6.5000e-004	1.2000e-004	16.4430
Retirement Community	2.71796e+006	496.2322	0.0197	3.7000e-003	497.8275
Single Family Housing	5.6922e+006	1,039.2553	0.0413	7.7500e-003	1,042.5964
Strip Mall	782280	142.8251	5.6800e-003	1.0600e-003	143.2843
User Defined Industrial	123623	22.5706	9.0000e-004	1.7000e-004	22.6431
User Defined Industrial	494493	90.2823	3.5900e-003	6.7000e-004	90.5726
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**2,613.3999**	**0.1039**	**0.0195**	**2,621.8015**

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	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Unmitigated	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823

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	2.6095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.2298					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	0.4318	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Total	**14.2711**	**0.1662**	**14.4195**	**7.6000e-004**		**0.0802**	**0.0802**		**0.0802**	**0.0802**	**0.0000**	**23.6190**	**23.6190**	**0.0225**	**0.0000**	**24.1823**

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	2.6095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.2298					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	0.4318	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Total	**14.2711**	**0.1662**	**14.4195**	**7.6000e-004**		**0.0802**	**0.0802**		**0.0802**	**0.0802**	**0.0000**	**23.6190**	**23.6190**	**0.0225**	**0.0000**	**24.1823**

7.0 Water Detail

7.1 Mitigation Measures Water

Lilac Hills Ranch - Buildout 2030 - without design features - San Diego County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	886.9417	3.1345	0.0796	989.0224
Unmitigated	886.9417	3.1345	0.0796	989.0224

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 71.2561	144.5368	5.7500e-003	1.0800e-003	145.0014
Condo/Townhouse	6.50544 / 38.7053	96.0397	0.2157	5.7100e-003	103.1329
Congregate Care (Assisted Living)	3.46957 / 20.6428	51.2212	0.1151	3.0400e-003	55.0042
Elementary School	0.36663 / 8.89726	19.0352	0.0127	4.2000e-004	19.4788
Hotel	0.337706 / 0.35412	1.6283	0.0111	2.7000e-004	1.9857
Junior High School	0.0852027 / 2.06767	4.4237	2.9500e-003	1.0000e-004	4.5268
Office Park	1.34871 / 7.80125	19.4584	0.0447	1.1800e-003	20.9275
Place of Worship	0.0891411 / 1.31582	2.9092	3.0200e-003	9.0000e-005	3.0115
Retirement Community	8.11879 / 48.3042	119.8575	0.2692	7.1200e-003	128.7098
Single Family Housing	15.6651 / 93.2023	231.2636	0.5194	0.0137	248.3440
Strip Mall	1.21293 / 7.01587	17.4994	0.0402	1.0600e-003	18.8206
User Defined Industrial	23.602 / 11.2996	86.5175	0.7722	0.0188	111.4098
User Defined Recreational	34.3474 / 0	92.5514	1.1225	0.0270	128.6694
Total		**886.9417**	**3.1345**	**0.0796**	**989.0224**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 71.2561	144.5368	5.7500e-003	1.0800e-003	145.0014
Condo/Townhouse	6.50544 / 38.7053	96.0397	0.2157	5.7100e-003	103.1329
Congregate Care (Assisted Living)	3.46957 / 20.6428	51.2212	0.1151	3.0400e-003	55.0042
Elementary School	0.36663 / 8.89726	19.0352	0.0127	4.2000e-004	19.4788
Hotel	0.337706 / 0.35412	1.6283	0.0111	2.7000e-004	1.9857
Junior High School	0.0852027 / 2.06767	4.4237	2.9500e-003	1.0000e-004	4.5268
Office Park	1.34871 / 7.80125	19.4584	0.0447	1.1800e-003	20.9275
Place of Worship	0.0891411 / 1.31582	2.9092	3.0200e-003	9.0000e-005	3.0115
Retirement Community	8.11879 / 48.3042	119.8575	0.2692	7.1200e-003	128.7098
Single Family Housing	15.6651 / 93.2023	231.2636	0.5194	0.0137	248.3440
Strip Mall	1.21293 / 7.01587	17.4994	0.0402	1.0600e-003	18.8206
User Defined Industrial	23.602 / 11.2996	86.5175	0.7722	0.0188	111.4098
User Defined Recreational	34.3474 / 0	92.5514	1.1225	0.0270	128.6694
Total		**886.9417**	**3.1345**	**0.0796**	**989.0224**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	522.4318	30.8748	0.0000	1,294.3026
Unmitigated	522.4318	30.8748	0.0000	1,294.3026

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.05	0.4161	0.0246	0.0000	1.0310
Condo/Townhouse	172.5	35.0159	2.0694	0.0000	86.7505
Congregate Care (Assisted Living)	182.5	37.0459	2.1894	0.0000	91.7795
Elementary School	103.66	21.0420	1.2436	0.0000	52.1308
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Junior High School	24.09	4.8901	0.2890	0.0000	12.1149
Office Park	26.51	5.3813	0.3180	0.0000	13.3319
Place of Worship	60.99	12.3804	0.7317	0.0000	30.6720
Retirement Community	215.28	43.6999	2.5826	0.0000	108.2646
Single Family Housing	1059.03	214.9735	12.7046	0.0000	532.5878
Strip Mall	64.58	13.1092	0.7747	0.0000	32.4774
User Defined Industrial	508.1	103.1397	6.0954	0.0000	255.5243
User Defined Recreational	127	25.7799	1.5236	0.0000	63.8685
Total		**522.4317**	**30.8748**	**0.0000**	**1,294.3026**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.05	0.4161	0.0246	0.0000	1.0310
Condo/Townhouse	172.5	35.0159	2.0694	0.0000	86.7505
Congregate Care (Assisted Living)	182.5	37.0459	2.1894	0.0000	91.7795
Elementary School	103.66	21.0420	1.2436	0.0000	52.1308
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Junior High School	24.09	4.8901	0.2890	0.0000	12.1149
Office Park	26.51	5.3813	0.3180	0.0000	13.3319
Place of Worship	60.99	12.3804	0.7317	0.0000	30.6720
Retirement Community	215.28	43.6999	2.5826	0.0000	108.2646
Single Family Housing	1059.03	214.9735	12.7046	0.0000	532.5878
Strip Mall	64.58	13.1092	0.7747	0.0000	32.4774
User Defined Industrial	508.1	103.1397	6.0954	0.0000	255.5243
User Defined Recreational	127	25.7799	1.5236	0.0000	63.8685
Total		**522.4317**	**30.8748**	**0.0000**	**1,294.3026**

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	-5,991.1000	0.0000	0.0000	-5,991.1000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	113.7 / 21.2	-573.5000	0.0000	0.0000	-573.5000
Cropland	125.6 / 113.7	-73.7800	0.0000	0.0000	-73.7800
Cropland	147.3 / 125.6	-134.5400	0.0000	0.0000	-134.5400
Cropland	161.8 / 147.3	-89.9000	0.0000	0.0000	-89.9000
Cropland	170.1 / 161.8	-51.4600	0.0000	0.0000	-51.4600
Scrub	337 / 279.3	-825.1100	0.0000	0.0000	-825.1100
Scrub	436.7 / 337	-1,425.7100	0.0000	0.0000	-1,425.7100
Scrub	85.6 / 82.3	-47.1900	0.0000	0.0000	-47.1900
Scrub	126.6 / 85.6	-586.3000	0.0000	0.0000	-586.3000
Scrub	279.3 / 126.6	-2,183.6100	0.0000	0.0000	-2,183.6100
Total		**-5,991.1000**	**0.0000**	**0.0000**	**-5,991.1000**

ATTACHMENT B:

CALEEMOD – Annual

Mitigated Emissions (2030)

Lilac Hills Ranch - Buildout 2030 - With Design Features

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	28.50	1000sqft	0.65	28,500.00	66
Elementary School	568.00	Student	6.00	47,486.71	29
Junior High School	132.00	Student	6.00	15,518.14	9
Place of Worship	10.70	1000sqft	10.70	10,700.00	0
User Defined Industrial	2.40	User Defined Unit	2.40	104,544.00	20
User Defined Industrial	0.60	User Defined Unit	0.60	26,136.00	5
City Park	23.80	Acre	23.80	0.00	0
Hotel	50.00	Room	1.67	72,600.00	0
User Defined Recreational	40.00	User Defined Unit	2.00	0.00	0
Condo/Townhouse	375.00	Dwelling Unit	23.20	375,000.00	1073
Congregate Care (Assisted Living)	200.00	Dwelling Unit	6.50	40,000.00	572
Retirement Community	468.00	Dwelling Unit	75.90	468,000.00	1338
Single Family Housing	903.00	Dwelling Unit	165.40	1,625,400.00	2583
Strip Mall	61.50	1000sqft	1.41	61,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity	402.51	**CH4 Intensity**	0.016	**N2O Intensity**	0.003

(lb/MWhr) **(lb/MWhr)** **(lb/MWhr)**

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2030 factors 402.51, .0162, .0034

Land Use - Proposed Land Use

Construction Phase - Construction from approximatly April 2020 to Feb 2030

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Grading - 326.23

Architectural Coating - Rule 67 Paint

Vehicle Trips - Trip distances were adjusted for TDM

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - Per Consol Report Any heating with NG via Hearth will cancel heat needed from HVAC.

Area Coating - Rule 67 Paints will be utilized

Energy Use - MF Energy Usage provided by Consol (8-Plex Multi-Family); SF Residential Usage provided by Consol (3,342 SF); Electric use for education and recreation based on general industrial/worship uses LED (65% Reduction) CC,ES,H,JHS,OP,POW,SM

Water And Wastewater - Based on WTR Report and Appendix D Table 9.1 Water Consumption Rates

Land Use Change -

Sequestration - 35,146 trees will be planted after land use change… no credit taken in report

Water Mitigation -

Waste Mitigation -

Fleet Mix -

Lilac Hills Ranch - Buildout 2030 - With Design Features - San Diego County, Annual

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
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tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
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tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
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tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
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tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150

tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
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tblConstructionPhase	NumDays	440.00	130.00
tblConstructionPhase	NumDays	440.00	130.00
tblConstructionPhase	NumDays	440.00	216.00
tblConstructionPhase	NumDays	440.00	132.00
tblConstructionPhase	NumDays	6,200.00	194.00
tblConstructionPhase	NumDays	6,200.00	194.00
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tblConstructionPhase	NumDays	440.00	85.00
tblConstructionPhase	NumDays	440.00	62.00
tblConstructionPhase	NumDays	440.00	64.00
tblConstructionPhase	NumDays	240.00	63.00
tblConstructionPhase	NumDays	240.00	86.00
tblConstructionPhase	NumDays	240.00	66.00
tblConstructionPhase	NumDays	240.00	87.00

tblConstructionPhase	NumDays	240.00	108.00
tblEnergyUse	LightingElect	1,001.10	423.29
tblEnergyUse	LightingElect	741.44	259.50
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tblEnergyUse	LightingElect	4.61	1.61
tblEnergyUse	LightingElect	2.61	0.91
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tblEnergyUse	LightingElect	2.91	1.02
tblEnergyUse	LightingElect	1,001.10	617.40
tblEnergyUse	LightingElect	1,608.84	756.50
tblEnergyUse	LightingElect	6.39	2.24
tblEnergyUse	LightingElect	0.00	3.25
tblEnergyUse	LightingElect	0.00	3.25
tblEnergyUse	NT24E	4,109.59	3,639.18
tblEnergyUse	NT24E	3,418.36	4,259.80
tblEnergyUse	NT24E	6,680.41	4,572.85
tblEnergyUse	NT24NG	4,180.00	1,389.67
tblEnergyUse	NT24NG	4,180.00	1,519.64
tblEnergyUse	NT24NG	4,180.00	1,584.62
tblEnergyUse	T24E	257.33	817.95
tblEnergyUse	T24E	246.93	234.58
tblEnergyUse	T24E	1.60	1.52
tblEnergyUse	T24E	5.01	4.76
tblEnergyUse	T24E	1.60	1.52
tblEnergyUse	T24E	6.14	5.83
tblEnergyUse	T24E	1.27	1.21
tblEnergyUse	T24E	307.62	930.40

tblEnergyUse	T24E	374.93	974.30
tblEnergyUse	T24E	3.34	3.17
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tblEnergyUse	T24E	0.00	1.48
tblEnergyUse	T24NG	12,915.01	12,033.38
tblEnergyUse	T24NG	10,166.66	14,036.65
tblEnergyUse	T24NG	24,312.55	16,980.94
tblEnergyUse	T24NG	0.00	4.54
tblEnergyUse	T24NG	0.00	4.54
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
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tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	NumberGas	206.25	0.00
tblFireplaces	NumberGas	110.00	0.00
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tblFireplaces	NumberNoFireplace	37.50	0.00
tblFireplaces	NumberNoFireplace	20.00	0.00
tblFireplaces	NumberNoFireplace	46.80	0.00
tblFireplaces	NumberNoFireplace	90.30	0.00
tblFireplaces	NumberWood	131.25	0.00
tblFireplaces	NumberWood	70.00	0.00

tblFireplaces	NumberWood	163.80	0.00
tblFireplaces	NumberWood	316.05	0.00
tblFleetMix	FleetMixLandUseSubType	Office Park	City Park
tblFleetMix	FleetMixLandUseSubType	Elementary School	Condo/Townhouse
tblFleetMix	FleetMixLandUseSubType	Junior High School	Congregate Care (Assisted Living)
tblFleetMix	FleetMixLandUseSubType	Place of Worship	Elementary School
tblFleetMix	FleetMixLandUseSubType	User Defined Industrial	Hotel
tblFleetMix	FleetMixLandUseSubType	User Defined Industrial	Junior High School
tblFleetMix	FleetMixLandUseSubType	City Park	Office Park
tblFleetMix	FleetMixLandUseSubType	Hotel	Place of Worship
tblFleetMix	FleetMixLandUseSubType	User Defined Recreational	Retirement Community
tblFleetMix	FleetMixLandUseSubType	Condo/Townhouse	Single Family Housing
tblFleetMix	FleetMixLandUseSubType	Congregate Care (Assisted Living)	Strip Mall
tblFleetMix	FleetMixLandUseSubType	Retirement Community	User Defined Industrial
tblFleetMix	FleetMixLandUseSubType	Single Family Housing	User Defined Industrial
tblFleetMix	FleetMixLandUseSubType	Strip Mall	User Defined Recreational
tblGrading	AcresOfGrading	325.00	322.50
tblGrading	AcresOfGrading	330.00	326.23
tblGrading	AcresOfGrading	322.50	325.00
tblGrading	AcresOfGrading	0.00	326.23
tblGrading	AcresOfGrading	0.00	322.50
tblGrading	AcresOfGrading	0.00	330.00
tblGrading	AcresOfGrading	0.00	325.00
tblLandUse	BuildingSpaceSquareFeet	0.00	26,136.00
tblLandUse	BuildingSpaceSquareFeet	0.00	104,544.00
tblLandUse	BuildingSpaceSquareFeet	200,000.00	40,000.00
tblLandUse	GreenSpaceSquareFeet	1,036,728.00	0.00

tblLandUse	LandUseSquareFeet	0.00	26,136.00
tblLandUse	LandUseSquareFeet	0.00	104,544.00
tblLandUse	LandUseSquareFeet	1,036,728.00	0.00
tblLandUse	LandUseSquareFeet	200,000.00	40,000.00
tblLandUse	LotAcreage	1.09	6.00
tblLandUse	LotAcreage	0.36	6.00
tblLandUse	LotAcreage	0.25	10.70
tblLandUse	LotAcreage	0.00	0.60
tblLandUse	LotAcreage	0.00	2.40
tblLandUse	LotAcreage	0.00	2.00
tblLandUse	LotAcreage	23.44	23.20
tblLandUse	LotAcreage	12.50	6.50
tblLandUse	LotAcreage	93.60	75.90
tblLandUse	LotAcreage	293.18	165.40
tblLandUse	Population	0.00	66.00
tblLandUse	Population	0.00	29.00
tblLandUse	Population	0.00	9.00
tblLandUse	Population	0.00	5.00
tblLandUse	Population	0.00	20.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	402.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2018	2030
tblSequestration	NumberOfNewTrees	0.00	35,146.00
tblSolidWaste	SolidWasteGenerationRate	0.00	508.10
tblSolidWaste	SolidWasteGenerationRate	0.00	127.00
tblVehicleTrips	CC_TL	7.30	9.22

tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	30.00	100.00
tblVehicleTrips	CC_TTP	61.60	100.00
tblVehicleTrips	CC_TTP	22.20	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	95.00	100.00
tblVehicleTrips	CC_TTP	64.40	100.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00

tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	65.00	0.00
tblVehicleTrips	CW_TTP	19.40	0.00
tblVehicleTrips	CW_TTP	72.80	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.60	0.00
tblVehicleTrips	DV_TP	28.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	25.00	0.00
tblVehicleTrips	DV_TP	38.00	0.00
tblVehicleTrips	DV_TP	25.00	0.00

tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	25.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	40.00	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TL	7.50	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HO_TTP	39.60	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TL	7.30	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HS_TTP	18.80	0.00
tblVehicleTrips	HW_TL	10.80	11.94
tblVehicleTrips	HW_TL	10.80	11.92
tblVehicleTrips	HW_TL	10.80	11.93
tblVehicleTrips	HW_TL	10.80	11.94
tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	HW_TTP	41.60	100.00

tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	HW_TTP	41.60	100.00
tblVehicleTrips	PB_TP	6.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	15.00	0.00
tblVehicleTrips	PR_TP	66.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	63.00	100.00
tblVehicleTrips	PR_TP	58.00	100.00
tblVehicleTrips	PR_TP	63.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	64.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	45.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	ST_TR	22.75	5.00

tblVehicleTrips	ST_TR	5.67	6.00
tblVehicleTrips	ST_TR	2.20	2.50
tblVehicleTrips	ST_TR	0.00	1.60
tblVehicleTrips	ST_TR	8.19	9.00
tblVehicleTrips	ST_TR	0.00	1.40
tblVehicleTrips	ST_TR	1.64	14.00
tblVehicleTrips	ST_TR	10.37	28.04
tblVehicleTrips	ST_TR	2.03	4.00
tblVehicleTrips	ST_TR	9.91	10.00
tblVehicleTrips	ST_TR	42.04	40.00
tblVehicleTrips	ST_TR	0.00	6.00
tblVehicleTrips	ST_TR	0.00	22.88
tblVehicleTrips	SU_TR	16.74	5.00
tblVehicleTrips	SU_TR	4.84	6.00
tblVehicleTrips	SU_TR	2.44	2.50
tblVehicleTrips	SU_TR	0.00	1.60
tblVehicleTrips	SU_TR	5.95	9.00
tblVehicleTrips	SU_TR	0.00	1.40
tblVehicleTrips	SU_TR	0.76	14.00
tblVehicleTrips	SU_TR	36.63	28.04
tblVehicleTrips	SU_TR	1.95	4.00
tblVehicleTrips	SU_TR	8.62	10.00
tblVehicleTrips	SU_TR	20.43	40.00
tblVehicleTrips	SU_TR	0.00	6.00
tblVehicleTrips	SU_TR	0.00	22.88
tblVehicleTrips	WD_TR	1.89	5.00
tblVehicleTrips	WD_TR	5.81	6.00

tblVehicleTrips	WD_TR	2.74	2.50
tblVehicleTrips	WD_TR	1.29	1.60
tblVehicleTrips	WD_TR	8.17	9.00
tblVehicleTrips	WD_TR	1.62	1.40
tblVehicleTrips	WD_TR	11.42	14.00
tblVehicleTrips	WD_TR	9.11	28.04
tblVehicleTrips	WD_TR	2.40	4.00
tblVehicleTrips	WD_TR	9.52	10.00
tblVehicleTrips	WD_TR	44.32	40.00
tblVehicleTrips	WD_TR	0.00	6.00
tblVehicleTrips	WD_TR	0.00	22.88
tblWater	IndoorWaterUseRate	24,432,759.61	6,505,437.47
tblWater	IndoorWaterUseRate	13,030,805.12	3,469,566.65
tblWater	IndoorWaterUseRate	1,376,968.32	366,629.94
tblWater	IndoorWaterUseRate	1,268,338.50	337,706.30
tblWater	IndoorWaterUseRate	319,999.68	85,202.73
tblWater	IndoorWaterUseRate	5,065,411.82	1,348,710.52
tblWater	IndoorWaterUseRate	334,791.32	89,141.14
tblWater	IndoorWaterUseRate	30,492,083.99	8,118,785.96
tblWater	IndoorWaterUseRate	58,834,085.14	15,665,093.42
tblWater	IndoorWaterUseRate	4,555,460.07	1,212,931.37
tblWater	IndoorWaterUseRate	0.00	23,602,024.85
tblWater	IndoorWaterUseRate	0.00	34,347,386.33
tblWater	OutdoorWaterUseRate	28,357,256.12	48,026,886.97
tblWater	OutdoorWaterUseRate	15,403,261.49	26,087,527.49
tblWater	OutdoorWaterUseRate	8,215,072.80	13,913,348.00
tblWater	OutdoorWaterUseRate	3,540,775.68	5,996,787.30

tblWater	OutdoorWaterUseRate	140,926.50	238,678.28
tblWater	OutdoorWaterUseRate	822,856.32	1,393,619.58
tblWater	OutdoorWaterUseRate	3,104,607.24	5,258,076.46
tblWater	OutdoorWaterUseRate	523,647.96	886,869.35
tblWater	OutdoorWaterUseRate	19,223,270.34	32,557,234.31
tblWater	OutdoorWaterUseRate	37,091,053.67	62,818,766.20
tblWater	OutdoorWaterUseRate	2,792,056.17	4,728,728.53
tblWater	OutdoorWaterUseRate	0.00	7,615,945.08
tblWoodstoves	NumberCatalytic	18.75	0.00
tblWoodstoves	NumberCatalytic	10.00	0.00
tblWoodstoves	NumberCatalytic	23.40	0.00
tblWoodstoves	NumberCatalytic	45.15	0.00
tblWoodstoves	NumberNoncatalytic	18.75	0.00
tblWoodstoves	NumberNoncatalytic	10.00	0.00
tblWoodstoves	NumberNoncatalytic	23.40	0.00
tblWoodstoves	NumberNoncatalytic	45.15	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	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	0.4291	4.6543	2.8374	5.4400e-003	1.3276	0.2128	1.5405	0.5727	0.1958	0.7685	0.0000	478.5814	478.5814	0.1508	0.0000	482.3506
2021	26.8929	5.2705	6.3489	0.0212	1.2725	0.1352	1.4077	0.3422	0.1270	0.4691	0.0000	1,955.8140	1,955.8140	0.1550	0.0000	1,959.6884
2022	0.4245	4.4142	3.1461	6.4800e-003	1.7281	0.1986	1.9267	0.7921	0.1827	0.9749	0.0000	569.6776	569.6776	0.1794	0.0000	574.1629
2023	26.7656	3.9963	5.5658	0.0198	1.2637	0.0939	1.3576	0.3398	0.0883	0.4281	0.0000	1,831.5380	1,831.5380	0.1369	0.0000	1,834.9602
2024	0.3514	3.4776	2.9456	6.3200e-003	1.5295	0.1496	1.6791	0.6842	0.1377	0.8219	0.0000	555.1937	555.1937	0.1751	0.0000	559.5715
2025	26.6840	3.5430	4.9495	0.0186	1.2509	0.0687	1.3195	0.3364	0.0646	0.4009	0.0000	1,717.2379	1,717.2379	0.1240	0.0000	1,720.3380
2026	0.3054	2.9232	2.8035	6.1600e-003	1.3539	0.1227	1.4766	0.5854	0.1129	0.6983	0.0000	541.4325	541.4325	0.1710	0.0000	545.7078
2027	26.6406	3.3720	4.4991	0.0176	1.2497	0.0638	1.3134	0.3360	0.0601	0.3961	0.0000	1,633.8429	1,633.8429	0.1142	0.0000	1,636.6985
2028	0.1991	1.7971	1.8323	4.3800e-003	0.9130	0.0712	0.9841	0.4662	0.0656	0.5318	0.0000	393.2695	393.2695	0.0860	0.0000	395.4200
2029	23.8596	5.3469	6.6149	0.0251	1.9839	0.1209	2.1047	0.5745	0.1131	0.6876	0.0000	2,321.7379	2,321.7379	0.2067	0.0000	2,326.9062
2030	3.0847	0.3657	0.5551	2.2900e-003	0.1691	3.0700e-003	0.1722	0.0454	3.0000e-003	0.0484	0.0000	211.4236	211.4236	8.7600e-003	0.0000	211.6425
Maximum	**26.8929**	**5.3469**	**6.6149**	**0.0251**	**1.9839**	**0.2128**	**2.1047**	**0.7921**	**0.1958**	**0.9749**	**0.0000**	**2,321.7379**	**2,321.7379**	**0.2067**	**0.0000**	**2,326.9062**

2.1 Overall Construction

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	0.4291	4.6543	2.8374	5.4400e-003	1.3276	0.2128	1.5405	0.5727	0.1958	0.7685	0.0000	478.5808	478.5808	0.1508	0.0000	482.3501
2021	26.8929	5.2705	6.3489	0.0212	1.2725	0.1352	1.4077	0.3422	0.1270	0.4691	0.0000	1,955.8137	1,955.8137	0.1550	0.0000	1,959.6880
2022	0.4245	4.4142	3.1461	6.4800e-003	1.7281	0.1986	1.9267	0.7921	0.1827	0.9749	0.0000	569.6770	569.6770	0.1794	0.0000	574.1622
2023	26.7656	3.9963	5.5658	0.0198	1.2637	0.0939	1.3576	0.3398	0.0883	0.4281	0.0000	1,831.5377	1,831.5377	0.1369	0.0000	1,834.9598
2024	0.3514	3.4776	2.9455	6.3200e-003	1.5295	0.1496	1.6791	0.6842	0.1377	0.8219	0.0000	555.1931	555.1931	0.1751	0.0000	559.5709
2025	26.6840	3.5430	4.9495	0.0186	1.2509	0.0687	1.3195	0.3364	0.0646	0.4009	0.0000	1,717.2375	1,717.2375	0.1240	0.0000	1,720.3377
2026	0.3054	2.9232	2.8035	6.1600e-003	1.3539	0.1227	1.4766	0.5854	0.1129	0.6983	0.0000	541.4318	541.4318	0.1710	0.0000	545.7072
2027	26.6406	3.3720	4.4991	0.0176	1.2497	0.0638	1.3134	0.3360	0.0601	0.3961	0.0000	1,633.8426	1,633.8426	0.1142	0.0000	1,636.6982
2028	0.1991	1.7971	1.8323	4.3800e-003	0.9130	0.0712	0.9841	0.4662	0.0656	0.5318	0.0000	393.2692	393.2692	0.0860	0.0000	395.4197
2029	23.8596	5.3469	6.6149	0.0251	1.9839	0.1209	2.1047	0.5745	0.1131	0.6876	0.0000	2,321.7373	2,321.7373	0.2067	0.0000	2,326.9056
2030	3.0847	0.3657	0.5551	2.2900e-003	0.1691	3.0700e-003	0.1722	0.0454	3.0000e-003	0.0484	0.0000	211.4235	211.4235	8.7600e-003	0.0000	211.6425
Maximum	**26.8929**	**5.3469**	**6.6149**	**0.0251**	**1.9839**	**0.2128**	**2.1047**	**0.7921**	**0.1958**	**0.9749**	**0.0000**	**2,321.7373**	**2,321.7373**	**0.2067**	**0.0000**	**2,326.9056**

	ROG	NOx	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**

Lilac Hills Ranch - Buildout 2030 - With Design Features - San Diego County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
11	7-1-2020	9-30-2020	1.7996	1.7996
12	10-1-2020	12-31-2020	1.8001	1.8001
13	1-1-2021	3-31-2021	0.4485	0.4485
14	4-1-2021	6-30-2021	1.7680	1.7680
15	7-1-2021	9-30-2021	14.8816	14.8816
16	10-1-2021	12-31-2021	14.9162	14.9162
18	4-1-2022	6-30-2022	0.4410	0.4410
19	7-1-2022	9-30-2022	1.3989	1.3989
20	10-1-2022	12-31-2022	1.0446	1.0446
21	1-1-2023	3-31-2023	0.6945	0.6945
22	4-1-2023	6-30-2023	5.1475	5.1475
23	7-1-2023	9-30-2023	14.6896	14.6896
24	10-1-2023	12-31-2023	9.9197	9.9197
26	4-1-2024	6-30-2024	0.7265	0.7265
27	7-1-2024	9-30-2024	1.1726	1.1726
28	10-1-2024	12-31-2024	0.6440	0.6440
29	1-1-2025	3-31-2025	0.9520	0.9520
30	4-1-2025	6-30-2025	9.9367	9.9367
31	7-1-2025	9-30-2025	14.5662	14.5662
32	10-1-2025	12-31-2025	4.7587	4.7587
34	4-1-2026	6-30-2026	0.9389	0.9389
35	7-1-2026	9-30-2026	1.0162	1.0162
36	10-1-2026	12-31-2026	0.3525	0.3525
37	1-1-2027	3-31-2027	1.2003	1.2003
38	4-1-2027	6-30-2027	13.6471	13.6471
39	7-1-2027	9-30-2027	14.5259	14.5259

40	**10-1-2027**	**12-31-2027**	0.6326	0.6326
43	**7-1-2028**	**9-30-2028**	0.1945	0.1945
44	**10-1-2028**	**12-31-2028**	0.6031	0.6031
45	**1-1-2029**	**3-31-2029**	1.2189	1.2189
46	**4-1-2029**	**6-30-2029**	9.2777	9.2777
47	**7-1-2029**	**9-30-2029**	9.5804	9.5804
48	**10-1-2029**	**12-31-2029**	9.2605	9.2605
49	**1-1-2030**	**3-31-2030**	3.4543	3.4543
		Highest	14.9162	14.9162

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	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Energy	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	4,461.0563	4,461.0563	0.1364	0.0549	4,480.8216
Mobile	4.4938	19.6070	60.5568	0.2605	29.6220	0.1659	29.7879	7.9296	0.1542	8.0838	0.0000	24,206.9442	24,206.9442	1.1309	0.0000	24,235.2154
Waste						0.0000	0.0000		0.0000	0.0000	522.4318	0.0000	522.4318	30.8748	0.0000	1,294.3026
Water						0.0000	0.0000		0.0000	0.0000	30.1863	651.1964	681.3827	3.1263	0.0781	782.8025
Total	**18.9658**	**21.5090**	**75.8452**	**0.2723**	**29.6220**	**0.3849**	**30.0069**	**7.9296**	**0.3732**	**8.3027**	**552.6180**	**29,342.8159**	**29,895.4340**	**35.2909**	**0.1329**	**30,817.3243**

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	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Energy	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	4,461.0563	4,461.0563	0.1364	0.0549	4,480.8216
Mobile	4.4938	19.6070	60.5568	0.2605	29.6220	0.1659	29.7879	7.9296	0.1542	8.0838	0.0000	24,206.9442	24,206.9442	1.1309	0.0000	24,235.2154
Waste						0.0000	0.0000		0.0000	0.0000	391.8238	0.0000	391.8238	23.1561	0.0000	970.7269
Water						0.0000	0.0000		0.0000	0.0000	30.1863	651.1964	681.3827	3.1263	0.0781	782.8025
Total	**18.9658**	**21.5090**	**75.8452**	**0.2723**	**29.6220**	**0.3849**	**30.0069**	**7.9296**	**0.3732**	**8.3027**	**422.0101**	**29,342.8159**	**29,764.8260**	**27.5722**	**0.1329**	**30,493.7487**

	ROG	NOx	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**	**23.63**	**0.00**	**0.44**	**21.87**	**0.00**	**1.05**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	24,883.3680
Vegetation Land Change	-5,991.1000
Total	**18,892.2680**

3.0 Construction Detail

Construction Phase

Lilac Hills Ranch - Buildout 2030 - With Design Features - San Diego County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	A Phase 1 Site Prep	Site Preparation	4/3/2020	6/30/2020	5	63	
2	B Phase 1 Grading	Grading	7/1/2020	12/31/2020	5	132	
3	C Phase 1 Paving	Paving	1/1/2021	3/29/2021	5	62	
4	D Phase 1 Building Construction	Building Construction	4/1/2021	12/31/2021	5	197	
5	E Phase 1 Architectural Coating	Architectural Coating	7/1/2021	12/31/2021	5	132	
6	F Phase 4 Site Prep	Site Preparation	1/2/2022	6/1/2022	5	108	
7	G Phase 4 Grading	Grading	6/2/2022	11/29/2022	5	129	
8	H Phase 4 Paving	Paving	12/2/2022	3/1/2023	5	64	
9	I Phase 4 Building Construction	Building Construction	3/3/2023	12/1/2023	5	196	
10	J Phase 4 Architectural Coating	Architectural Coating	6/5/2023	12/1/2023	5	130	
11	K Phase 2 Site Prep	Site Preparation	1/5/2024	5/4/2024	5	86	
12	L Phase 2 Grading	Grading	5/5/2024	11/2/2024	5	130	
13	M Phase 2 Paving	Paving	11/3/2024	1/31/2025	5	65	
14	N Phase 2 Building Construction	Building Construction	2/1/2025	10/30/2025	5	194	
15	O Phase 2 Architectural Coating	Architectural Coating	5/2/2025	10/30/2025	5	130	
16	P Phase 5 Site Prep	Site Preparation	1/5/2026	4/6/2026	5	66	
17	Q Phase 5 Grading	Grading	4/7/2026	10/5/2026	5	130	
18	R Phase 5 Paving	Paving	10/6/2026	1/5/2027	5	66	
19	S Phase 5 Building Construction	Building Construction	1/6/2027	10/4/2027	5	194	
20	T Phase 5 Architectural Coating	Architectural Coating	4/6/2027	10/4/2027	5	130	
21	U Phase 3 Site Prep	Site Preparation	1/5/2028	5/4/2028	5	87	
22	W Phase 3 Paving	Paving	8/5/2028	12/3/2028	5	85	
23	X Phase 3 Building Construction	Building Construction	12/4/2028	2/4/2030	5	306	
24	Y Phase 3 Architectural Coating	Architectural Coating	4/7/2029	2/4/2030	5	216	
25	V Phase 3 Grading	Grading	5/2/2029	7/31/2029	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 5,079,510; Residential Outdoor: 1,693,170; Non-Residential Indoor: 550,477; Non-Residential Outdoor: 183,492; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

G Phase 4 Grading	Graders	1	8.00	187	0.41
G Phase 4 Grading	Rubber Tired Dozers	1	8.00	247	0.40
G Phase 4 Grading	Scrapers	2	8.00	367	0.48
G Phase 4 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
H Phase 4 Paving	Pavers	2	8.00	130	0.42
H Phase 4 Paving	Paving Equipment	2	8.00	132	0.36
H Phase 4 Paving	Rollers	2	8.00	80	0.38
I Phase 4 Building Construction	Cranes	1	7.00	231	0.29
I Phase 4 Building Construction	Forklifts	3	8.00	89	0.20
I Phase 4 Building Construction	Generator Sets	1	8.00	84	0.74
I Phase 4 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
I Phase 4 Building Construction	Welders	1	8.00	46	0.45
J Phase 4 Architectural Coating	Air Compressors	1	6.00	78	0.48
K Phase 2 Site Prep	Rubber Tired Dozers	3	8.00	247	0.40
K Phase 2 Site Prep	Tractors/Loaders/Backhoes	4	8.00	97	0.37
L Phase 2 Grading	Excavators	2	8.00	158	0.38
L Phase 2 Grading	Graders	1	8.00	187	0.41
L Phase 2 Grading	Rubber Tired Dozers	1	8.00	247	0.40
L Phase 2 Grading	Scrapers	2	8.00	367	0.48
L Phase 2 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
M Phase 2 Paving	Pavers	2	8.00	130	0.42
M Phase 2 Paving	Paving Equipment	2	8.00	132	0.36
M Phase 2 Paving	Rollers	2	8.00	80	0.38
N Phase 2 Building Construction	Cranes	1	7.00	231	0.29
N Phase 2 Building Construction	Forklifts	3	8.00	89	0.20
N Phase 2 Building Construction	Generator Sets	1	8.00	84	0.74
N Phase 2 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

N Phase 2 Building Construction	Welders	1	8.00	46	0.45
O Phase 2 Architectural Coating	Air Compressors	1	6.00	78	0.48
P Phase 5 Site Prep	Rubber Tired Dozers	3	8.00	247	0.40
P Phase 5 Site Prep	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Q Phase 5 Grading	Excavators	2	8.00	158	0.38
Q Phase 5 Grading	Graders	1	8.00	187	0.41
Q Phase 5 Grading	Rubber Tired Dozers	1	8.00	247	0.40
Q Phase 5 Grading	Scrapers	2	8.00	367	0.48
Q Phase 5 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
R Phase 5 Paving	Pavers	2	8.00	130	0.42
R Phase 5 Paving	Paving Equipment	2	8.00	132	0.36
R Phase 5 Paving	Rollers	2	8.00	80	0.38
S Phase 5 Building Construction	Cranes	1	7.00	231	0.29
S Phase 5 Building Construction	Forklifts	3	8.00	89	0.20
S Phase 5 Building Construction	Generator Sets	1	8.00	84	0.74
S Phase 5 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
S Phase 5 Building Construction	Welders	1	8.00	46	0.45
T Phase 5 Architectural Coating	Air Compressors	1	6.00	78	0.48
U Phase 3 Site Prep	Rubber Tired Dozers	3	8.00	247	0.40
U Phase 3 Site Prep	Tractors/Loaders/Backhoes	4	8.00	97	0.37
W Phase 3 Paving	Pavers	2	8.00	130	0.42
W Phase 3 Paving	Paving Equipment	2	8.00	132	0.36
W Phase 3 Paving	Rollers	2	8.00	80	0.38
X Phase 3 Building Construction	Cranes	1	7.00	231	0.29
X Phase 3 Building Construction	Forklifts	3	8.00	89	0.20
X Phase 3 Building Construction	Generator Sets	1	8.00	84	0.74
X Phase 3 Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

X Phase 3 Building Construction	Welders	1	8.00	46	0.45
Y Phase 3 Architectural Coating	Air Compressors	1	6.00	78	0.48
V Phase 3 Grading	Excavators	2	8.00	158	0.38
V Phase 3 Grading	Graders	1	8.00	187	0.41
V Phase 3 Grading	Rubber Tired Dozers	1	8.00	247	0.40
V Phase 3 Grading	Scrapers	2	8.00	367	0.48
V Phase 3 Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Lilac Hills Ranch - Buildout 2030 - With Design Features - San Diego County, Annual

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
A Phase 1 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
B Phase 1 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
C Phase 1 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
D Phase 1 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
E Phase 1 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
F Phase 4 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
G Phase 4 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
H Phase 4 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
I Phase 4 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
J Phase 4 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
K Phase 2 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
L Phase 2 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
M Phase 2 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
N Phase 2 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
O Phase 2 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
P Phase 5 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Q Phase 5 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
R Phase 5 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
S Phase 5 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
T Phase 5 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
U Phase 3 Site Prep	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
W Phase 3 Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
X Phase 3 Building Construction	9	1,221.00	268.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Y Phase 3 Architectural Coating	1	244.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
V Phase 3 Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 A Phase 1 Site Prep - 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					0.7421	0.0000	0.7421	0.3315	0.0000	0.3315	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1284	1.3362	0.6777	1.2000e-003		0.0692	0.0692		0.0637	0.0637	0.0000	105.3066	105.3066	0.0341	0.0000	106.1581
Total	**0.1284**	**1.3362**	**0.6777**	**1.2000e-003**	**0.7421**	**0.0692**	**0.8113**	**0.3315**	**0.0637**	**0.3952**	**0.0000**	**105.3066**	**105.3066**	**0.0341**	**0.0000**	**106.1581**

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	2.0900e-003	1.5500e-003	0.0152	5.0000e-005	4.5500e-003	3.0000e-005	4.5800e-003	1.2100e-003	3.0000e-005	1.2400e-003	0.0000	4.1100	4.1100	1.2000e-004	0.0000	4.1131
Total	**2.0900e-003**	**1.5500e-003**	**0.0152**	**5.0000e-005**	**4.5500e-003**	**3.0000e-005**	**4.5800e-003**	**1.2100e-003**	**3.0000e-005**	**1.2400e-003**	**0.0000**	**4.1100**	**4.1100**	**1.2000e-004**	**0.0000**	**4.1131**

3.2 A Phase 1 Site Prep - 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					0.7421	0.0000	0.7421	0.3315	0.0000	0.3315	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1284	1.3361	0.6777	1.2000e-003		0.0692	0.0692		0.0637	0.0637	0.0000	105.3065	105.3065	0.0341	0.0000	106.1580
Total	**0.1284**	**1.3361**	**0.6777**	**1.2000e-003**	**0.7421**	**0.0692**	**0.8113**	**0.3315**	**0.0637**	**0.3952**	**0.0000**	**105.3065**	**105.3065**	**0.0341**	**0.0000**	**106.1580**

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	2.0900e-003	1.5500e-003	0.0152	5.0000e-005	4.5500e-003	3.0000e-005	4.5800e-003	1.2100e-003	3.0000e-005	1.2400e-003	0.0000	4.1100	4.1100	1.2000e-004	0.0000	4.1131
Total	**2.0900e-003**	**1.5500e-003**	**0.0152**	**5.0000e-005**	**4.5500e-003**	**3.0000e-005**	**4.5800e-003**	**1.2100e-003**	**3.0000e-005**	**1.2400e-003**	**0.0000**	**4.1100**	**4.1100**	**1.2000e-004**	**0.0000**	**4.1131**

3.3 B Phase 1 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5704	0.0000	0.5704	0.2372	0.0000	0.2372	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2937	3.3130	2.1093	4.0900e-003		0.1435	0.1435		0.1320	0.1320	0.0000	359.5963	359.5963	0.1163	0.0000	362.5039
Total	**0.2937**	**3.3130**	**2.1093**	**4.0900e-003**	**0.5704**	**0.1435**	**0.7139**	**0.2372**	**0.1320**	**0.3692**	**0.0000**	**359.5963**	**359.5963**	**0.1163**	**0.0000**	**362.5039**

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	4.8700e-003	3.6000e-003	0.0353	1.1000e-004	0.0106	8.0000e-005	0.0107	2.8100e-003	7.0000e-005	2.8800e-003	0.0000	9.5684	9.5684	2.9000e-004	0.0000	9.5755
Total	**4.8700e-003**	**3.6000e-003**	**0.0353**	**1.1000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8100e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**9.5684**	**9.5684**	**2.9000e-004**	**0.0000**	**9.5755**

3.3 B Phase 1 Grading - 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					0.5704	0.0000	0.5704	0.2372	0.0000	0.2372	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2937	3.3130	2.1092	4.0900e-003		0.1435	0.1435		0.1320	0.1320	0.0000	359.5959	359.5959	0.1163	0.0000	362.5034
Total	**0.2937**	**3.3130**	**2.1092**	**4.0900e-003**	**0.5704**	**0.1435**	**0.7139**	**0.2372**	**0.1320**	**0.3692**	**0.0000**	**359.5959**	**359.5959**	**0.1163**	**0.0000**	**362.5034**

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	4.8700e-003	3.6000e-003	0.0353	1.1000e-004	0.0106	8.0000e-005	0.0107	2.8100e-003	7.0000e-005	2.8800e-003	0.0000	9.5684	9.5684	2.9000e-004	0.0000	9.5755
Total	**4.8700e-003**	**3.6000e-003**	**0.0353**	**1.1000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8100e-003**	**7.0000e-005**	**2.8800e-003**	**0.0000**	**9.5684**	**9.5684**	**2.9000e-004**	**0.0000**	**9.5755**

3.4 C Phase 1 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0389	0.4005	0.4543	7.1000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	62.0728	62.0728	0.0201	0.0000	62.5747
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.4005**	**0.4543**	**7.1000e-004**		**0.0210**	**0.0210**		**0.0193**	**0.0193**	**0.0000**	**62.0728**	**62.0728**	**0.0201**	**0.0000**	**62.5747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1500e-003	0.0116	4.0000e-005	3.7300e-003	3.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0200e-003	0.0000	3.2574	3.2574	9.0000e-005	0.0000	3.2598
Total	**1.6200e-003**	**1.1500e-003**	**0.0116**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7600e-003**	**9.9000e-004**	**2.0000e-005**	**1.0200e-003**	**0.0000**	**3.2574**	**3.2574**	**9.0000e-005**	**0.0000**	**3.2598**

3.4 C Phase 1 Paving - 2021

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	0.0389	0.4005	0.4543	7.1000e-004		0.0210	0.0210		0.0193	0.0193	0.0000	62.0727	62.0727	0.0201	0.0000	62.5746
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.4005**	**0.4543**	**7.1000e-004**		**0.0210**	**0.0210**		**0.0193**	**0.0193**	**0.0000**	**62.0727**	**62.0727**	**0.0201**	**0.0000**	**62.5746**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.1500e-003	0.0116	4.0000e-005	3.7300e-003	3.0000e-005	3.7600e-003	9.9000e-004	2.0000e-005	1.0200e-003	0.0000	3.2574	3.2574	9.0000e-005	0.0000	3.2598
Total	**1.6200e-003**	**1.1500e-003**	**0.0116**	**4.0000e-005**	**3.7300e-003**	**3.0000e-005**	**3.7600e-003**	**9.9000e-004**	**2.0000e-005**	**1.0200e-003**	**0.0000**	**3.2574**	**3.2574**	**9.0000e-005**	**0.0000**	**3.2598**

3.5 D Phase 1 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	0.1872	1.7171	1.6327	2.6500e-003		0.0944	0.0944		0.0888	0.0888	0.0000	228.1627	228.1627	0.0551	0.0000	229.5389
Total	**0.1872**	**1.7171**	**1.6327**	**2.6500e-003**		**0.0944**	**0.0944**		**0.0888**	**0.0888**	**0.0000**	**228.1627**	**228.1627**	**0.0551**	**0.0000**	**229.5389**

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	0.0816	2.7128	0.7235	7.0700e-003	0.1752	5.7400e-003	0.1810	0.0506	5.4900e-003	0.0561	0.0000	690.1494	690.1494	0.0512	0.0000	691.4300
Worker	0.4181	0.2983	3.0046	9.3200e-003	0.9645	6.8300e-003	0.9713	0.2563	6.2900e-003	0.2626	0.0000	842.5081	842.5081	0.0242	0.0000	843.1118
Total	**0.4997**	**3.0111**	**3.7281**	**0.0164**	**1.1397**	**0.0126**	**1.1522**	**0.3069**	**0.0118**	**0.3187**	**0.0000**	**1,532.6575**	**1,532.6575**	**0.0754**	**0.0000**	**1,534.5417**

3.5 D Phase 1 Building Construction - 2021

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	0.1872	1.7171	1.6327	2.6500e-003		0.0944	0.0944		0.0888	0.0888	0.0000	228.1625	228.1625	0.0551	0.0000	229.5386
Total	**0.1872**	**1.7171**	**1.6327**	**2.6500e-003**		**0.0944**	**0.0944**		**0.0888**	**0.0888**	**0.0000**	**228.1625**	**228.1625**	**0.0551**	**0.0000**	**229.5386**

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	0.0816	2.7128	0.7235	7.0700e-003	0.1752	5.7400e-003	0.1810	0.0506	5.4900e-003	0.0561	0.0000	690.1494	690.1494	0.0512	0.0000	691.4300
Worker	0.4181	0.2983	3.0046	9.3200e-003	0.9645	6.8300e-003	0.9713	0.2563	6.2900e-003	0.2626	0.0000	842.5081	842.5081	0.0242	0.0000	843.1118
Total	**0.4997**	**3.0111**	**3.7281**	**0.0164**	**1.1397**	**0.0126**	**1.1522**	**0.3069**	**0.0118**	**0.3187**	**0.0000**	**1,532.6575**	**1,532.6575**	**0.0754**	**0.0000**	**1,534.5417**

3.6 E Phase 1 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1008	0.1200	2.0000e-004		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.0000	16.8515	16.8515	1.1600e-003	0.0000	16.8804
Total	**26.1094**	**0.1008**	**0.1200**	**2.0000e-004**		**6.2100e-003**	**6.2100e-003**		**6.2100e-003**	**6.2100e-003**	**0.0000**	**16.8515**	**16.8515**	**1.1600e-003**	**0.0000**	**16.8804**

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	0.0560	0.0399	0.4023	1.2500e-003	0.1291	9.1000e-004	0.1301	0.0343	8.4000e-004	0.0352	0.0000	112.8122	112.8122	3.2300e-003	0.0000	112.8930
Total	**0.0560**	**0.0399**	**0.4023**	**1.2500e-003**	**0.1291**	**9.1000e-004**	**0.1301**	**0.0343**	**8.4000e-004**	**0.0352**	**0.0000**	**112.8122**	**112.8122**	**3.2300e-003**	**0.0000**	**112.8930**

3.6 E Phase 1 Architectural Coating - 2021

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1008	0.1200	2.0000e-004		6.2100e-003	6.2100e-003		6.2100e-003	6.2100e-003	0.0000	16.8515	16.8515	1.1600e-003	0.0000	16.8804
Total	**26.1094**	**0.1008**	**0.1200**	**2.0000e-004**		**6.2100e-003**	**6.2100e-003**		**6.2100e-003**	**6.2100e-003**	**0.0000**	**16.8515**	**16.8515**	**1.1600e-003**	**0.0000**	**16.8804**

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	0.0560	0.0399	0.4023	1.2500e-003	0.1291	9.1000e-004	0.1301	0.0343	8.4000e-004	0.0352	0.0000	112.8122	112.8122	3.2300e-003	0.0000	112.8930
Total	**0.0560**	**0.0399**	**0.4023**	**1.2500e-003**	**0.1291**	**9.1000e-004**	**0.1301**	**0.0343**	**8.4000e-004**	**0.0352**	**0.0000**	**112.8122**	**112.8122**	**3.2300e-003**	**0.0000**	**112.8930**

3.7 F Phase 4 Site Prep - 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					
Fugitive Dust					1.1479	0.0000	1.1479	0.5549	0.0000	0.5549	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1712	1.7865	1.0637	2.0500e-003		0.0871	0.0871		0.0801	0.0801	0.0000	180.5727	180.5727	0.0584	0.0000	182.0327
Total	**0.1712**	**1.7865**	**1.0637**	**2.0500e-003**	**1.1479**	**0.0871**	**1.2350**	**0.5549**	**0.0801**	**0.6350**	**0.0000**	**180.5727**	**180.5727**	**0.0584**	**0.0000**	**182.0327**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.2000e-003	0.0225	7.0000e-005	7.7900e-003	5.0000e-005	7.8500e-003	2.0700e-003	5.0000e-005	2.1200e-003	0.0000	6.5595	6.5595	1.8000e-004	0.0000	6.5639
Total	**3.2000e-003**	**2.2000e-003**	**0.0225**	**7.0000e-005**	**7.7900e-003**	**5.0000e-005**	**7.8500e-003**	**2.0700e-003**	**5.0000e-005**	**2.1200e-003**	**0.0000**	**6.5595**	**6.5595**	**1.8000e-004**	**0.0000**	**6.5639**

3.7 F Phase 4 Site Prep - 2022

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					1.1479	0.0000	1.1479	0.5549	0.0000	0.5549	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1712	1.7865	1.0637	2.0500e-003		0.0871	0.0871		0.0801	0.0801	0.0000	180.5725	180.5725	0.0584	0.0000	182.0325
Total	**0.1712**	**1.7865**	**1.0637**	**2.0500e-003**	**1.1479**	**0.0871**	**1.2350**	**0.5549**	**0.0801**	**0.6350**	**0.0000**	**180.5725**	**180.5725**	**0.0584**	**0.0000**	**182.0325**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	2.2000e-003	0.0225	7.0000e-005	7.7900e-003	5.0000e-005	7.8500e-003	2.0700e-003	5.0000e-005	2.1200e-003	0.0000	6.5595	6.5595	1.8000e-004	0.0000	6.5639
Total	**3.2000e-003**	**2.2000e-003**	**0.0225**	**7.0000e-005**	**7.7900e-003**	**5.0000e-005**	**7.8500e-003**	**2.0700e-003**	**5.0000e-005**	**2.1200e-003**	**0.0000**	**6.5595**	**6.5595**	**1.8000e-004**	**0.0000**	**6.5639**

3.8 G Phase 4 Grading - 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					
Fugitive Dust					0.5608	0.0000	0.5608	0.2321	0.0000	0.2321	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2338	2.5054	1.8732	4.0000e-003		0.1055	0.1055		0.0970	0.0970	0.0000	351.7482	351.7482	0.1138	0.0000	354.5922
Total	**0.2338**	**2.5054**	**1.8732**	**4.0000e-003**	**0.5608**	**0.1055**	**0.6662**	**0.2321**	**0.0970**	**0.3291**	**0.0000**	**351.7482**	**351.7482**	**0.1138**	**0.0000**	**354.5922**

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	4.2400e-003	2.9200e-003	0.0299	1.0000e-004	0.0103	7.0000e-005	0.0104	2.7500e-003	7.0000e-005	2.8100e-003	0.0000	8.7055	8.7055	2.4000e-004	0.0000	8.7114
Total	**4.2400e-003**	**2.9200e-003**	**0.0299**	**1.0000e-004**	**0.0103**	**7.0000e-005**	**0.0104**	**2.7500e-003**	**7.0000e-005**	**2.8100e-003**	**0.0000**	**8.7055**	**8.7055**	**2.4000e-004**	**0.0000**	**8.7114**

3.8 G Phase 4 Grading - 2022

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					0.5608	0.0000	0.5608	0.2321	0.0000	0.2321	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2338	2.5054	1.8732	4.0000e-003		0.1055	0.1055		0.0970	0.0970	0.0000	351.7478	351.7478	0.1138	0.0000	354.5918
Total	**0.2338**	**2.5054**	**1.8732**	**4.0000e-003**	**0.5608**	**0.1055**	**0.6662**	**0.2321**	**0.0970**	**0.3291**	**0.0000**	**351.7478**	**351.7478**	**0.1138**	**0.0000**	**354.5918**

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	4.2400e-003	2.9200e-003	0.0299	1.0000e-004	0.0103	7.0000e-005	0.0104	2.7500e-003	7.0000e-005	2.8100e-003	0.0000	8.7055	8.7055	2.4000e-004	0.0000	8.7114
Total	**4.2400e-003**	**2.9200e-003**	**0.0299**	**1.0000e-004**	**0.0103**	**7.0000e-005**	**0.0104**	**2.7500e-003**	**7.0000e-005**	**2.8100e-003**	**0.0000**	**8.7055**	**8.7055**	**2.4000e-004**	**0.0000**	**8.7114**

3.9 H Phase 4 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	0.0116	0.1168	0.1531	2.4000e-004		5.9600e-003	5.9600e-003		5.4900e-003	5.4900e-003	0.0000	21.0289	21.0289	6.8000e-003	0.0000	21.1990
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1168**	**0.1531**	**2.4000e-004**		**5.9600e-003**	**5.9600e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**21.0289**	**21.0289**	**6.8000e-003**	**0.0000**	**21.1990**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.6000e-004	3.6500e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0629	1.0629	3.0000e-005	0.0000	1.0636
Total	**5.2000e-004**	**3.6000e-004**	**3.6500e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0629**	**1.0629**	**3.0000e-005**	**0.0000**	**1.0636**

3.9 H Phase 4 Paving - 2022

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	0.0116	0.1168	0.1531	2.4000e-004		5.9600e-003	5.9600e-003		5.4900e-003	5.4900e-003	0.0000	21.0289	21.0289	6.8000e-003	0.0000	21.1989
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1168**	**0.1531**	**2.4000e-004**		**5.9600e-003**	**5.9600e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**21.0289**	**21.0289**	**6.8000e-003**	**0.0000**	**21.1989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.6000e-004	3.6500e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.0629	1.0629	3.0000e-005	0.0000	1.0636
Total	**5.2000e-004**	**3.6000e-004**	**3.6500e-003**	**1.0000e-005**	**1.2600e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.0629**	**1.0629**	**3.0000e-005**	**0.0000**	**1.0636**

3.9 H Phase 4 Paving - 2023

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	0.0222	0.2191	0.3136	4.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	43.0578	43.0578	0.0139	0.0000	43.4059
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0222**	**0.2191**	**0.3136**	**4.9000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**43.0578**	**43.0578**	**0.0139**	**0.0000**	**43.4059**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.7000e-004	6.9400e-003	2.0000e-005	2.5900e-003	2.0000e-005	2.6000e-003	6.9000e-004	2.0000e-005	7.0000e-004	0.0000	2.0932	2.0932	5.0000e-005	0.0000	2.0946
Total	**1.0100e-003**	**6.7000e-004**	**6.9400e-003**	**2.0000e-005**	**2.5900e-003**	**2.0000e-005**	**2.6000e-003**	**6.9000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**2.0932**	**2.0932**	**5.0000e-005**	**0.0000**	**2.0946**

3.9 H Phase 4 Paving - 2023

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	0.0222	0.2191	0.3136	4.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	43.0577	43.0577	0.0139	0.0000	43.4059
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0222**	**0.2191**	**0.3136**	**4.9000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**43.0577**	**43.0577**	**0.0139**	**0.0000**	**43.4059**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0100e-003	6.7000e-004	6.9400e-003	2.0000e-005	2.5900e-003	2.0000e-005	2.6000e-003	6.9000e-004	2.0000e-005	7.0000e-004	0.0000	2.0932	2.0932	5.0000e-005	0.0000	2.0946
Total	**1.0100e-003**	**6.7000e-004**	**6.9400e-003**	**2.0000e-005**	**2.5900e-003**	**2.0000e-005**	**2.6000e-003**	**6.9000e-004**	**2.0000e-005**	**7.0000e-004**	**0.0000**	**2.0932**	**2.0932**	**5.0000e-005**	**0.0000**	**2.0946**

3.10 I Phase 4 Building Construction - 2023

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	0.1541	1.4097	1.5919	2.6400e-003		0.0686	0.0686		0.0645	0.0645	0.0000	227.1687	227.1687	0.0540	0.0000	228.5197
Total	**0.1541**	**1.4097**	**1.5919**	**2.6400e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**227.1687**	**227.1687**	**0.0540**	**0.0000**	**228.5197**

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	0.0583	2.0023	0.6206	6.7700e-003	0.1743	2.4000e-003	0.1767	0.0503	2.2900e-003	0.0526	0.0000	663.0218	663.0218	0.0451	0.0000	664.1488
Worker	0.3731	0.2470	2.5739	8.5900e-003	0.9596	6.5100e-003	0.9661	0.2550	6.0000e-003	0.2610	0.0000	776.6587	776.6587	0.0201	0.0000	777.1618
Total	**0.4314**	**2.2494**	**3.1945**	**0.0154**	**1.1339**	**8.9100e-003**	**1.1428**	**0.3053**	**8.2900e-003**	**0.3136**	**0.0000**	**1,439.6805**	**1,439.6805**	**0.0652**	**0.0000**	**1,441.3106**

3.10 I Phase 4 Building Construction - 2023

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	0.1541	1.4097	1.5919	2.6400e-003		0.0686	0.0686		0.0645	0.0645	0.0000	227.1684	227.1684	0.0540	0.0000	228.5194
Total	**0.1541**	**1.4097**	**1.5919**	**2.6400e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**227.1684**	**227.1684**	**0.0540**	**0.0000**	**228.5194**

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	0.0583	2.0023	0.6206	6.7700e-003	0.1743	2.4000e-003	0.1767	0.0503	2.2900e-003	0.0526	0.0000	663.0218	663.0218	0.0451	0.0000	664.1488
Worker	0.3731	0.2470	2.5739	8.5900e-003	0.9596	6.5100e-003	0.9661	0.2550	6.0000e-003	0.2610	0.0000	776.6587	776.6587	0.0201	0.0000	777.1618
Total	**0.4314**	**2.2494**	**3.1945**	**0.0154**	**1.1339**	**8.9100e-003**	**1.1428**	**0.3053**	**8.2900e-003**	**0.3136**	**0.0000**	**1,439.6805**	**1,439.6805**	**0.0652**	**0.0000**	**1,441.3106**

3.11 J Phase 4 Architectural Coating - 2023

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0125	0.0847	0.1177	1.9000e-004		4.6000e-003	4.6000e-003		4.6000e-003	4.6000e-003	0.0000	16.5962	16.5962	9.9000e-004	0.0000	16.6210
Total	**26.1075**	**0.0847**	**0.1177**	**1.9000e-004**		**4.6000e-003**	**4.6000e-003**		**4.6000e-003**	**4.6000e-003**	**0.0000**	**16.5962**	**16.5962**	**9.9000e-004**	**0.0000**	**16.6210**

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	0.0495	0.0327	0.3412	1.1400e-003	0.1272	8.6000e-004	0.1281	0.0338	7.9000e-004	0.0346	0.0000	102.9418	102.9418	2.6700e-003	0.0000	103.0085
Total	**0.0495**	**0.0327**	**0.3412**	**1.1400e-003**	**0.1272**	**8.6000e-004**	**0.1281**	**0.0338**	**7.9000e-004**	**0.0346**	**0.0000**	**102.9418**	**102.9418**	**2.6700e-003**	**0.0000**	**103.0085**

3.11 J Phase 4 Architectural Coating - 2023

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0125	0.0847	0.1177	1.9000e-004		4.6000e-003	4.6000e-003		4.6000e-003	4.6000e-003	0.0000	16.5961	16.5961	9.9000e-004	0.0000	16.6210
Total	**26.1075**	**0.0847**	**0.1177**	**1.9000e-004**		**4.6000e-003**	**4.6000e-003**		**4.6000e-003**	**4.6000e-003**	**0.0000**	**16.5961**	**16.5961**	**9.9000e-004**	**0.0000**	**16.6210**

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	0.0495	0.0327	0.3412	1.1400e-003	0.1272	8.6000e-004	0.1281	0.0338	7.9000e-004	0.0346	0.0000	102.9418	102.9418	2.6700e-003	0.0000	103.0085
Total	**0.0495**	**0.0327**	**0.3412**	**1.1400e-003**	**0.1272**	**8.6000e-004**	**0.1281**	**0.0338**	**7.9000e-004**	**0.0346**	**0.0000**	**102.9418**	**102.9418**	**2.6700e-003**	**0.0000**	**103.0085**

3.12 K Phase 2 Site Prep - 2024

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					0.9479	0.0000	0.9479	0.4455	0.0000	0.4455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1144	1.1686	0.7884	1.6400e-003		0.0529	0.0529		0.0486	0.0486	0.0000	143.8654	143.8654	0.0465	0.0000	145.0286
Total	**0.1144**	**1.1686**	**0.7884**	**1.6400e-003**	**0.9479**	**0.0529**	**1.0007**	**0.4455**	**0.0486**	**0.4941**	**0.0000**	**143.8654**	**143.8654**	**0.0465**	**0.0000**	**145.0286**

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	2.3000e-003	1.4700e-003	0.0156	5.0000e-005	6.2100e-003	4.0000e-005	6.2500e-003	1.6500e-003	4.0000e-005	1.6900e-003	0.0000	4.8260	4.8260	1.2000e-004	0.0000	4.8290
Total	**2.3000e-003**	**1.4700e-003**	**0.0156**	**5.0000e-005**	**6.2100e-003**	**4.0000e-005**	**6.2500e-003**	**1.6500e-003**	**4.0000e-005**	**1.6900e-003**	**0.0000**	**4.8260**	**4.8260**	**1.2000e-004**	**0.0000**	**4.8290**

3.12 K Phase 2 Site Prep - 2024

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					0.9479	0.0000	0.9479	0.4455	0.0000	0.4455	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1144	1.1686	0.7884	1.6400e-003		0.0529	0.0529		0.0486	0.0486	0.0000	143.8652	143.8652	0.0465	0.0000	145.0284
Total	**0.1144**	**1.1686**	**0.7884**	**1.6400e-003**	**0.9479**	**0.0529**	**1.0007**	**0.4455**	**0.0486**	**0.4941**	**0.0000**	**143.8652**	**143.8652**	**0.0465**	**0.0000**	**145.0284**

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	2.3000e-003	1.4700e-003	0.0156	5.0000e-005	6.2100e-003	4.0000e-005	6.2500e-003	1.6500e-003	4.0000e-005	1.6900e-003	0.0000	4.8260	4.8260	1.2000e-004	0.0000	4.8290
Total	**2.3000e-003**	**1.4700e-003**	**0.0156**	**5.0000e-005**	**6.2100e-003**	**4.0000e-005**	**6.2500e-003**	**1.6500e-003**	**4.0000e-005**	**1.6900e-003**	**0.0000**	**4.8260**	**4.8260**	**1.2000e-004**	**0.0000**	**4.8290**

3.13 L Phase 2 Grading - 2024

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					0.5624	0.0000	0.5624	0.2336	0.0000	0.2336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2092	2.1045	1.8020	4.0300e-003		0.0868	0.0868		0.0799	0.0799	0.0000	354.3769	354.3769	0.1146	0.0000	357.2422
Total	**0.2092**	**2.1045**	**1.8020**	**4.0300e-003**	**0.5624**	**0.0868**	**0.6492**	**0.2336**	**0.0799**	**0.3135**	**0.0000**	**354.3769**	**354.3769**	**0.1146**	**0.0000**	**357.2422**

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	3.8500e-003	2.4600e-003	0.0261	9.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	8.1057	8.1057	2.0000e-004	0.0000	8.1107
Total	**3.8500e-003**	**2.4600e-003**	**0.0261**	**9.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**8.1057**	**8.1057**	**2.0000e-004**	**0.0000**	**8.1107**

3.13 L Phase 2 Grading - 2024

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					0.5624	0.0000	0.5624	0.2336	0.0000	0.2336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2092	2.1045	1.8020	4.0300e-003		0.0868	0.0868		0.0799	0.0799	0.0000	354.3765	354.3765	0.1146	0.0000	357.2418
Total	**0.2092**	**2.1045**	**1.8020**	**4.0300e-003**	**0.5624**	**0.0868**	**0.6492**	**0.2336**	**0.0799**	**0.3135**	**0.0000**	**354.3765**	**354.3765**	**0.1146**	**0.0000**	**357.2418**

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	3.8500e-003	2.4600e-003	0.0261	9.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	8.1057	8.1057	2.0000e-004	0.0000	8.1107
Total	**3.8500e-003**	**2.4600e-003**	**0.0261**	**9.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**8.1057**	**8.1057**	**2.0000e-004**	**0.0000**	**8.1107**

3.14 M Phase 2 Paving - 2024

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	0.0208	0.2000	0.3071	4.8000e-004		9.8400e-003	9.8400e-003		9.0500e-003	9.0500e-003	0.0000	42.0557	42.0557	0.0136	0.0000	42.3958
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0208**	**0.2000**	**0.3071**	**4.8000e-004**		**9.8400e-003**	**9.8400e-003**		**9.0500e-003**	**9.0500e-003**	**0.0000**	**42.0557**	**42.0557**	**0.0136**	**0.0000**	**42.3958**

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	9.3000e-004	6.0000e-004	6.3300e-003	2.0000e-005	2.5300e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	1.9641	1.9641	5.0000e-005	0.0000	1.9653
Total	**9.3000e-004**	**6.0000e-004**	**6.3300e-003**	**2.0000e-005**	**2.5300e-003**	**2.0000e-005**	**2.5400e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**1.9641**	**1.9641**	**5.0000e-005**	**0.0000**	**1.9653**

3.14 M Phase 2 Paving - 2024

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	0.0208	0.2000	0.3071	4.8000e-004		9.8400e-003	9.8400e-003		9.0500e-003	9.0500e-003	0.0000	42.0557	42.0557	0.0136	0.0000	42.3957
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0208**	**0.2000**	**0.3071**	**4.8000e-004**		**9.8400e-003**	**9.8400e-003**		**9.0500e-003**	**9.0500e-003**	**0.0000**	**42.0557**	**42.0557**	**0.0136**	**0.0000**	**42.3957**

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	9.3000e-004	6.0000e-004	6.3300e-003	2.0000e-005	2.5300e-003	2.0000e-005	2.5400e-003	6.7000e-004	2.0000e-005	6.9000e-004	0.0000	1.9641	1.9641	5.0000e-005	0.0000	1.9653
Total	**9.3000e-004**	**6.0000e-004**	**6.3300e-003**	**2.0000e-005**	**2.5300e-003**	**2.0000e-005**	**2.5400e-003**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**0.0000**	**1.9641**	**1.9641**	**5.0000e-005**	**0.0000**	**1.9653**

3.14 M Phase 2 Paving - 2025

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	0.0105	0.0987	0.1677	2.6000e-004		4.8100e-003	4.8100e-003		4.4300e-003	4.4300e-003	0.0000	23.0221	23.0221	7.4500e-003	0.0000	23.2083
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0987**	**0.1677**	**2.6000e-004**		**4.8100e-003**	**4.8100e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**23.0221**	**23.0221**	**7.4500e-003**	**0.0000**	**23.2083**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.2300e-003	1.0000e-005	1.3800e-003	1.0000e-005	1.3900e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.0321	1.0321	2.0000e-005	0.0000	1.0327
Total	**4.9000e-004**	**3.0000e-004**	**3.2300e-003**	**1.0000e-005**	**1.3800e-003**	**1.0000e-005**	**1.3900e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.0321**	**1.0321**	**2.0000e-005**	**0.0000**	**1.0327**

3.14 M Phase 2 Paving - 2025

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	0.0105	0.0987	0.1677	2.6000e-004		4.8100e-003	4.8100e-003		4.4300e-003	4.4300e-003	0.0000	23.0221	23.0221	7.4500e-003	0.0000	23.2083
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0105**	**0.0987**	**0.1677**	**2.6000e-004**		**4.8100e-003**	**4.8100e-003**		**4.4300e-003**	**4.4300e-003**	**0.0000**	**23.0221**	**23.0221**	**7.4500e-003**	**0.0000**	**23.2083**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	3.2300e-003	1.0000e-005	1.3800e-003	1.0000e-005	1.3900e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.0321	1.0321	2.0000e-005	0.0000	1.0327
Total	**4.9000e-004**	**3.0000e-004**	**3.2300e-003**	**1.0000e-005**	**1.3800e-003**	**1.0000e-005**	**1.3900e-003**	**3.7000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.0321**	**1.0321**	**2.0000e-005**	**0.0000**	**1.0327**

3.15 N Phase 2 Building Construction - 2025

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9619	224.9619	0.0529	0.0000	226.2839
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9619**	**224.9619**	**0.0529**	**0.0000**	**226.2839**

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	0.0540	1.9256	0.5827	6.6000e-003	0.1725	2.2400e-003	0.1748	0.0498	2.1400e-003	0.0520	0.0000	648.1182	648.1182	0.0436	0.0000	649.2083
Worker	0.3354	0.2068	2.2207	7.8300e-003	0.9498	6.2300e-003	0.9560	0.2524	5.7300e-003	0.2581	0.0000	708.6160	708.6160	0.0169	0.0000	709.0382
Total	**0.3894**	**2.1323**	**2.8034**	**0.0144**	**1.1223**	**8.4700e-003**	**1.1308**	**0.3022**	**7.8700e-003**	**0.3101**	**0.0000**	**1,356.7342**	**1,356.7342**	**0.0605**	**0.0000**	**1,358.2465**

3.15 N Phase 2 Building Construction - 2025

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9616	224.9616	0.0529	0.0000	226.2836
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9616**	**224.9616**	**0.0529**	**0.0000**	**226.2836**

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	0.0540	1.9256	0.5827	6.6000e-003	0.1725	2.2400e-003	0.1748	0.0498	2.1400e-003	0.0520	0.0000	648.1182	648.1182	0.0436	0.0000	649.2083
Worker	0.3354	0.2068	2.2207	7.8300e-003	0.9498	6.2300e-003	0.9560	0.2524	5.7300e-003	0.2581	0.0000	708.6160	708.6160	0.0169	0.0000	709.0382
Total	**0.3894**	**2.1323**	**2.8034**	**0.0144**	**1.1223**	**8.4700e-003**	**1.1308**	**0.3022**	**7.8700e-003**	**0.3101**	**0.0000**	**1,356.7342**	**1,356.7342**	**0.0605**	**0.0000**	**1,358.2465**

3.16 O Phase 2 Architectural Coating - 2025

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5962	16.5962	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5962**	**16.5962**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0449	0.0277	0.2974	1.0500e-003	0.1272	8.3000e-004	0.1280	0.0338	7.7000e-004	0.0346	0.0000	94.8914	94.8914	2.2600e-003	0.0000	94.9479
Total	**0.0449**	**0.0277**	**0.2974**	**1.0500e-003**	**0.1272**	**8.3000e-004**	**0.1280**	**0.0338**	**7.7000e-004**	**0.0346**	**0.0000**	**94.8914**	**94.8914**	**2.2600e-003**	**0.0000**	**94.9479**

3.16 O Phase 2 Architectural Coating - 2025

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5961	16.5961	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5961**	**16.5961**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0449	0.0277	0.2974	1.0500e-003	0.1272	8.3000e-004	0.1280	0.0338	7.7000e-004	0.0346	0.0000	94.8914	94.8914	2.2600e-003	0.0000	94.9479
Total	**0.0449**	**0.0277**	**0.2974**	**1.0500e-003**	**0.1272**	**8.3000e-004**	**0.1280**	**0.0338**	**7.7000e-004**	**0.0346**	**0.0000**	**94.8914**	**94.8914**	**2.2600e-003**	**0.0000**	**94.9479**

3.17 P Phase 5 Site Prep - 2026

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					0.7712	0.0000	0.7712	0.3466	0.0000	0.3466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0816	0.8327	0.5911	1.2600e-003		0.0359	0.0359		0.0330	0.0330	0.0000	110.4411	110.4411	0.0357	0.0000	111.3340
Total	**0.0816**	**0.8327**	**0.5911**	**1.2600e-003**	**0.7712**	**0.0359**	**0.8070**	**0.3466**	**0.0330**	**0.3796**	**0.0000**	**110.4411**	**110.4411**	**0.0357**	**0.0000**	**111.3340**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6100e-003	9.6000e-004	0.0105	4.0000e-005	4.7600e-003	3.0000e-005	4.7900e-003	1.2700e-003	3.0000e-005	1.2900e-003	0.0000	3.4238	3.4238	8.0000e-005	0.0000	3.4258
Total	**1.6100e-003**	**9.6000e-004**	**0.0105**	**4.0000e-005**	**4.7600e-003**	**3.0000e-005**	**4.7900e-003**	**1.2700e-003**	**3.0000e-005**	**1.2900e-003**	**0.0000**	**3.4238**	**3.4238**	**8.0000e-005**	**0.0000**	**3.4258**

3.17 P Phase 5 Site Prep - 2026

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					0.7712	0.0000	0.7712	0.3466	0.0000	0.3466	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0816	0.8327	0.5911	1.2600e-003		0.0359	0.0359		0.0330	0.0330	0.0000	110.4409	110.4409	0.0357	0.0000	111.3339
Total	**0.0816**	**0.8327**	**0.5911**	**1.2600e-003**	**0.7712**	**0.0359**	**0.8070**	**0.3466**	**0.0330**	**0.3796**	**0.0000**	**110.4409**	**110.4409**	**0.0357**	**0.0000**	**111.3339**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6100e-003	9.6000e-004	0.0105	4.0000e-005	4.7600e-003	3.0000e-005	4.7900e-003	1.2700e-003	3.0000e-005	1.2900e-003	0.0000	3.4238	3.4238	8.0000e-005	0.0000	3.4258
Total	**1.6100e-003**	**9.6000e-004**	**0.0105**	**4.0000e-005**	**4.7600e-003**	**3.0000e-005**	**4.7900e-003**	**1.2700e-003**	**3.0000e-005**	**1.2900e-003**	**0.0000**	**3.4238**	**3.4238**	**8.0000e-005**	**0.0000**	**3.4258**

3.18 Q Phase 5 Grading - 2026

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					0.5638	0.0000	0.5638	0.2338	0.0000	0.2338	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1886	1.8163	1.7115	4.0300e-003		0.0735	0.0735		0.0676	0.0676	0.0000	354.2904	354.2904	0.1146	0.0000	357.1550
Total	**0.1886**	**1.8163**	**1.7115**	**4.0300e-003**	**0.5638**	**0.0735**	**0.6373**	**0.2338**	**0.0676**	**0.3014**	**0.0000**	**354.2904**	**354.2904**	**0.1146**	**0.0000**	**357.1550**

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	3.5300e-003	2.1100e-003	0.0229	8.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	7.4931	7.4931	1.7000e-004	0.0000	7.4975
Total	**3.5300e-003**	**2.1100e-003**	**0.0229**	**8.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**7.4931**	**7.4931**	**1.7000e-004**	**0.0000**	**7.4975**

3.18 Q Phase 5 Grading - 2026

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					0.5638	0.0000	0.5638	0.2338	0.0000	0.2338	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1886	1.8163	1.7115	4.0300e-003		0.0735	0.0735		0.0676	0.0676	0.0000	354.2900	354.2900	0.1146	0.0000	357.1546
Total	**0.1886**	**1.8163**	**1.7115**	**4.0300e-003**	**0.5638**	**0.0735**	**0.6373**	**0.2338**	**0.0676**	**0.3014**	**0.0000**	**354.2900**	**354.2900**	**0.1146**	**0.0000**	**357.1546**

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	3.5300e-003	2.1100e-003	0.0229	8.0000e-005	0.0104	7.0000e-005	0.0105	2.7700e-003	6.0000e-005	2.8300e-003	0.0000	7.4931	7.4931	1.7000e-004	0.0000	7.4975
Total	**3.5300e-003**	**2.1100e-003**	**0.0229**	**8.0000e-005**	**0.0104**	**7.0000e-005**	**0.0105**	**2.7700e-003**	**6.0000e-005**	**2.8300e-003**	**0.0000**	**7.4931**	**7.4931**	**1.7000e-004**	**0.0000**	**7.4975**

3.19 R Phase 5 Paving - 2026

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	0.0288	0.2703	0.4592	7.2000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	63.0607	63.0607	0.0204	0.0000	63.5705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0288**	**0.2703**	**0.4592**	**7.2000e-004**		**0.0132**	**0.0132**		**0.0121**	**0.0121**	**0.0000**	**63.0607**	**63.0607**	**0.0204**	**0.0000**	**63.5705**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	7.7000e-004	8.3300e-003	3.0000e-005	3.7900e-003	2.0000e-005	3.8100e-003	1.0100e-003	2.0000e-005	1.0300e-003	0.0000	2.7235	2.7235	6.0000e-005	0.0000	2.7250
Total	**1.2800e-003**	**7.7000e-004**	**8.3300e-003**	**3.0000e-005**	**3.7900e-003**	**2.0000e-005**	**3.8100e-003**	**1.0100e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.7235**	**2.7235**	**6.0000e-005**	**0.0000**	**2.7250**

3.19 R Phase 5 Paving - 2026

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	0.0288	0.2703	0.4592	7.2000e-004		0.0132	0.0132		0.0121	0.0121	0.0000	63.0606	63.0606	0.0204	0.0000	63.5705
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0288**	**0.2703**	**0.4592**	**7.2000e-004**		**0.0132**	**0.0132**		**0.0121**	**0.0121**	**0.0000**	**63.0606**	**63.0606**	**0.0204**	**0.0000**	**63.5705**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	7.7000e-004	8.3300e-003	3.0000e-005	3.7900e-003	2.0000e-005	3.8100e-003	1.0100e-003	2.0000e-005	1.0300e-003	0.0000	2.7235	2.7235	6.0000e-005	0.0000	2.7250
Total	**1.2800e-003**	**7.7000e-004**	**8.3300e-003**	**3.0000e-005**	**3.7900e-003**	**2.0000e-005**	**3.8100e-003**	**1.0100e-003**	**2.0000e-005**	**1.0300e-003**	**0.0000**	**2.7235**	**2.7235**	**6.0000e-005**	**0.0000**	**2.7250**

3.19 R Phase 5 Paving - 2027

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	1.3700e-003	0.0129	0.0219	3.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	3.0029	3.0029	9.7000e-004	0.0000	3.0272
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3700e-003**	**0.0129**	**0.0219**	**3.0000e-005**		**6.3000e-004**	**6.3000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**3.0029**	**3.0029**	**9.7000e-004**	**0.0000**	**3.0272**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	3.0000e-005	3.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1253	0.1253	0.0000	0.0000	0.1254
Total	**6.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1253**	**0.1253**	**0.0000**	**0.0000**	**0.1254**

3.19 R Phase 5 Paving - 2027

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	1.3700e-003	0.0129	0.0219	3.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	3.0029	3.0029	9.7000e-004	0.0000	3.0272
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.3700e-003**	**0.0129**	**0.0219**	**3.0000e-005**		**6.3000e-004**	**6.3000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**3.0029**	**3.0029**	**9.7000e-004**	**0.0000**	**3.0272**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	3.0000e-005	3.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1253	0.1253	0.0000	0.0000	0.1254
Total	**6.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1253**	**0.1253**	**0.0000**	**0.0000**	**0.1254**

3.20 S Phase 5 Building Construction - 2027

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9619	224.9619	0.0529	0.0000	226.2839
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9619**	**224.9619**	**0.0529**	**0.0000**	**226.2839**

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	0.0514	1.8716	0.5673	6.5100e-003	0.1725	2.1300e-003	0.1747	0.0498	2.0300e-003	0.0519	0.0000	641.0069	641.0069	0.0428	0.0000	642.0760
Worker	0.3077	0.1795	1.9682	7.2900e-003	0.9498	5.7100e-003	0.9555	0.2524	5.2500e-003	0.2576	0.0000	659.7959	659.7959	0.0147	0.0000	660.1641
Total	**0.3592**	**2.0511**	**2.5355**	**0.0138**	**1.1223**	**7.8400e-003**	**1.1301**	**0.3022**	**7.2800e-003**	**0.3095**	**0.0000**	**1,300.8028**	**1,300.8028**	**0.0575**	**0.0000**	**1,302.2401**

3.20 S Phase 5 Building Construction - 2027

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	0.1326	1.2096	1.5602	2.6200e-003		0.0512	0.0512		0.0481	0.0481	0.0000	224.9616	224.9616	0.0529	0.0000	226.2836
Total	**0.1326**	**1.2096**	**1.5602**	**2.6200e-003**		**0.0512**	**0.0512**		**0.0481**	**0.0481**	**0.0000**	**224.9616**	**224.9616**	**0.0529**	**0.0000**	**226.2836**

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	0.0514	1.8716	0.5673	6.5100e-003	0.1725	2.1300e-003	0.1747	0.0498	2.0300e-003	0.0519	0.0000	641.0069	641.0069	0.0428	0.0000	642.0760
Worker	0.3077	0.1795	1.9682	7.2900e-003	0.9498	5.7100e-003	0.9555	0.2524	5.2500e-003	0.2576	0.0000	659.7959	659.7959	0.0147	0.0000	660.1641
Total	**0.3592**	**2.0511**	**2.5355**	**0.0138**	**1.1223**	**7.8400e-003**	**1.1301**	**0.3022**	**7.2800e-003**	**0.3095**	**0.0000**	**1,300.8028**	**1,300.8028**	**0.0575**	**0.0000**	**1,302.2401**

3.21 T Phase 5 Architectural Coating - 2027

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5962	16.5962	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5962**	**16.5962**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0412	0.0240	0.2636	9.8000e-004	0.1272	7.6000e-004	0.1280	0.0338	7.0000e-004	0.0345	0.0000	88.3538	88.3538	1.9700e-003	0.0000	88.4031
Total	**0.0412**	**0.0240**	**0.2636**	**9.8000e-004**	**0.1272**	**7.6000e-004**	**0.1280**	**0.0338**	**7.0000e-004**	**0.0345**	**0.0000**	**88.3538**	**88.3538**	**1.9700e-003**	**0.0000**	**88.4031**

3.21 T Phase 5 Architectural Coating - 2027

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	26.0950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.0745	0.1176	1.9000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	16.5961	16.5961	9.1000e-004	0.0000	16.6188
Total	**26.1061**	**0.0745**	**0.1176**	**1.9000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**16.5961**	**16.5961**	**9.1000e-004**	**0.0000**	**16.6188**

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	0.0412	0.0240	0.2636	9.8000e-004	0.1272	7.6000e-004	0.1280	0.0338	7.0000e-004	0.0345	0.0000	88.3538	88.3538	1.9700e-003	0.0000	88.4031
Total	**0.0412**	**0.0240**	**0.2636**	**9.8000e-004**	**0.1272**	**7.6000e-004**	**0.1280**	**0.0338**	**7.0000e-004**	**0.0345**	**0.0000**	**88.3538**	**88.3538**	**1.9700e-003**	**0.0000**	**88.4031**

3.22 U Phase 3 Site Prep - 2028

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					0.7859	0.0000	0.7859	0.4320	0.0000	0.4320	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1076	1.0977	0.7792	1.6600e-003		0.0473	0.0473		0.0435	0.0435	0.0000	145.5814	145.5814	0.0471	0.0000	146.7585
Total	**0.1076**	**1.0977**	**0.7792**	**1.6600e-003**	**0.7859**	**0.0473**	**0.8332**	**0.4320**	**0.0435**	**0.4755**	**0.0000**	**145.5814**	**145.5814**	**0.0471**	**0.0000**	**146.7585**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9400e-003	1.1100e-003	0.0123	5.0000e-005	6.2800e-003	3.0000e-005	6.3100e-003	1.6700e-003	3.0000e-005	1.7000e-003	0.0000	4.2293	4.2293	9.0000e-005	0.0000	4.2316
Total	**1.9400e-003**	**1.1100e-003**	**0.0123**	**5.0000e-005**	**6.2800e-003**	**3.0000e-005**	**6.3100e-003**	**1.6700e-003**	**3.0000e-005**	**1.7000e-003**	**0.0000**	**4.2293**	**4.2293**	**9.0000e-005**	**0.0000**	**4.2316**

3.22 U Phase 3 Site Prep - 2028

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					0.7859	0.0000	0.7859	0.4320	0.0000	0.4320	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1076	1.0977	0.7792	1.6600e-003		0.0473	0.0473		0.0435	0.0435	0.0000	145.5812	145.5812	0.0471	0.0000	146.7583
Total	**0.1076**	**1.0977**	**0.7792**	**1.6600e-003**	**0.7859**	**0.0473**	**0.8332**	**0.4320**	**0.0435**	**0.4755**	**0.0000**	**145.5812**	**145.5812**	**0.0471**	**0.0000**	**146.7583**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9400e-003	1.1100e-003	0.0123	5.0000e-005	6.2800e-003	3.0000e-005	6.3100e-003	1.6700e-003	3.0000e-005	1.7000e-003	0.0000	4.2293	4.2293	9.0000e-005	0.0000	4.2316
Total	**1.9400e-003**	**1.1100e-003**	**0.0123**	**5.0000e-005**	**6.2800e-003**	**3.0000e-005**	**6.3100e-003**	**1.6700e-003**	**3.0000e-005**	**1.7000e-003**	**0.0000**	**4.2293**	**4.2293**	**9.0000e-005**	**0.0000**	**4.2316**

3.23 W Phase 3 Paving - 2028

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	0.0389	0.3647	0.6196	9.7000e-004		0.0178	0.0178		0.0164	0.0164	0.0000	85.0818	85.0818	0.0275	0.0000	85.7698
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.3647**	**0.6196**	**9.7000e-004**		**0.0178**	**0.0178**		**0.0164**	**0.0164**	**0.0000**	**85.0818**	**85.0818**	**0.0275**	**0.0000**	**85.7698**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5800e-003	9.1000e-004	0.0100	4.0000e-005	5.1100e-003	3.0000e-005	5.1400e-003	1.3600e-003	3.0000e-005	1.3800e-003	0.0000	3.4434	3.4434	7.0000e-005	0.0000	3.4453
Total	**1.5800e-003**	**9.1000e-004**	**0.0100**	**4.0000e-005**	**5.1100e-003**	**3.0000e-005**	**5.1400e-003**	**1.3600e-003**	**3.0000e-005**	**1.3800e-003**	**0.0000**	**3.4434**	**3.4434**	**7.0000e-005**	**0.0000**	**3.4453**

3.23 W Phase 3 Paving - 2028

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	0.0389	0.3647	0.6196	9.7000e-004		0.0178	0.0178		0.0164	0.0164	0.0000	85.0817	85.0817	0.0275	0.0000	85.7697
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0389**	**0.3647**	**0.6196**	**9.7000e-004**		**0.0178**	**0.0178**		**0.0164**	**0.0164**	**0.0000**	**85.0817**	**85.0817**	**0.0275**	**0.0000**	**85.7697**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5800e-003	9.1000e-004	0.0100	4.0000e-005	5.1100e-003	3.0000e-005	5.1400e-003	1.3600e-003	3.0000e-005	1.3800e-003	0.0000	3.4434	3.4434	7.0000e-005	0.0000	3.4453
Total	**1.5800e-003**	**9.1000e-004**	**0.0100**	**4.0000e-005**	**5.1100e-003**	**3.0000e-005**	**5.1400e-003**	**1.3600e-003**	**3.0000e-005**	**1.3800e-003**	**0.0000**	**3.4434**	**3.4434**	**7.0000e-005**	**0.0000**	**3.4453**

3.24 X Phase 3 Building Construction - 2028

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	0.0137	0.1247	0.1609	2.7000e-004		5.2800e-003	5.2800e-003		4.9600e-003	4.9600e-003	0.0000	23.1920	23.1920	5.4500e-003	0.0000	23.3282
Total	**0.0137**	**0.1247**	**0.1609**	**2.7000e-004**		**5.2800e-003**	**5.2800e-003**		**4.9600e-003**	**4.9600e-003**	**0.0000**	**23.1920**	**23.1920**	**5.4500e-003**	**0.0000**	**23.3282**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2100e-003	0.1907	0.0581	6.7000e-004	0.0178	2.1000e-004	0.0180	5.1400e-003	2.0000e-004	5.3400e-003	0.0000	65.7901	65.7901	4.3700e-003	0.0000	65.8994
Worker	0.0302	0.0173	0.1923	7.3000e-004	0.0979	5.5000e-004	0.0985	0.0260	5.0000e-004	0.0265	0.0000	65.9515	65.9515	1.4300e-003	0.0000	65.9873
Total	**0.0354**	**0.2080**	**0.2504**	**1.4000e-003**	**0.1157**	**7.6000e-004**	**0.1165**	**0.0312**	**7.0000e-004**	**0.0319**	**0.0000**	**131.7416**	**131.7416**	**5.8000e-003**	**0.0000**	**131.8866**

3.24 X Phase 3 Building Construction - 2028

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	0.0137	0.1247	0.1609	2.7000e-004		5.2800e-003	5.2800e-003		4.9600e-003	4.9600e-003	0.0000	23.1919	23.1919	5.4500e-003	0.0000	23.3282
Total	**0.0137**	**0.1247**	**0.1609**	**2.7000e-004**		**5.2800e-003**	**5.2800e-003**		**4.9600e-003**	**4.9600e-003**	**0.0000**	**23.1919**	**23.1919**	**5.4500e-003**	**0.0000**	**23.3282**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2100e-003	0.1907	0.0581	6.7000e-004	0.0178	2.1000e-004	0.0180	5.1400e-003	2.0000e-004	5.3400e-003	0.0000	65.7901	65.7901	4.3700e-003	0.0000	65.8994
Worker	0.0302	0.0173	0.1923	7.3000e-004	0.0979	5.5000e-004	0.0985	0.0260	5.0000e-004	0.0265	0.0000	65.9515	65.9515	1.4300e-003	0.0000	65.9873
Total	**0.0354**	**0.2080**	**0.2504**	**1.4000e-003**	**0.1157**	**7.6000e-004**	**0.1165**	**0.0312**	**7.0000e-004**	**0.0319**	**0.0000**	**131.7416**	**131.7416**	**5.8000e-003**	**0.0000**	**131.8866**

3.24 X Phase 3 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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	0.0668	2.4579	0.7528	8.6600e-003	0.2321	2.7300e-003	0.2349	0.0670	2.6100e-003	0.0696	0.0000	854.8138	854.8138	0.0567	0.0000	856.2315
Worker	0.3729	0.2123	2.3772	9.2500e-003	1.2778	6.6000e-003	1.2844	0.3395	6.0800e-003	0.3456	0.0000	836.9331	836.9331	0.0176	0.0000	837.3732
Total	**0.4397**	**2.6702**	**3.1300**	**0.0179**	**1.5099**	**9.3300e-003**	**1.5192**	**0.4066**	**8.6900e-003**	**0.4153**	**0.0000**	**1,691.7469**	**1,691.7469**	**0.0743**	**0.0000**	**1,693.6047**

3.24 X Phase 3 Building Construction - 2029

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	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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	0.0668	2.4579	0.7528	8.6600e-003	0.2321	2.7300e-003	0.2349	0.0670	2.6100e-003	0.0696	0.0000	854.8138	854.8138	0.0567	0.0000	856.2315
Worker	0.3729	0.2123	2.3772	9.2500e-003	1.2778	6.6000e-003	1.2844	0.3395	6.0800e-003	0.3456	0.0000	836.9331	836.9331	0.0176	0.0000	837.3732
Total	**0.4397**	**2.6702**	**3.1300**	**0.0179**	**1.5099**	**9.3300e-003**	**1.5192**	**0.4066**	**8.6900e-003**	**0.4153**	**0.0000**	**1,691.7469**	**1,691.7469**	**0.0743**	**0.0000**	**1,693.6047**

3.24 X Phase 3 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0164	0.0992	0.2020	3.9000e-004		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	32.8576	32.8576	1.3200e-003	0.0000	32.8906
Total	**0.0164**	**0.0992**	**0.2020**	**3.9000e-004**		**1.8500e-003**	**1.8500e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**32.8576**	**32.8576**	**1.3200e-003**	**0.0000**	**32.8906**

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	6.3100e-003	0.2330	0.0718	8.3000e-004	0.0222	2.6000e-004	0.0225	6.4200e-003	2.4000e-004	6.6600e-003	0.0000	81.5866	81.5866	5.4000e-003	0.0000	81.7217
Worker	0.0335	0.0190	0.2157	8.6000e-004	0.1224	5.9000e-004	0.1230	0.0325	5.4000e-004	0.0331	0.0000	78.1671	78.1671	1.5900e-003	0.0000	78.2069
Total	**0.0398**	**0.2520**	**0.2875**	**1.6900e-003**	**0.1446**	**8.5000e-004**	**0.1455**	**0.0389**	**7.8000e-004**	**0.0397**	**0.0000**	**159.7537**	**159.7537**	**6.9900e-003**	**0.0000**	**159.9286**

3.24 X Phase 3 Building Construction - 2030

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	0.0164	0.0992	0.2020	3.9000e-004		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	32.8576	32.8576	1.3200e-003	0.0000	32.8905
Total	**0.0164**	**0.0992**	**0.2020**	**3.9000e-004**		**1.8500e-003**	**1.8500e-003**		**1.8500e-003**	**1.8500e-003**	**0.0000**	**32.8576**	**32.8576**	**1.3200e-003**	**0.0000**	**32.8905**

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	6.3100e-003	0.2330	0.0718	8.3000e-004	0.0222	2.6000e-004	0.0225	6.4200e-003	2.4000e-004	6.6600e-003	0.0000	81.5866	81.5866	5.4000e-003	0.0000	81.7217
Worker	0.0335	0.0190	0.2157	8.6000e-004	0.1224	5.9000e-004	0.1230	0.0325	5.4000e-004	0.0331	0.0000	78.1671	78.1671	1.5900e-003	0.0000	78.2069
Total	**0.0398**	**0.2520**	**0.2875**	**1.6900e-003**	**0.1446**	**8.5000e-004**	**0.1455**	**0.0389**	**7.8000e-004**	**0.0397**	**0.0000**	**159.7537**	**159.7537**	**6.9900e-003**	**0.0000**	**159.9286**

3.25 Y Phase 3 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	23.0747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1094	0.1728	2.8000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	24.3836	24.3836	1.3300e-003	0.0000	24.4168
Total	**23.0911**	**0.1094**	**0.1728**	**2.8000e-004**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**24.3836**	**24.3836**	**1.3300e-003**	**0.0000**	**24.4168**

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	0.0545	0.0310	0.3476	1.3500e-003	0.1869	9.7000e-004	0.1878	0.0497	8.9000e-004	0.0505	0.0000	122.3933	122.3933	2.5700e-003	0.0000	122.4577
Total	**0.0545**	**0.0310**	**0.3476**	**1.3500e-003**	**0.1869**	**9.7000e-004**	**0.1878**	**0.0497**	**8.9000e-004**	**0.0505**	**0.0000**	**122.3933**	**122.3933**	**2.5700e-003**	**0.0000**	**122.4577**

3.25 Y Phase 3 Architectural Coating - 2029

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	23.0747					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1094	0.1728	2.8000e-004		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	24.3835	24.3835	1.3300e-003	0.0000	24.4168
Total	**23.0911**	**0.1094**	**0.1728**	**2.8000e-004**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**24.3835**	**24.3835**	**1.3300e-003**	**0.0000**	**24.4168**

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	0.0545	0.0310	0.3476	1.3500e-003	0.1869	9.7000e-004	0.1878	0.0497	8.9000e-004	0.0505	0.0000	122.3933	122.3933	2.5700e-003	0.0000	122.4577
Total	**0.0545**	**0.0310**	**0.3476**	**1.3500e-003**	**0.1869**	**9.7000e-004**	**0.1878**	**0.0497**	**8.9000e-004**	**0.0505**	**0.0000**	**122.3933**	**122.3933**	**2.5700e-003**	**0.0000**	**122.4577**

3.25 Y Phase 3 Architectural Coating - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0203					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0107	0.0225	4.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.1916	3.1916	1.3000e-004	0.0000	3.1948
Total	**3.0219**	**0.0107**	**0.0225**	**4.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.3000e-004**	**0.0000**	**3.1948**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6900e-003	3.8000e-003	0.0431	1.7000e-004	0.0245	1.2000e-004	0.0246	6.5000e-003	1.1000e-004	6.6100e-003	0.0000	15.6206	15.6206	3.2000e-004	0.0000	15.6286
Total	**6.6900e-003**	**3.8000e-003**	**0.0431**	**1.7000e-004**	**0.0245**	**1.2000e-004**	**0.0246**	**6.5000e-003**	**1.1000e-004**	**6.6100e-003**	**0.0000**	**15.6206**	**15.6206**	**3.2000e-004**	**0.0000**	**15.6286**

3.25 Y Phase 3 Architectural Coating - 2030

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	3.0203					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0107	0.0225	4.0000e-005		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	3.1916	3.1916	1.3000e-004	0.0000	3.1948
Total	**3.0219**	**0.0107**	**0.0225**	**4.0000e-005**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.3000e-004**	**0.0000**	**3.1948**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6900e-003	3.8000e-003	0.0431	1.7000e-004	0.0245	1.2000e-004	0.0246	6.5000e-003	1.1000e-004	6.6100e-003	0.0000	15.6206	15.6206	3.2000e-004	0.0000	15.6286
Total	**6.6900e-003**	**3.8000e-003**	**0.0431**	**1.7000e-004**	**0.0245**	**1.2000e-004**	**0.0246**	**6.5000e-003**	**1.1000e-004**	**6.6100e-003**	**0.0000**	**15.6206**	**15.6206**	**3.2000e-004**	**0.0000**	**15.6286**

3.26 V Phase 3 Grading - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2819	0.0000	0.2819	0.1169	0.0000	0.1169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	0.9081	0.8558	2.0200e-003		0.0368	0.0368		0.0338	0.0338	0.0000	177.1452	177.1452	0.0573	0.0000	178.5775
Total	**0.0943**	**0.9081**	**0.8558**	**2.0200e-003**	**0.2819**	**0.0368**	**0.3186**	**0.1169**	**0.0338**	**0.1507**	**0.0000**	**177.1452**	**177.1452**	**0.0573**	**0.0000**	**178.5775**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	8.7000e-004	9.7000e-003	4.0000e-005	5.2100e-003	3.0000e-005	5.2400e-003	1.3900e-003	2.0000e-005	1.4100e-003	0.0000	3.4141	3.4141	7.0000e-005	0.0000	3.4159
Total	**1.5200e-003**	**8.7000e-004**	**9.7000e-003**	**4.0000e-005**	**5.2100e-003**	**3.0000e-005**	**5.2400e-003**	**1.3900e-003**	**2.0000e-005**	**1.4100e-003**	**0.0000**	**3.4141**	**3.4141**	**7.0000e-005**	**0.0000**	**3.4159**

3.26 V Phase 3 Grading - 2029

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					0.2819	0.0000	0.2819	0.1169	0.0000	0.1169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	0.9081	0.8558	2.0200e-003		0.0368	0.0368		0.0338	0.0338	0.0000	177.1450	177.1450	0.0573	0.0000	178.5773
Total	**0.0943**	**0.9081**	**0.8558**	**2.0200e-003**	**0.2819**	**0.0368**	**0.3186**	**0.1169**	**0.0338**	**0.1507**	**0.0000**	**177.1450**	**177.1450**	**0.0573**	**0.0000**	**178.5773**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5200e-003	8.7000e-004	9.7000e-003	4.0000e-005	5.2100e-003	3.0000e-005	5.2400e-003	1.3900e-003	2.0000e-005	1.4100e-003	0.0000	3.4141	3.4141	7.0000e-005	0.0000	3.4159
Total	**1.5200e-003**	**8.7000e-004**	**9.7000e-003**	**4.0000e-005**	**5.2100e-003**	**3.0000e-005**	**5.2400e-003**	**1.3900e-003**	**2.0000e-005**	**1.4100e-003**	**0.0000**	**3.4141**	**3.4141**	**7.0000e-005**	**0.0000**	**3.4159**

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	4.4938	19.6070	60.5568	0.2605	29.6220	0.1659	29.7879	7.9296	0.1542	8.0838	0.0000	24,206.9442	24,206.9442	1.1309	0.0000	24,235.2154
Unmitigated	4.4938	19.6070	60.5568	0.2605	29.6220	0.1659	29.7879	7.9296	0.1542	8.0838	0.0000	24,206.9442	24,206.9442	1.1309	0.0000	24,235.2154

4.2 Trip Summary Information

Lilac Hills Ranch - Buildout 2030 - With Design Features - San Diego County, Annual

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	119.00	119.00	119.00	399,374	399,374
Condo/Townhouse	2,250.00	2,250.00	2250.00	9,778,860	9,778,860
Congregate Care (Assisted Living)	500.00	500.00	500.00	2,169,440	2,169,440
Elementary School	908.80	908.80	908.80	3,050,006	3,050,006
Hotel	450.00	450.00	450.00	1,510,236	1,510,236
Junior High School	184.80	184.80	184.80	620,204	620,204
Office Park	399.00	399.00	399.00	1,339,076	1,339,076
Place of Worship	300.03	300.03	300.03	1,006,918	1,006,918
Retirement Community	1,872.00	1,872.00	1872.00	8,129,197	8,129,197
Single Family Housing	9,030.00	9,030.00	9030.00	39,245,825	39,245,825
Strip Mall	2,460.00	2,460.00	2460.00	8,255,957	8,255,957
User Defined Industrial	14.40	14.40	14.40	48,328	48,328
User Defined Industrial	3.60	3.60	3.60	12,082	12,082
User Defined Recreational	915.20	915.20	915.20	3,071,484	3,071,484
Total	19,406.83	19,406.83	19,406.83	78,636,985	78,636,985

4.3 Trip Type Information

Lilac Hills Ranch - Buildout 2030 - With Design Features - San Diego County, Annual

	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
City Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Condo/Townhouse	11.94	0.00	0.00	100.00	0.00	0.00	100	0	0
Congregate Care (Assisted	11.92	0.00	0.00	100.00	0.00	0.00	100	0	0
Elementary School	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Hotel	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Junior High School	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Place of Worship	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Retirement Community	11.93	0.00	0.00	100.00	0.00	0.00	100	0	0
Single Family Housing	11.94	0.00	0.00	100.00	0.00	0.00	100	0	0
Strip Mall	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
User Defined Industrial	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
User Defined Industrial	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
User Defined Recreational	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	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
Condo/Townhouse	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
Congregate Care (Assisted Living)	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
Elementary School	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
Hotel	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
Junior High School	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
Office Park	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
Place of Worship	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
Retirement Community	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
Single Family Housing	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
Strip Mall	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
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
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
User Defined Recreational	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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	2,472.6106	2,472.6106	0.0983	0.0184	2,480.5596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,472.6106	2,472.6106	0.0983	0.0184	2,480.5596
NaturalGas Mitigated	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	1,988.4457	1,988.4457	0.0381	0.0365	2,000.2620
NaturalGas Unmitigated	0.2009	1.7358	0.8689	0.0110		0.1388	0.1388		0.1388	0.1388	0.0000	1,988.4457	1,988.4457	0.0381	0.0365	2,000.2620

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					
City Park	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
Condo/Townhouse	5.03364e+006	0.0271	0.2319	0.0987	1.4800e-003		0.0188	0.0188		0.0188	0.0188	0.0000	268.6144	268.6144	5.1500e-003	4.9200e-003	270.2106
Congregate Care (Assisted Living)	1.77359e+006	9.5600e-003	0.0817	0.0348	5.2000e-004		6.6100e-003	6.6100e-003		6.6100e-003	6.6100e-003	0.0000	94.6453	94.6453	1.8100e-003	1.7400e-003	95.2077
Elementary School	282071	1.5200e-003	0.0138	0.0116	8.0000e-005		1.0500e-003	1.0500e-003		1.0500e-003	1.0500e-003	0.0000	15.0524	15.0524	2.9000e-004	2.8000e-004	15.1418
Hotel	4.25509e+006	0.0229	0.2086	0.1752	1.2500e-003		0.0159	0.0159		0.0159	0.0159	0.0000	227.0676	227.0676	4.3500e-003	4.1600e-003	228.4169
Junior High School	92177.8	5.0000e-004	4.5200e-003	3.8000e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9190	4.9190	9.0000e-005	9.0000e-005	4.9482
Office Park	925395	4.9900e-003	0.0454	0.0381	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.3826	49.3826	9.5000e-004	9.1000e-004	49.6761
Place of Worship	124013	6.7000e-004	6.0800e-003	5.1100e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6178	6.6178	1.3000e-004	1.2000e-004	6.6571
Retirement Community	7.28034e+006	0.0393	0.3355	0.1428	2.1400e-003		0.0271	0.0271		0.0271	0.0271	0.0000	388.5069	388.5069	7.4500e-003	7.1200e-003	390.8156
Single Family Housing	1.67647e+007	0.0904	0.7725	0.3287	4.9300e-003		0.0625	0.0625		0.0625	0.0625	0.0000	894.6283	894.6283	0.0172	0.0164	899.9446
Strip Mall	137760	7.4000e-004	6.7500e-003	5.6700e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3514	7.3514	1.4000e-004	1.3000e-004	7.3951
User Defined Industrial	118657	6.4000e-004	5.8200e-003	4.8900e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3320	6.3320	1.2000e-004	1.2000e-004	6.3696
User Defined Industrial	474630	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3281	25.3281	4.9000e-004	4.6000e-004	25.4786
User Defined Recreational	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		**0.2009**	**1.7358**	**0.8689**	**0.0110**		**0.1388**	**0.1388**		**0.1388**	**0.1388**	**0.0000**	**1,988.4457**	**1,988.4457**	**0.0381**	**0.0365**	**2,000.2620**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	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
Condo/Townhouse	5.03364e+006	0.0271	0.2319	0.0987	1.4800e-003		0.0188	0.0188		0.0188	0.0188	0.0000	268.6144	268.6144	5.1500e-003	4.9200e-003	270.2106
Congregate Care (Assisted Living)	1.77359e+006	9.5600e-003	0.0817	0.0348	5.2000e-004		6.6100e-003	6.6100e-003		6.6100e-003	6.6100e-003	0.0000	94.6453	94.6453	1.8100e-003	1.7400e-003	95.2077
Elementary School	282071	1.5200e-003	0.0138	0.0116	8.0000e-005		1.0500e-003	1.0500e-003		1.0500e-003	1.0500e-003	0.0000	15.0524	15.0524	2.9000e-004	2.8000e-004	15.1418
Hotel	4.25509e+006	0.0229	0.2086	0.1752	1.2500e-003		0.0159	0.0159		0.0159	0.0159	0.0000	227.0676	227.0676	4.3500e-003	4.1600e-003	228.4169
Junior High School	92177.8	5.0000e-004	4.5200e-003	3.8000e-003	3.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	4.9190	4.9190	9.0000e-005	9.0000e-005	4.9482
Office Park	925395	4.9900e-003	0.0454	0.0381	2.7000e-004		3.4500e-003	3.4500e-003		3.4500e-003	3.4500e-003	0.0000	49.3826	49.3826	9.5000e-004	9.1000e-004	49.6761
Place of Worship	124013	6.7000e-004	6.0800e-003	5.1100e-003	4.0000e-005		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	6.6178	6.6178	1.3000e-004	1.2000e-004	6.6571
Retirement Community	7.28034e+006	0.0393	0.3355	0.1428	2.1400e-003		0.0271	0.0271		0.0271	0.0271	0.0000	388.5069	388.5069	7.4500e-003	7.1200e-003	390.8156
Single Family Housing	1.67647e+007	0.0904	0.7725	0.3287	4.9300e-003		0.0625	0.0625		0.0625	0.0625	0.0000	894.6283	894.6283	0.0172	0.0164	899.9446
Strip Mall	137760	7.4000e-004	6.7500e-003	5.6700e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.3514	7.3514	1.4000e-004	1.3000e-004	7.3951
User Defined Industrial	118657	6.4000e-004	5.8200e-003	4.8900e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3320	6.3320	1.2000e-004	1.2000e-004	6.3696
User Defined Industrial	474630	2.5600e-003	0.0233	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.3281	25.3281	4.9000e-004	4.6000e-004	25.4786
User Defined Recreational	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		**0.2009**	**1.7358**	**0.8689**	**0.0110**		**0.1388**	**0.1388**		**0.1388**	**0.1388**	**0.0000**	**1,988.4457**	**1,988.4457**	**0.0381**	**0.0365**	**2,000.2620**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.83016e+006	334.1419	0.0133	2.4900e-003	335.2161
Congregate Care (Assisted Living)	754228	137.7035	5.4700e-003	1.0300e-003	138.1462
Elementary School	171427	31.2984	1.2400e-003	2.3000e-004	31.3990
Hotel	728904	133.0800	5.2900e-003	9.9000e-004	133.5078
Junior High School	56020.5	10.2280	4.1000e-004	8.0000e-005	10.2609
Office Park	377340	68.8930	2.7400e-003	5.1000e-004	69.1145
Place of Worship	69550	12.6981	5.0000e-004	9.0000e-005	12.7390
Retirement Community	2.71796e+006	496.2322	0.0197	3.7000e-003	497.8275
Single Family Housing	5.6922e+006	1,039.2553	0.0413	7.7500e-003	1,042.5964
Strip Mall	527055	96.2273	3.8300e-003	7.2000e-004	96.5367
User Defined Industrial	123623	22.5706	9.0000e-004	1.7000e-004	22.6431
User Defined Industrial	494493	90.2823	3.5900e-003	6.7000e-004	90.5726
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**2,472.6106**	**0.0983**	**0.0184**	**2,480.5596**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.83016e+006	334.1419	0.0133	2.4900e-003	335.2161
Congregate Care (Assisted Living)	754228	137.7035	5.4700e-003	1.0300e-003	138.1462
Elementary School	171427	31.2984	1.2400e-003	2.3000e-004	31.3990
Hotel	728904	133.0800	5.2900e-003	9.9000e-004	133.5078
Junior High School	56020.5	10.2280	4.1000e-004	8.0000e-005	10.2609
Office Park	377340	68.8930	2.7400e-003	5.1000e-004	69.1145
Place of Worship	69550	12.6981	5.0000e-004	9.0000e-005	12.7390
Retirement Community	2.71796e+006	496.2322	0.0197	3.7000e-003	497.8275
Single Family Housing	5.6922e+006	1,039.2553	0.0413	7.7500e-003	1,042.5964
Strip Mall	527055	96.2273	3.8300e-003	7.2000e-004	96.5367
User Defined Industrial	123623	22.5706	9.0000e-004	1.7000e-004	22.6431
User Defined Industrial	494493	90.2823	3.5900e-003	6.7000e-004	90.5726
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**2,472.6106**	**0.0983**	**0.0184**	**2,480.5596**

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	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Unmitigated	14.2711	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823

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	2.6095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.2298					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	0.4318	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Total	**14.2711**	**0.1662**	**14.4195**	**7.6000e-004**		**0.0802**	**0.0802**		**0.0802**	**0.0802**	**0.0000**	**23.6190**	**23.6190**	**0.0225**	**0.0000**	**24.1823**

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	2.6095					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.2298					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	0.4318	0.1662	14.4195	7.6000e-004		0.0802	0.0802		0.0802	0.0802	0.0000	23.6190	23.6190	0.0225	0.0000	24.1823
Total	**14.2711**	**0.1662**	**14.4195**	**7.6000e-004**		**0.0802**	**0.0802**		**0.0802**	**0.0802**	**0.0000**	**23.6190**	**23.6190**	**0.0225**	**0.0000**	**24.1823**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	681.3827	3.1263	0.0781	782.8025
Unmitigated	681.3827	3.1263	0.0781	782.8025

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 48.0269	97.4184	3.8700e-003	7.3000e-004	97.7316
Condo/Townhouse	6.50544 / 26.0875	70.4456	0.2147	5.5100e-003	77.4566
Congregate Care (Assisted Living)	3.46957 / 13.9133	37.5710	0.1145	2.9400e-003	41.3102
Elementary School	0.36663 / 5.99679	13.1519	0.0125	3.8000e-004	13.5765
Hotel	0.337706 / 0.238678	1.3941	0.0111	2.7000e-004	1.7508
Junior High School	0.0852027 / 1.39362	3.0564	2.9000e-003	9.0000e-005	3.1551
Office Park	1.34871 / 5.25808	14.2998	0.0445	1.1400e-003	15.7523
Place of Worship	0.0891411 / 0.886869	2.0391	2.9800e-003	8.0000e-005	2.1387
Retirement Community	8.11879 / 32.5572	87.9162	0.2679	6.8800e-003	96.6658
Single Family Housing	15.6651 / 62.8188	169.6331	0.5170	0.0133	186.5154
Strip Mall	1.21293 / 4.72873	12.8601	0.0400	1.0300e-003	14.1664
User Defined Industrial	23.602 / 7.61595	79.0456	0.7719	0.0187	103.9139
User Defined Recreational	34.3474 / 0	92.5514	1.1225	0.0270	128.6694
Total		**681.3827**	**3.1263**	**0.0781**	**782.8025**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 48.0269	97.4184	3.8700e-003	7.3000e-004	97.7316
Condo/Townhouse	6.50544 / 26.0875	70.4456	0.2147	5.5100e-003	77.4566
Congregate Care (Assisted Living)	3.46957 / 13.9133	37.5710	0.1145	2.9400e-003	41.3102
Elementary School	0.36663 / 5.99679	13.1519	0.0125	3.8000e-004	13.5765
Hotel	0.337706 / 0.238678	1.3941	0.0111	2.7000e-004	1.7508
Junior High School	0.0852027 / 1.39362	3.0564	2.9000e-003	9.0000e-005	3.1551
Office Park	1.34871 / 5.25808	14.2998	0.0445	1.1400e-003	15.7523
Place of Worship	0.0891411 / 0.886869	2.0391	2.9800e-003	8.0000e-005	2.1387
Retirement Community	8.11879 / 32.5572	87.9162	0.2679	6.8800e-003	96.6658
Single Family Housing	15.6651 / 62.8188	169.6331	0.5170	0.0133	186.5154
Strip Mall	1.21293 / 4.72873	12.8601	0.0400	1.0300e-003	14.1664
User Defined Industrial	23.602 / 7.61595	79.0456	0.7719	0.0187	103.9139
User Defined Recreational	34.3474 / 0	92.5514	1.1225	0.0270	128.6694
Total		**681.3827**	**3.1263**	**0.0781**	**782.8025**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	391.8238	23.1561	0.0000	970.7269
Unmitigated	522.4318	30.8748	0.0000	1,294.3026

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	2.05	0.4161	0.0246	0.0000	1.0310
Condo/Townhouse	172.5	35.0159	2.0694	0.0000	86.7505
Congregate Care (Assisted Living)	182.5	37.0459	2.1894	0.0000	91.7795
Elementary School	103.66	21.0420	1.2436	0.0000	52.1308
Hotel	27.38	5.5579	0.3285	0.0000	13.7694
Junior High School	24.09	4.8901	0.2890	0.0000	12.1149
Office Park	26.51	5.3813	0.3180	0.0000	13.3319
Place of Worship	60.99	12.3804	0.7317	0.0000	30.6720
Retirement Community	215.28	43.6999	2.5826	0.0000	108.2646
Single Family Housing	1059.03	214.9735	12.7046	0.0000	532.5878
Strip Mall	64.58	13.1092	0.7747	0.0000	32.4774
User Defined Industrial	508.1	103.1397	6.0954	0.0000	255.5243
User Defined Recreational	127	25.7799	1.5236	0.0000	63.8685
Total		**522.4317**	**30.8748**	**0.0000**	**1,294.3026**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	1.5375	0.3121	0.0184	0.0000	0.7732
Condo/Townhouse	129.375	26.2620	1.5520	0.0000	65.0629
Congregate Care (Assisted Living)	136.875	27.7844	1.6420	0.0000	68.8347
Elementary School	77.745	15.7815	0.9327	0.0000	39.0981
Hotel	20.535	4.1684	0.2464	0.0000	10.3271
Junior High School	18.0675	3.6675	0.2168	0.0000	9.0862
Office Park	19.8825	4.0360	0.2385	0.0000	9.9989
Place of Worship	45.7425	9.2853	0.5488	0.0000	23.0040
Retirement Community	161.46	32.7749	1.9369	0.0000	81.1985
Single Family Housing	794.273	161.2301	9.5284	0.0000	399.4409
Strip Mall	48.435	9.8319	0.5811	0.0000	24.3580
User Defined Industrial	381.075	77.3548	4.5715	0.0000	191.6432
User Defined Recreational	95.25	19.3349	1.1427	0.0000	47.9014
Total		**391.8238**	**23.1561**	**0.0000**	**970.7269**

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	18,892.2680	0.0000	0.0000	18,892.2680

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	113.7 / 21.2	-573.5000	0.0000	0.0000	-573.5000
Cropland	125.6 / 113.7	-73.7800	0.0000	0.0000	-73.7800
Cropland	147.3 / 125.6	-134.5400	0.0000	0.0000	-134.5400
Cropland	161.8 / 147.3	-89.9000	0.0000	0.0000	-89.9000
Cropland	170.1 / 161.8	-51.4600	0.0000	0.0000	-51.4600
Scrub	279.3 / 126.6	-2,183.6100	0.0000	0.0000	-2,183.6100
Scrub	337 / 279.3	-825.1100	0.0000	0.0000	-825.1100
Scrub	436.7 / 337	-1,425.7100	0.0000	0.0000	-1,425.7100
Scrub	85.6 / 82.3	-47.1900	0.0000	0.0000	-47.1900
Scrub	126.6 / 85.6	-586.3000	0.0000	0.0000	-586.3000
Total		**-5,991.1000**	**0.0000**	**0.0000**	**-5,991.1000**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	35146	24,883.3680	0.0000	0.0000	24,883.3680
Total		**24,883.3680**	**0.0000**	**0.0000**	**24,883.3680**

ATTACHMENT C:

Project Year 2030

Vehicle Miles Travelled

Analysis

MEMORANDUM

To:	Jon Rilling Lilac Hills Ranch	Date:	August 10, 2017
From:	John Boarman, P.E. KC Yellapu, P.E LLG, Engineers	LLG Ref:	3-17-2714
Subject:	Lilac Hills Ranch Project VMT		

LINSCOTT LAW & GREENSPAN engineers

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Parking

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Providing Mobility Solutions for 50 YEARS 1966-2016

Linscott, Law and Greenspan, Engineers (LLG) has prepared this memorandum to summarize the calculation of the Lilac Hills Ranch Project's ("Project") total Vehicle Miles Travelled ("VMT"). The calculations include Project daily VMT ("DVMT"), annual VMT ("AVMT"), residential and non-residential VMT, and average trip lengths.

VEHICLE MILES TRAVELLED

The project VMT was calculated under three (3) different scenarios: Year 2020, Year 2030, and Year 2050. The source of the data used in the calculations is SANDAG, and the data was obtained from three SANDAG model runs completed for each respective study year (Series 12 - Year 2020, Year 2030, and Year 2050). The results of the calculations, which are depicted as daily VMT (DVMT), are shown in ***Table 1***. The SANDAG model documentation is attached as ***Attachment A***.

As shown on Table 1, separate DVMT for weekday and weekend conditions are shown. Since the project will generate a different amount of traffic on weekends, versus weekdays, the total DVMT was divided into weekday and weekend VMT to improve the accuracy of the VMT forecast. The weekend project trip generation was calculated to be 87.14% of the weekday trip generation. This percentage was used to calculate the weekend VMT. ***Attachment B*** shows the weekend trip generation and indicates the comparison to the weekday trip generation.

As shown on Table 1, the weekday/weekend DVMT for Years 2020, 2030, and 2050 are 246,870/215,122, 243,254/211,979, and 71,055/61,917, respectively.

Table 1 also shows the Annual Vehicle Miles Travelled (AVMT). The AVMT was calculated by multiplying the daily weekday and weekend VMT amounts by their respective number of days in a year. The AVMT for Years 2020, 2030, and 2050, is as follows:

Year 2020:
AVMT = (246,870 * 262) + (215,122 * 103) = 86,837,506

Year 2030:
AVMT = (243,254 * 262 days) + (211,979 * 103 days) = 85,566,385

Year 2050:
AVMT = (71,055 * 262) + (61,917 * 103) = 24,993,861

RESIDENTIAL VS. NON-RESIDENTIAL VMT

Tables 2.1-2.3 show the project's daily and annual VMT segregated by residential and non-residential land uses for the three (3) study years. Based on the results of a SANDAG model run, 75.43% of the DVMT is generated by residential uses. Using this percentage split, the Year 2030 weekday daily VMT was calculated to be 183,486 (243,254*.7543) for the project's residential land uses, and 59,768 (243,254*.2457) for the project's non-residential land uses. To determine the weekend Year 2030 daily VMT, the 87.14% factor discussed in the previous section was applied to the daily weekday VMT. Identical calculations were made for study years 2020 and 2050.

TRIP LENGTH

The Year 2020, Year 2030, and Year 2050 SANDAG traffic models were utilized to determine the residential, non-residential, and combined residential/non-residential project trip lengths for each year. The results are shown in *Table 1*. Based on the SANDAG traffic model run results, a combined project trip length of 12.80 miles was calculated for Year 2020, 12.57 was calculated for Year 2030, and 7.60 miles was calculated for 2050, showing a consistent downward trend in trip length from 2020 to 2050.

(Note: The Year 2050 trip length was obtained from Table 4.12 of Lilac Hills Ranch traffic study.)

TRANSPORTATION DEMAND MANAGEMENT

The Project includes implementation of a Transportation Demand Management (TDM) Program, a copy of which is included as an Appendix to the GHG Report. The TDM Program will be implemented upon occupancy of the Project, and the Program is calculated to result in an overall VMT reduction of 8.1%. This percentage reduction would result in the following adjusted Annual VMT for Years 2020, 2030, and 2050: 2020 (79,803,668); 2030 (78,635,508); 2050 (22,696,358).

CONCLUSION

This memorandum was prepared to calculate and compare the project's total Year 2020, Year 2030 and Year 2050 project trip lengths, and based on LLG's assessment and as shown in Table 4.12 of Appendix E (Traffic Impact Study, Chen Ryan 2015), the project shows a downward reduction over time in trip length and vehicle distances traveled. The downward trend is the result, in part, of more land uses being completed within the project that allows for shorter trips (such as non-residential uses being built that result in residential project trips not having to drive as far), and more transportation networks being completed that results in shortening individual trips. In year 2020, project trip length was calculated to be 12.8 miles, in year 2030 the project trip length was 12.6, and by 2050 it had decreased substantially to 7.6 miles, which is over a half-mile lower than the rest of the Valley Center community, both with and without the construction of Road 3.

TABLE 1
LILAC HILLS RANCH PROJECT VMT

	Weekday DVMT	Weekend DVMT [c]	Unmitigated AVMT[a]	Residential Land Uses Average Trip Length (miles)	Non-Residential Land Uses Average Trip Length (miles)	Total Project Combined (Res & Non-Res) Average Trip Length (miles)
Year 2020	246,870	215,122	86,837,506	13.57	10.77	12.80
Year 2030	243,254	211,979	85,566,385	13.39	10.59	12.57
Year 2050[b]	71,055 [b]	61,917	24,993,861	N/A	N/A	7.60[a]

Footnote s:
a. See memo for explanation of how AVMT is calculated.
b. Source: Table 4.12, Lilac Hills Ranch TIS, Chen Ryan July 2015.
c. Weekend project trip generation is calculated to be 87.14% of weekday trip generation and the trip lengths were assumed to be the same as the weekday since weekend trip lengths are not available.

General:
DVMT – Daily Vehicle Miles Travelled.
AVMT – Annual Vehicle Miles Travelled.

TABLE 2.1
LILAC HILLS RANCH YEAR 2020 PROJECT VMT
Residential / Non-Residential Segregation

		Weekday DVMT	Weekend DVMT**	Unmitigated AVMT
Year 2020	**Residential**	186,214*	162,273	65,502,187
	Non-Residential	60,656	52,858	21,336,246
	Total	246,870	215,131	86,838,433

*SANDAG Model run shows that 75.43% of VMT is generated by residential uses.
** See Footnote C of Table 1.

TABLE 2.2
LILAC HILLS RANCH YEAR 2030 PROJECT VMT
Residential / Non-Residential Segregation

		Weekday DVMT	Weekend DVMT**	Unmitigated AVMT
Year 2030	Residential	183,486*	159,895	64,542,517
	Non-Residential	59,768	52,084	21,023,868
	Total	243,254	211,979	85,566,385

*SANDAG Model run shows that 75.43% of VMT is generated by residential uses.
** See Footnote C of Table 1.

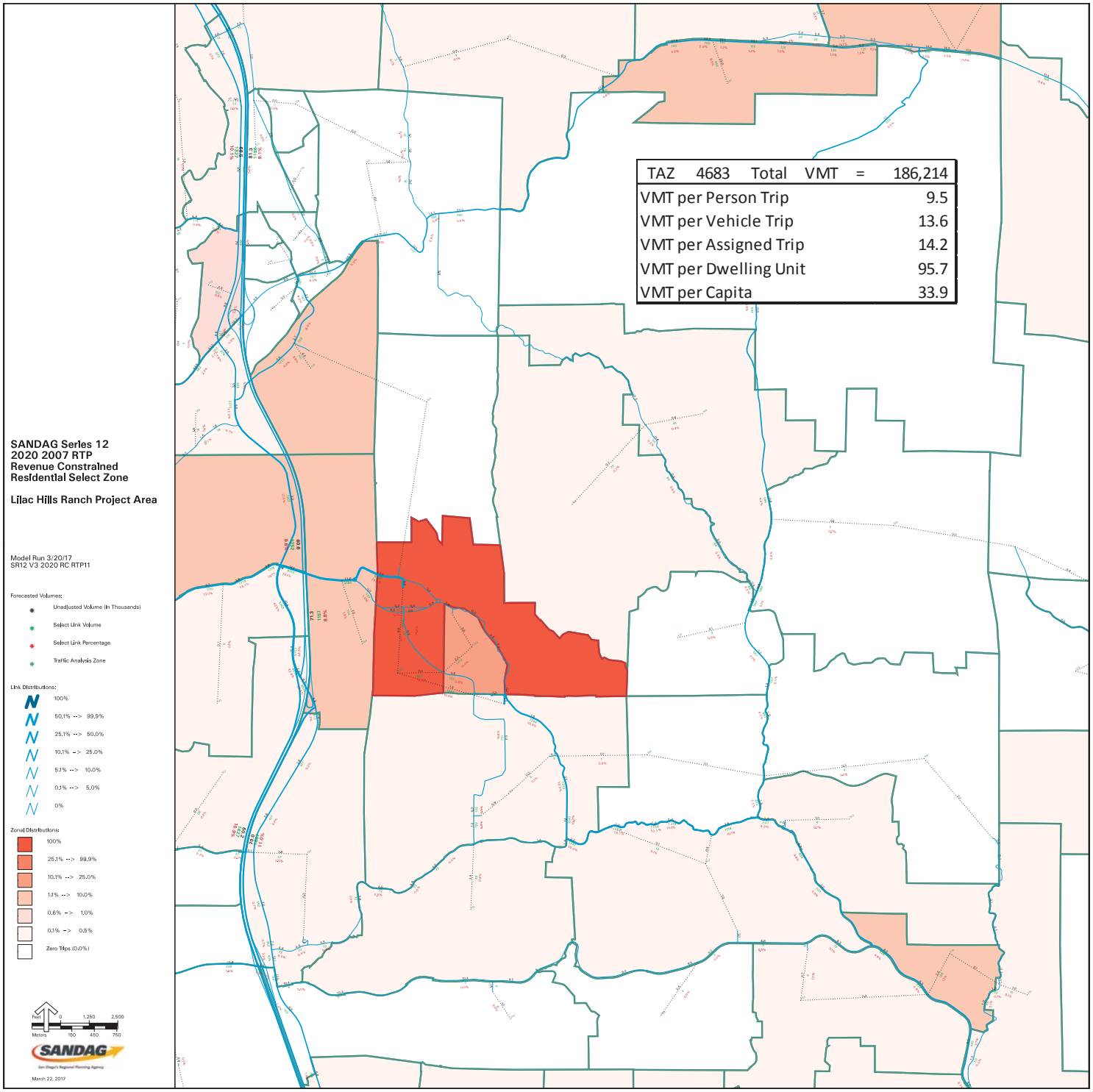
TABLE 2.3
LILAC HILLS RANCH YEAR 2050 PROJECT VMT
Residential / Non-Residential Segregation

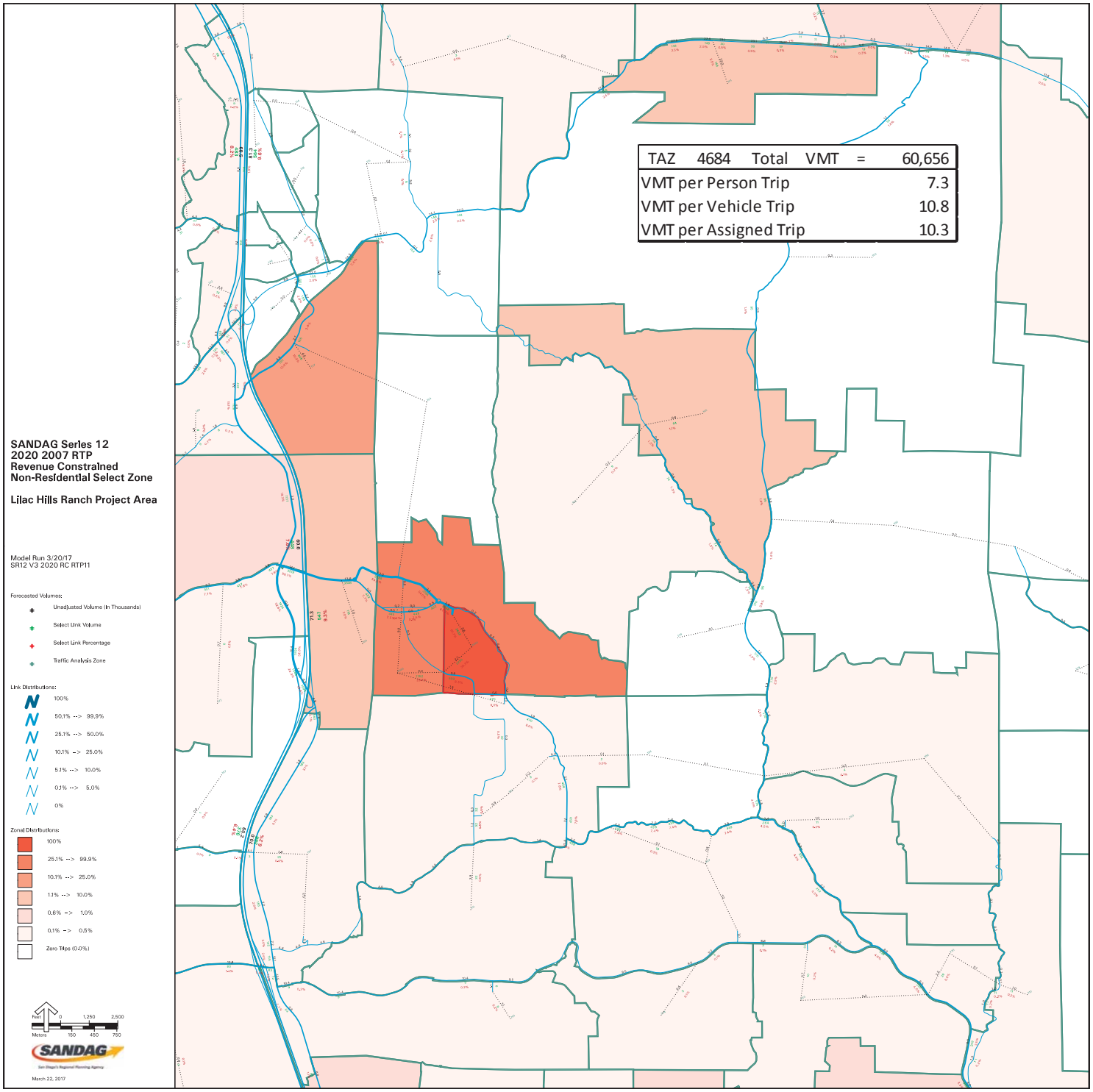
		Weekday DVMT	Weekend DVMT**	Unmitigated AVMT
Year 2050	Residential	53,597*	46,706	18,853,132
	Non-Residential	17,458	15,214	6,141,038
	Total	71,055	61,920	24,994,170

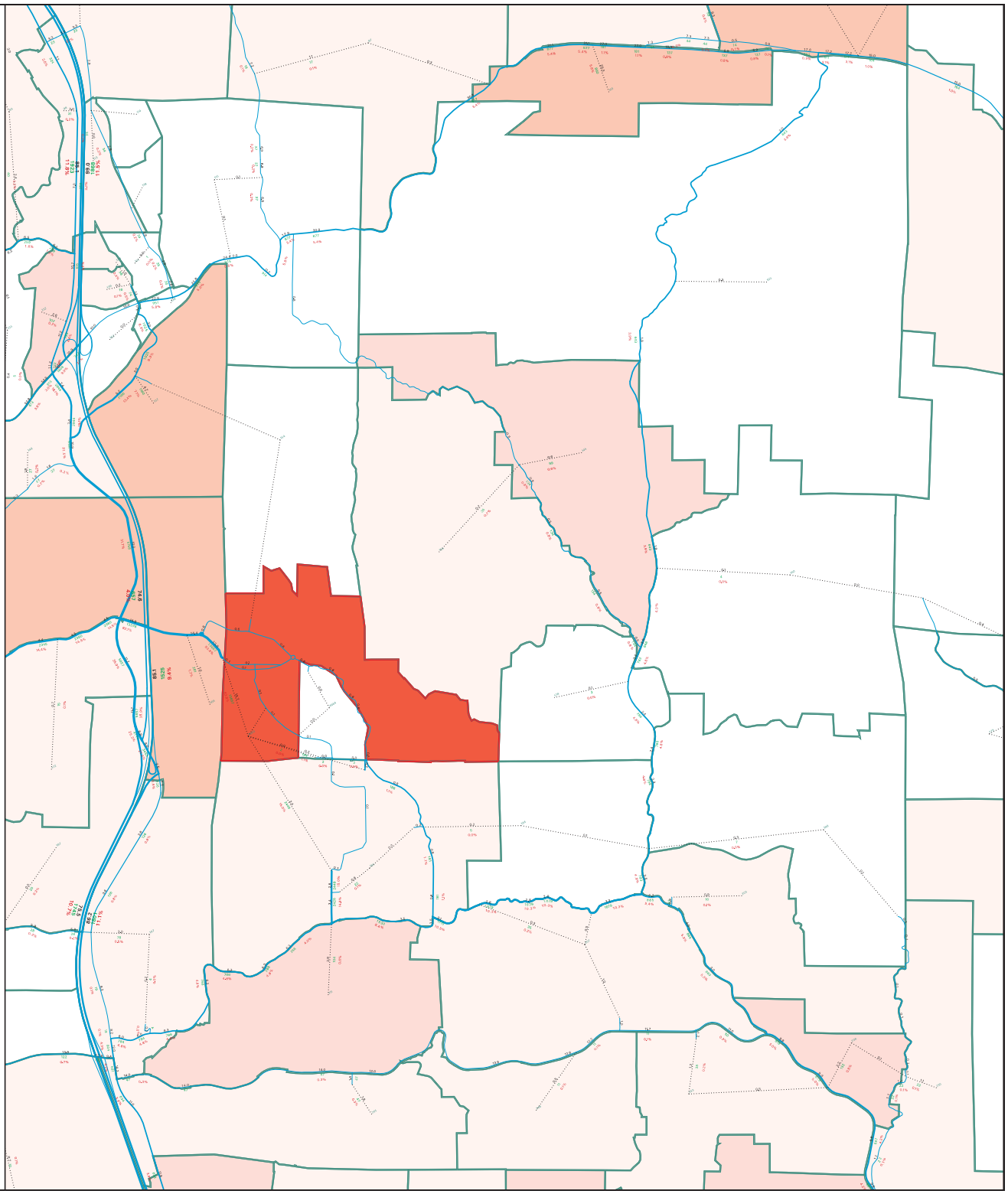
*SANDAG Model run shows that 75.43% of VMT is generated by residential uses.
** See Footnote C of Table 1.

cc: File

ATTACHMENT A


TAZ 4683 Total VMT = 186,214
VMT per Person Trip 9.5
VMT per Vehicle Trip 13.6
VMT per Assigned Trip 14.2
VMT per Dwelling Unit 95.7
VMT per Capita 33.9
SANDAG Series 12
2020 2007 RTP
Revenue Constrained
Residential Select Zone
Lilac Hills Ranch Project Area
Model Run 3/20/17
SR12 V3 2020 RC RTP11
Forecasted Volumes:
Unadjusted Volume (In Thousands)
Select Link Volume
Select Link Percentage
Traffic Analysis Zone
Link Distributions:
100%
50.1% --> 99.9%
25.1% --> 50.0%
10.1% --> 25.0%
5.1% --> 10.0%
0.1% --> 5.0%
0%
Zonal Distributions:
100%
25.1% --> 99.9%
10.1% --> 25.0%
1.1% --> 10.0%
0.6% --> 1.0%
0.1% --> 0.5%
Zero Trips (0.0%)
Feet 0 1,250 2,500
Meters 150 450 750
SANDAG
San Diego's Regional Planning Agency
March 22, 2017


TAZ 4684 Total VMT = 60,656
VMT per Person Trip 7.3
VMT per Vehicle Trip 10.8
VMT per Assigned Trip 10.3
SANDAG Series 12
2020 2007 RTP
Revenue Constrained
Non-Residential Select Zone
Lilac Hills Ranch Project Area
Model Run 3/20/17
SR12 V3 2020 RC RTP11
Forecasted Volumes:
Unadjusted Volume (In Thousands)
Select Link Volume
Select Link Percentage
Traffic Analysis Zone
Link Distributions:
100%
50.1% --> 99.9%
25.1% --> 50.0%
10.1% --> 25.0%
5.1% --> 10.0%
0.1% --> 5.0%
0%
Zonal Distributions:
100%
25.1% --> 99.9%
10.1% --> 25.0%
1.1% --> 10.0%
0.6% --> 1.0%
0.1% --> 0.5%
Zero Trips (0.0%)
Feet 0 1,250 2,500
Meters 150 450 750
SANDAG
San Diego's Regional Planning Agency
March 22, 2017



SANDAG Series 12
2030 2007 RTP
Revenue Constrained
Project Select Zone

Lilac Hills Ranch Project Area

Model Run 6/02/17
2030rc11kc (KC 2017)
All project land use in TAZ 4683

Forecasted Volumes:

- Unadjusted Volume (In Thousands)
- Select Link Volume
- Select Link Percentage
- Traffic Analysis Zone

Link Distributions:

- 100%
- 50.1% --> 99.9%
- 25.1% --> 50.0%
- 10.1% --> 25.0%
- 5.1% --> 10.0%
- 0.1% --> 5.0%
- 0%

Zonal Distributions:

- 100%
- 25.1% --> 99.9%
- 10.1% --> 25.0%
- 1.1% --> 10.0%
- 0.6% --> 1.0%
- 0.1% --> 0.5%
- Zero Trips (0.0%)

Feet 0 1,250 2,500
Meters 150 450 750

SANDAG
San Diego's Regional Planning Agency

June 7, 2017

ATTACHMENT B

Lilac Hills Ranch Weekend Trip Generation

USE	SIZE		DAILY TRIP ENDS	
			RATE	VOLUME
RESIDENTIAL USES				
Single-Family	903	d.u.	8.7	7,858
Multiple-Family	375	d.u.	7.17	2,688
Senior Adult Housing - Detached	468	d.u.	2.73	1,278
Assisted Living	200	beds	2.20	440
SUBTOTAL RESIDENTIAL USES:	1,946	d.u.		12,264
OTHER USES				
Specialty Retail / Strip Commercial	61.5	KSF	42.04	2,585
Office	28.5	KSF	3.16	90
Country Inn / B&B	50	rooms	8.84	442
Church	30	acres	29.23	877
Elementary School (K-5)	568	students		0
Middle School (6-8)	132	students		0
CPF (Recreational Center / Fire Station)	40	KSF	9.10	364
Neighborhood / County Park	24	acres	12.14	287
Water Reclamation	2.4	acres		14
Recycling Center	0.6	acres		4
SUBTOTAL:				4,663
TOTAL PROJECT TRIPS				16,927
Internal Capture	22%			-3,724
TOTAL EXTERNAL PROJECT TRIPS				13,203
TOTAL WEEKDAY PROJECT TRIPS				15,151
Weekend Reduction				-12.857%

ATTACHMENT D:

ConSol Energy

Modeling Report

LILAC HILLS RANCH

SAN DIEGO COUNTY, CALIFORNIA

Building Analysis (April 2017)

An estimation of annual energy use and PV production for representative residential and mixed use buildings designed to meet the 2016 California Energy Code and the California Energy Commission's Zero Net Energy definition from the 2015 Integrated Energy Policy Report.

PROJECT APPLICANT:

ACCRETIVE INVESTMENTS, INC.
11452 EL CAMINO REAL, SUITE 110
SAN DIEGO, CA 92130
ATTN: JON RILLING
PH: 858-546-0700

PREPARED FOR:
COUNTY OF SAN DIEGO
5510 OVERLAND AVENUE, THIRD FLOOR
SAN DIEGO, CA 92123
KIVA PROJECT: 09-0112513
SP 3810-12-001
GPA 3800-12-001
REZ 3600-12-003
TM 5571 RPL5 and 5572 RPL5
MUP 3300-12-005

Table of Contents

EXECUTIVE SUMMARY 2
Methods and Assumptions 2
2,067 sf 2 story home 5
3,242 sf 2 story home 9
3 story 8 plex Multi-Family 13
Mixed Use: 5 unit apartments over Retail, Gas + Electric 17
Mixed Use: 10 unit apartments over Retail, Gas + Electric 22
Mixed Use: 5 unit apartments over Retail, All Electric 27
Mixed Use: 10 unit apartments over Retail, All Electric 32
California Energy Commission Climate Zone Maps 37

EXECUTIVE SUMMARY

This report analyzes two typical single-family residential home layouts, one typical multi-family building layout and one typical mixed use building layout representing prototype structures for the master-planned community – referred to as Lilac Hills Ranch. Representative samples were used as prototypes since building plans have yet to be developed for the site. The objective of this analysis is to calculate the annual energy use when each building is configured with options that achieve: (i) compliance with the 2016 California Energy Code, versus (ii) Zero Net Energy (ZNE) as defined in the California Energy Commission's (CEC) 2015 Integrated Energy Policy Report (2015 IEPR). This report also determines the size of the rooftop photovoltaic (PV) system that is required for each building to achieve ZNE. In this analysis, total estimated annual energy use (in kWh and therms) was calculated for regulated and unregulated loads for each residential building type. "Regulated loads" are end uses covered by the California Building Energy Efficiency Standards (California Energy Code Title 24, Part 6) and include space heating, space cooling, and water heating. "Unregulated loads" are those which are not regulated by Title 24 and include lighting, appliances and plug loads.

The sample building configurations used in this analysis for the single-family detached residences are a typical 2,067 square foot, two-story home, and a typical 3,242 square foot, two-story home. The multi-family residence is a 10,570 square foot, three-story building, with 8 townhome units. The mixed use building has a 1st floor with 7,650 square feet of retail space, alternately modeled with 1 story of apartments (5 units), and 2 stories of apartments (10 units), above the retail space. The plans for all buildings were taken from ConSol's library of building plans.

Methods and Assumptions

ConSol modeled the prototype residences using the CEC's public-domain compliance software, California Building Energy Code Compliance (CBECC-Res), which calculates Title 24 compliance and annual energy use. The residential buildings were modeled in California Climate Zone (CZ) 10 (Escondido) which covers the Lilac Hills Ranch Project. Figure 8, on page 36 of this report, shows the CEC's Map of the California Climate Zones. Figure 8a, shows the Google Earth overlay of the California Climate Zone Map, illustrating that Escondido is in CZ 10.

In the software, the unregulated loads are set inputs determined by the CEC and based upon standard occupancy assumptions. For this reason the unregulated loads are the same from the residence modeled in 2016 standards to the residence modeled to ZNE standards. The rounding function in the software causes slight differences in the total kWh from one model to the other. These differences are not material. The software rounds the energy use to the nearest 1/10th in both kWh and therms, this produces minor discrepancies between the numbers in the tables and the numbers in the narrative. The narrative makes use of whole numbers, but there is no material difference between the numbers.

ConSol modeled the residences with building features that are most likely to be used to achieve compliance with the 2016 California Energy Code. Code compliance is based on the CEC's Time Dependent Valuation

(TDV) energy[1] metric. For a building to be code compliant, the proposed design TDV energy[2] must be less than the standard design TDV energy[3]. An additional model was created to achieve compliance with the ZNE definition in the 2015 IEPR. A decrease in the TDV energy of the ZNE model of 8%-15% beyond the 2016 code was assumed to represent the energy efficiency requirements from the next code cycle (2019 Title 24, Part 6). The site energy was calculated for 2016 code compliant and the ZNE residences in kWh and therms, which signifies that the residences were modeled in an electric and natural gas configuration.

A cardinal orientation analysis (North, East, South, West) was performed for the 2016 code compliant and ZNE residences, to determine the "worst case" (uses most energy) orientation. ConSol used the most conservative building orientation to determine the energy features required to achieve code compliance for all orientations. The features used in the calculations were selected based on common industry practices, ConSol's experience with builder preferences, and cost-effectiveness.

For each building analyzed, the first column in the table represents the building energy efficiency requirements needed to meet the 2016 code**.** The second column represents the building energy efficiency requirements needed to achieve the projected ZNE code in 2019, prior to the addition of the photovoltaic (PV) system. Features that are highlighted in yellow represent a change from the features listed in the 2016 code compliance configuration. The table following the building features reflects the Site Energy Uses and PV Sizing.

ConSol modeled the prototype mixed use building using two of the CEC's approved software programs, CBECC Residential for the residential portion of the building, and EnergyPro for the retail (i.e. commercial/non-residential) portion of the building. For the PV analysis on the mixed use building, the results of the two models were added together, to show overall PV requirements. The mixed use building was analyzed in an all electric configuration, as well as a natural gas and electric configuration. The results for energy use and PV analysis will be shown for all options.

PV Assumptions

The CBECC-Res modeling software used for the single-family and multi-family residences sized the PV system with all solar panels facing South (180°). An example has been provided for each building of an alternate PV system size, given a different cardinal direction for the PV system.

The PV system for the mixed use building was sized with some panels facing West (270°) some panels facing South (180°) and some panels facing East (90°), as the prototype building is L shaped and this is a reasonable assumption.

The PV analysis on the 2 single-family residential prototypes uses premium 320 watt solar panels, as this size and wattage solar panel will most likely be the standard within a few years. The PV analysis on the

[1] Time Dependent Valuation energy assigns greater value to electricity produced or consumed at peak periods.
[2] Proposed design TDV energy is the projected TDV energy used by the building using the features modeled.
[3] Standard design TDV energy is the projected TDV energy used when the building meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code.

multi-family residential building and the mixed use building uses premium 345 watt panels. For these buildings it is necessary to maximize the rooftop space available with the highest wattage panel that can be used for residential installation. In this analysis, this allows the multi-family townhome building to reach ZNE with PV installed rooftop only, and it minimizes the amount of PV that would need to be installed in common areas such as a parking canopy for the mixed use building. As PV technology advances during buildout, more efficient panels may be available at the time of solar installation. The use of more efficient panels than stated in this report may result in fewer panels needed to reach the required energy production.

Currently, the CEC modeling software does not account for Electric Vehicle (EV) charging, therefore an average annual Level 2 EV charger use of 2,865 kWh/yr per residence was used as an estimate. This estimate was determined from information obtained from the DOE's Alternative Fuels Data Center. EV chargers were not included in the calculations for the retail portion of the mixed use building, but results are shown for EV charger use for the apartments above the retail space. The results describe how much additional PV would be required if EV charging is included.

Projected Energy Consumption and PV Sizing to Meet ZNE

Plan 2,067 square foot – 2 Story

CBECC calculates the annual site energy consumption for the 2,067 square foot, 2 story home that meets the 2016 code is 1,018 kWh and 169 therms for regulated loads and 4,876 kWh and 15 therms for unregulated loads. This equates to a total annual site energy consumption of 5,894 kWh and 184 therms for the 2016 code compliant residence. The energy consumption of the 2,067 square foot, 2 story home designed to achieve ZNE is predicted to be 930 kWh and 140 therms for regulated loads and 4,876 kWh and 15 therms for unregulated loads. This equates to a total annual site energy consumption of 5,806 kWh and 155 therms for the ZNE residence (Figure 1a). This reflects the increased efficiency of the ZNE residence features.

The CEC's compliance software calculates the TDV energy use of the home to verify that the proposed design meets current code. As discussed above, for a residence to be code compliant, the proposed design TDV energy[4] must be equal to or less than the standard design TDV energy[5]. In this analysis, the 2,067 square foot residence designed to meet the 2016 code has a TDV energy of 38.26 kTDV/ft2-yr. This is a 0.1% (.03 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the residence designed to achieve ZNE is calculated to be 33.49 kTDV/ft2-yr, a 12.5% (4.802 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 1). The increase in compliance of the ZNE residence represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

CBECC was used to determine the required PV system size needed to achieve ZNE. The PV system was sized using the most conservative building orientation (the orientation that would result in the highest TDV energy consumption), which requires the largest PV system to achieve ZNE. It is important to note that if the residence is built in an orientation other than the one reviewed, the PV system could be configured differently to achieve the same or better energy production. An example is provided in the explanation below.

Using the CBECC software, an Energy Design Rating (EDR) was calculated for the residence to demonstrate that the building is designed to reach ZNE. The EDR is a ratio of energy use that includes the regulated energy consumption, unregulated energy consumption, and annual PV production. All energy measurements (consumption and production) are based on the CEC's TDV energy[6] metric. To achieve ZNE, the EDR of a residence must be less than the EDR of the PV system (i.e., the sum of the consumption EDR and generation EDR must be equal to or less than zero, See Figure 1a).

[4] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled.
[5] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code.
[6] Time Dependent Valuation energy assigns greater value to electricity produced or consumed at peak periods

The PV system that ConSol used in the calculation consisted of premium 320 watt PV panels facing 180° (South), and a standard central inverter. South facing, or 180° is the optimal orientation for PV generation in Climate Zone 10. The PV system configuration for this residence requires 4.4 kW to reach ZNE (Figure 1a). A minimum of 7,229 kWh of annual PV production is needed for the residence to be ZNE. More efficient panels, which would reduce the square footage of PV panels required, may be used to achieve ZNE as long as the minimum annual PV production is achieved.

To meet the required production, 14 panels (approx. 5.5 ft x 3.5 ft) are needed. This equates to approximately 266 square feet of south facing roof area. The California Fire Code requires that PV arrays must be a minimum of three feet from the ridge, have one-and-a-half-foot clearance on each side of the array, as well as one-and-a-half-foot clearance from hips and valleys. If the required roof area is unavailable on south facing roofs, additional PV panels can be located on remaining roof orientations to meet the minimum required yearly production. If additional roof orientations are used, the PV system size may need to be increased due to PV production being proportional to orientation. During the building design phase, it is recommended that builders be mindful of roof all elements of roof design to maximize space needed for required PV system.

The building plan used for this 2067 sf, 2 story home is representative of an entry-level single family residence. The building analyzed in this report can accommodate the required 4.4 kW PV system, assuming that the roof is designed with adequate area for solar panels.

As an example of how PV system size may differ with the PV facing a cardinal direction other than South, the prototype building was considered facing East, which is the most constrained scenario, requiring the largest amount of rooftop PV. With the prototype home facing East, the PV system would face West, given the roof configuration of the building studied. To meet the minimum required annual production of 7,229 kWh, the PV system would be 5.1 kW and consist of 16 PV panels. The building analyzed in this report can accommodate the 16 panels in this larger system.

If a Level 2 EV charger is added to this home, and it is assumed that it will use an average of 2,865 kWh / yr, then 6 additional 320 watt panels will be required (assumed facing south). This translates into an additional 115.5 square feet of roof area. With appropriate roof design, a 2 story house of this size could accommodate the additional PV panels required for EV charging.

Lilac Hills Ranch Escondido Climate Zone 10 2067 Sqft. / 2-Story / 17.5% Glazing / 4 Bedrm.	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features + PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**0.1%**	**12.5%**
Worst Case Magin Above Code (2016 Code) - kTDV	**0.03**	**4.80**
Standard Design Budget	**38.29**	**38.29**
Proposed Design Budget	**38.26**	**33.49**
Proposed Energy Design Rating (EDR)	**49.5**	**46.9**
PV System Size	**N/A**	**4.4**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4, R-21	**R-21+R8, R-21**
Wall Insulation - 2x4 Interior Garage Walls	N/A	N/A
Wall Insulation - 2x6 Interior Garage Walls	R-21	R-21
Wall Insulation - 2x4 Exterior Garage Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Garage Walls	R-0+R4	**R-0+R8**
Attic Insulation - Flat Portions	R-38	R-38
Attic Insulation - Vaulted Portions	N/A	N/A
Attic Insulation - Rafters Portions	N/A	N/A
Attic Insulation - At Furnace Platform	R-21	R-21
Floor Insulation - Above Garage	R-19	R-19
Floor Insulation - Cantilever	R-19+R-4	R-19+R-4
Floor Insulation - Subfloor	N/A	N/A
Insulation Installation [Verification] - QII	Required	Required
Air Infiltration [Testing] - Blower Door	3.5 ACH	**3.0 ACH**
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.10 / 0.85	0.10 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	**R-19**
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.31 / 0.22	**0.30 / 0.23**
Single Hung	0.31 / 0.22	**0.30 / 0.23**
Fixed	0.33 / 0.25	**0.30 / 0.23**
Patio Door	0.33 / 0.23	**0.30 / 0.23**
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Furnace	Furnace
Space Heating Efficiency (AFUE)	0.80	0.80
Space Cooling Type	ACSplit	ACSplit
Space Cooling Efficiency (SEER / EER)	14 / 12.2	**15 / 13**
SEER [Verification]	N/A	**Required**
EER [Verification]	Required	Required
Refrigerant Charge [Verification/Testing]	Required	Required
Fan Watt Draw [Testing]	0.58 W/cfm	0.58 W/cfm
Adequate Airflow [Testing]	350 cfm/ton	350 cfm/ton
Low Leakage Air Handler [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Attic	Attic
Buried Ducts [Verification]	N/A	N/A
Low Leakage (Tight) Ducts [Testing]	Required @ 5%	Required @ 5%
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	58 cfm	58 cfm
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	58 / 0.25	58 / 0.25
Whole House Fan	N/A	N/A
Water Heating		
Water Heater Type	Tankless	Tankless
Water Heater Efficiency (EF)	0.82	**0.95**
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 1

Lilac Hills Ranch Escondido Climate Zone 10 2067 Sqft. / 2-Story / 17.5% Glazing	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	1018.2	930.4
Therms	168.6	140.4
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	499.5	499.5
Appliance & Cooking kWh	1887.1	1888.5
Plug Load kWh	2371.3	2371.3
Exterior Lighting kWh	117.9	117.9
Appliance & Cooking Therms	15.2	15.2
Total kWh	5894.0	5807.6
Total Therms	183.8	155.6
PV Sizing (kW)		4.4
PV Production kWH		7229.2
PV Production TDV		84.4
PV Production EDR		47.0
Proposed Design TDV		84.3
Proposed Design EDR		46.9
Final EDR of Proposed Design w/ PV		-0.1

Figure 1a

Plan 3,242 square foot – 2 Story

CBECC calculates the annual site energy consumption for the 3,242 square foot, 2 story home that meets the 2016 code is 1,138 kWh and 218 therms for regulated loads and 5,780 kWh and 17 therms for unregulated loads. This equates to a total annual site energy consumption of 6,918 kWh and 235 therms. The energy consumption of the residence designed to achieve ZNE is calculated to be 1,028 kWh and 199 therms for regulated loads and 5,781 kWh and 17 therms for unregulated loads. This equates to a total annual site energy consumption of 6,809 kWh and 216 therms for the ZNE residence (Figure 2a). This reflects the increased efficiency of the ZNE residence features.

The CEC's compliance software calculates the TDV energy use of the home to verify that the proposed design meets current code. For a residence to be code compliant, the proposed design TDV energy[7] must be equal to or less than the standard design TDV energy[8]. In this analysis, the 3,242 square foot residence designed to meet the 2016 code has a TDV energy of 29.47 kTDV/ft2-yr. This is a 1.3% (.40 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the residence designed to achieve ZNE is calculated to be 26.53 kTDV/ft2-yr, an 11.2% (3.34 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 2). The increase in compliance of the ZNE residence represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

CBECC was used to determine the required PV system size needed to achieve ZNE. The PV system was sized using the most conservative building orientation (the orientation that would result in the highest TDV energy consumption), which requires the largest PV system to achieve ZNE. It is important to note that if the residence is built in an orientation other than the one reviewed, the PV system size could be different.

Using the CBECC software, an EDR was calculated for the residence to demonstrate that the building is designed to reach ZNE. The EDR is a ratio of energy use that includes the regulated energy consumption, unregulated energy consumption, and annual PV production. All energy measurements (consumption and production) are based on the CEC's TDV energy[9] metric. To achieve ZNE on a residence, the EDR of the home must be less than the EDR of the PV system (i.e., the sum of the consumption EDR and generation EDR must be equal to or less than zero, See Figure 2a).

The PV system used in the calculation consisted of premium 320 watt PV panels facing 180° (South), and a standard central inverter. The system configuration for this 3,242 square foot, 2 story home requires a 5.4 kW PV system to reach ZNE (Figure 2a). A minimum of 8,949 kWh of annual PV production is needed for the residence to be ZNE. More efficient panels, which would reduce the square footage of PV panels required, may be used to achieve ZNE as long as the minimum annual PV production is achieved. To meet the required production, 17 premium 320 watt panels (approx. 5.5 ft x 3.5 ft) are needed. This equates to

[7] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled.
[8] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code.
[9] Time Dependent Valuation energy assigns greater value to electricity produced or consumed at peak periods.

approximately 327 square feet of south facing roof area. The California Fire Code requirements are the same as stated earlier in this report. If the required roof area is unavailable on south facing roofs, additional PV panels can be located on remaining roof orientations to meet the minimum required yearly production (see example below).

The building plan used for this sample residence is representative of a mid-level single family residence. The building analyzed in this report can accommodate the required 5.4 kW PV system, assuming that the roof is designed with adequate area for solar panels.

As an example of how PV system size may differ with the PV facing a cardinal direction other than South, the prototype building was considered facing East, the most conservative scenario, requiring the largest amount of rooftop PV. With the prototype home facing East, the PV system would face West, given the roof design of the building studied. To meet the required annual production of 8,949 kWh, the PV system would be 6.2 kW consisting of 19 PV panels. The building analyzed in this report can accommodate the 19 panels in this somewhat larger system.

By adding a Level 2 EV charger to this home, and it is assumed that it will use an average of 2,865 kWh / yr, then 6 additional 320 watt panels will be required (assumed facing south). This translates into an additional 115.5 square feet of roof area. With appropriate roof design, a 2 story home of this size could accommodate the additional PV panels required for EV charging.

Lilac Hills Ranch Escondido Climate Zone 10 3242 Sqft. / 2-Story / 16.7% Glazing / 5 Bedrm.	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features + PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**1.3%**	**11.2%**
Worst Case Magin Above Code (2016 Code) - kTDV	**0.40**	**3.34**
Standard Design Budget	**29.87**	**29.87**
Proposed Design Budget	**29.47**	**26.53**
Proposed Energy Design Rating (EDR)	**46.2**	**44.3**
PV System Size	**N/A**	**5.4**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4	**R-21+R8**
Wall Insulation - 2x4 Interior Garage Walls	N/A	N/A
Wall Insulation - 2x6 Interior Garage Walls	R-21	R-21
Wall Insulation - 2x6 Exterior Garage Walls	R-0+R4	**R-0+R8**
Attic Insulation - Flat Portions	R-38	R-38
Attic Insulation - Vaulted Portions	N/A	N/A
Attic Insulation - Rafters Portions	N/A	N/A
Attic Insulation - At Furnace Platform	R-21	R-21
Floor Insulation - Above Garage	R-19	R-19
Floor Insulation - Cantilever	R-19+R-4	R-19+R-4
Insulation Installation [Verification] - QII	Required	Required
Air Infiltration [Testing] - Blower Door	3.5 ACH	**3.0 ACH**
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.10 / 0.85	0.10 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	**R-19**
Flat Roof cavity Insulation	N/A	N/A
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.31 / 0.22	**0.30 / 0.23**
Single Hung	0.31 / 0.22	**0.30 / 0.23**
Fixed	0.33 / 0.25	**0.30 / 0.23**
Patio Door	0.33 / 0.23	**0.30 / 0.23**
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Furnace	Furnace
Space Heating Efficiency (AFUE)	0.80	0.80
Space Cooling Type	ACSplit	ACSplit
Space Cooling Efficiency (SEER / EER)	14 / 12.2	**15 / 13**
SEER [Verification]	N/A	**Required**
EER [Verification]	Required	Required
Refrigerant Charge [Verification/Testing]	Required	Required
Fan Watt Draw [Testing]	0.58 W/cfm	0.58 W/cfm
Adequate Airflow [Testing]	350 cfm/ton	350 cfm/ton
Low Leakage Air Handler [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Attic	Attic
Buried Ducts [Verification]	N/A	N/A
Low Leakage (Tight) Ducts [Testing]	Required @ 5%	Required @ 5%
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	77 cfm	77 cfm
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	77 / 0.25	77 / 0.25
Whole House Fan	N/A	N/A
Water Heating		
Water Heater Type	Tankless	Tankless
Water Heater Efficiency (EF)	0.82	0.82
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 2

Lilac Hills Ranch Escondido Climate Zone 10 3242 Sqft. / 2-Story / 16.7% Glazing / 5 Bedrm.	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	1138.4	1028.0
Therms	218.0	199.3
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	715.3	715.3
Appliance & Cooking kWh	2168.0	2169.2
Plug Load kWh	2716.7	2716.7
Exterior Lighting kWh	180.3	180.3
Appliance & Cooking Therms	16.5	16.5
Total kWh	6918.7	6809.5
Total Therms	234.5	215.8
PV Sizing (kW)		5.4
PV Production kWH		8946.1
PV Production TDV		66.5
PV Production EDR		44.80
Proposed Design TDV		65.6
Proposed Design EDR		44.30
Final EDR of Proposed Design w/ PV		-0.6

Figure 2a

8-Plex – 3 Story

CBECC calculates the annual site energy consumption for the 10,570 square foot, 3 story, 8-plex townhome building that meets the 2016 code is 7,184 kWh and 1,016 therms for regulated loads and 32,487 kWh and 111 therms for unregulated loads. This equates to a total annual site energy consumption of 39,671 kWh and 1127 therms for the 2016 code compliant multi-family building. The energy consumption of the 3 story multi-family building designed to achieve ZNE is predicted to be 6,544 kWh and 963 therms for regulated loads and 32,500 kWh and 111 therms for unregulated loads. This equates to a total annual site energy consumption of 39,044 kWh and 1,074 therms for the ZNE residence (Figure 3a). This reflects the increased efficiency of the ZNE multi-family building features.

The CEC's Compliance software calculates the TDV energy use of a multi-family building to verify that the proposed design meets current code. For a multi-family building to be code compliant, the proposed design TDV energy[10] must be equal to or less than the standard design TDV energy[11]. In this analysis, the multi-family building designed to meet the 2016 code has a TDV energy of 47.04 kTDV/ft2-yr. This is a 1.0% (.49 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the multi-family building designed to achieve ZNE is calculated to be 42.51 kTDV/ft2-yr, a 10.6% (5.02kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 3). The increase in compliance of the ZNE multi-family building represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

CBECC was used to determine the required PV system size needed to achieve ZNE. The PV system was sized using the most conservative building orientation (the orientation that would result in the highest TDV energy consumption), which requires the largest rooftop PV system to achieve ZNE. It is important to note that if the multi-family building is built in an orientation other than the one reviewed, the PV system size could be different.

Using the CBECC software, an EDR was calculated for the multi-family building to demonstrate that the building is designed to reach ZNE. The EDR is a ratio of energy use that includes the regulated energy consumption, unregulated energy consumption, and annual PV production. All energy measurements (consumption and production) are based on the CEC's TDV energy[12] metric. To achieve ZNE on a multi-family building, the EDR of the building must be less than the EDR of the PV system (i.e., the sum of the consumption EDR and generation EDR must be equal to or less than zero, See Figure 3a).

The PV system that ConSol used in the calculation consisted of premium 345 watt PV panels facing 180° (South), and a standard central inverter. The PV system configuration for this 3 story, 8 unit multi-family building requires 29.0 kW to reach ZNE (Figure 3a). A minimum of 48,044 kWh of annual PV production is needed for the multi-family building to be ZNE. More efficient panels, which would reduce the square

[10] Proposed design TDV energy is the projected TDV energy used by the multi-family building using the features modeled.
[11] Standard design TDV energy is the projected TDV energy used when the multi-family building meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code.
[12] Time Dependent Valuation energy assigns greater value to electricity produced or consumed at peak periods.

footage of PV panels required, may be used to achieve ZNE as long as the minimum annual PV production is achieved.

To meet the required production, eighty four (84) premium 345 watt panels (approx. 5.5 ft x 3.5 ft) are needed. This equates to approximately 1,617 square feet of south facing roof area. The California Fire Code requirements are the same as stated earlier in this report.

The building plan used for this sample multi-family building is representative of a typical 3-story multi-family building with 8 attached units. The building analyzed in this report can accommodate the required 29 kW PV system using 3 different roof planes and assuming that the roof is designed with adequate area for solar panels.

The prototype building was considered facing West the most conservative scenario, requiring the largest amount of rooftop PV. With the prototype building facing West, the roof configuration would be able to accommodate 56 panels facing East, 30 panels facing West and 10 panels facing South. This equates to a 33.1 kW system producing 48,307 kWh annually, which meets the required production to meet ZNE. This is a likely scenario for multi-family residences and roof planes, facing multiple cardinal directions would need to be designed with adequate space for solar panels to maximize rooftop PV design.

If 8 Level 2 EV chargers are added, one for each of the 8 residential units, and it is assumed that each will use an average of 2,865 kWh per year. Then an additional 22,920 kWh per year needs to be generated, which requires 40 additional 345 watt panels (assumed facing south). This translates into an additional 770 square feet of roof area. It is most likely that this additional PV array would be installed as a parking canopy.

Lilac Hills Ranch Escondido Climate Zone 10 8-Plex / 10,570 Sqft. / 3-Story / 15.0% Glazing / 24 Bedrm	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features + PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**1.0%**	**10.6%**
Worst Case Magin Above Code (2016 Code) - kTDV	**0.49**	**5.02**
Standard Design Budget	**47.53**	**47.53**
Proposed Design Budget	**47.04**	**42.51**
Proposed Energy Design Rating (EDR)	**59.5**	**57.2**
PV System Size	**N/A**	**29.0**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4	**R-21+R8**
Wall Insulation - 2x4 Interior Garage Walls	N/A	N/A
Wall Insulation - 2x6 Interior Garage Walls	R-21	R-21
Wall Insulation - 2x6 Exterior Garage Walls	R-0+R4	**R-0+R8**
Attic Insulation - Flat Portions	R-30	**R-38**
Attic Insulation - Vaulted Portions	N/A	N/A
Attic Insulation - Rafters Portions	N/A	N/A
Attic Insulation - At Furnace Platform	R-21	R-21
Floor Insulation - Above Garage	R-19	R-19
Floor Insulation - Cantilever	R-19+R-4	R-19+R-4
Floor Insulation - Subfloor	R-19	R-19
Insulation Installation [Verification] - QII	Required	Required
Air Infiltration [Testing] - Blower Door	7.0 ACH (Default)	7.0 ACH (Default)
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.10 / 0.85	0.10 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	**R-19**
Flat Roof cavity Insulation	N/A	N/A
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.34 / 0.23	**0.30 / 0.23**
Single Hung	0.34 / 0.23	**0.30 / 0.23**
Fixed	0.33 / 0.25	**0.30 / 0.23**
Patio Door	0.33 / 0.23	**0.30 / 0.23**
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Furnace	Furnace
Space Heating Efficiency (AFUE)	0.80	0.80
Space Cooling Type	ACSplit	ACSplit
Space Cooling Efficiency (SEER / EER)	14 / 11.7	**15 / 13**
SEER [Verification]	N/A	**Required**
EER [Verification]	N/A	**Required**
Refrigerant Charge [Verification/Testing]	Required	Required
Fan Watt Draw [Testing]	0.58 W/cfm	0.58 W/cfm
Adequate Airflow [Testing]	350 cfm/ton	350 cfm/ton
Low Leakage Air Handler [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Attic	Attic
Buried Ducts [Verification]	N/A	N/A
Low Leakage (Tight) Ducts [Testing]	Required @ 5%	Required @ 5%
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	64 cfm (Plan 1) 86 cfm (Plan 3)	64 cfm (Plan 1) 86 cfm (Plan 3)
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	64 / 0.25 (Plan 1) 86 / 0.25 (Plan 3)	64 / 0.25 (Plan 1) 86 / 0.25 (Plan 3)
Whole House Fan	N/A	N/A
Water Heating		
Water Heater Type	Tankless	Tankless
Water Heater Efficiency (EF)	0.82	0.82
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 3

Lilac Hills Ranch Escondido Climate Zone 10 8-Plex / 10,570 Sqft. / 3-Story / 15.0% Glazing / 24 Bedrm	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	7184.0	6543.6
Therms	1016.4	962.9
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	2760.5	2760.5
Appliance & Cooking kWh	12893.1	12906.3
Plug Load kWh	16207.1	16207.1
Exterior Lighting kWh	625.8	625.8
Appliance & Cooking Therms	111.2	111.2
Total kWh	39670.5	39043.3
Total Therms	1127.6	1074.1
PV Sizing (kW)		29.0
PV Production kWH		48043.6
PV Production TDV		109.5
PV Production EDR		57.24
Proposed Design TDV		109.4
Proposed Design EDR		57.19
Final EDR of Proposed Design w/ PV		-0.1

Figure 3a

Mixed Use (5-Plex – 1 Story over Retail) – with Gas and Electric Usage

CBECC calculates the annual site energy consumption for the 7,650 square foot, 1 story 5-plex residential portion of the mixed use building that meets the 2016 code is 5,141 kWh and 571 therms for regulated loads and 16,495 kWh and 220 therms for unregulated loads. This equates to a total annual site energy consumption of 21,636 kWh and 791 therms for the 2016 code compliant 5 unit apartment building The energy consumption of the residential portion of the building designed to achieve ZNE is predicted to be 5,118 kWh and 472 therms for regulated loads and 16,506 kWh and 220 therms. This equates to a total annual site energy consumption of 21,624 kWh and 692 therms for the ZNE 5 plex apartment building (Figure 4c). This reflects the increased efficiency of the ZNE residence features.

CBECC calculates the TDV energy use of the residence to verify that the proposed design meets current code. For a residence to be code compliant, the proposed design TDV energy[13] must be equal to or less than the standard design TDV energy[14]. In this analysis, the residence designed to meet the 2016 code has a TDV energy of 40.11 kTDV/ft2-yr. This is a 2.1% (.86 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the residence designed to achieve ZNE is calculated to be 37.64 kTDV/ft2-yr, an 8.5% (3.33 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 4a). The increase in compliance of the ZNE residence represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

The retail portion of the analysis is considered Commercial / Non-Residential, and the inputs were used for a General retail space. As General retail, the loads assumed by the software are consistent with non-specific retail space. For the retail space a total annual site energy consumption of 99,053 kWh and 526 therms for the code compliant building. While the energy consumption to achieve ZNE is predicted to be an annual site energy consumption of 89,912 kWh and 529 therms (Figure 5b). This reflects the increased efficiency of the ZNE features.

CBECC calculates the TDV energy use of the retail space to verify that the proposed design meets current code. For a retail space to be code compliant, the proposed design TDV energy[15] must be equal to or less than the standard design TDV energy[16]. In this analysis, the retail space designed to meet the 2016 code has a TDV energy of 257.34 kTDV/ft2-yr. This is a 0.8% (1.90 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the retail space designed to achieve ZNE is calculated to be 226.47 kTDV/ft2-yr, a 12.7% (32.82 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 4). The increase in compliance of the ZNE mixed use building (retail portion only) represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

[13] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled.
[14] Standard design TDV energy is the projected TDV energy used when the mixed use building meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code.
[15] Proposed design TDV energy is the projected TDV energy used by the mixed use building using the features modeled.
[16] Standard design TDV energy is the projected TDV energy used when the mixed use building meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code.

The PV analysis for the combined 1-story, 5-plex over the retail space, using Natural Gas and electric, follows. The PV system that ConSol used in the analysis consists of premium PV panels facing 270° (West), 180° (South) and 90° (East). The prototype building that was modeled is L shaped, has a first floor with 7,650 square feet of retail space and a second floor with 7,650 square feet of living space consisting of 5 apartments that are approximately 1,500 square feet per unit. The building has a sloped roof with a peak, and an estimate was made (based on roof square footage) that a maximum of 85 PV panels could be installed facing West, 76 panels facing South and 85 panels facing East. The configuration for this mixed use building requires a 77.6 kW PV system for the combined energy use, and a minimum of 117,389 kWh of annual PV production is needed for the building to be ZNE. The commercial modeling software does not give a PV system size, so the system size given here is based on PV generation covering the electricity usage of the building. The PV system was determined in the OnGrid tool, which is an industry specific software program for sizing PV systems and determining specific PV generation. The results show that 85 panels facing West, 76 panels facing South, and 64 panels facing East produces 117,711 kWh / yr. The rooftop of this building then can accommodate the PV necessary to reach ZNE, using 3 separate roof planes, and assuming the roof design can accommodate this number of solar panels. Premium 345-watt panels and a standard central inverter were used to calculate the PV system size. More efficient panels, which would reduce the square footage of PV panels required, may be used to achieve ZNE as long as the minimum annual PV production is achieved. The Fire Code setback requirements assumed for rooftop PV installation are the same as stated earlier in this report, however there may be additional Fire Code requirements relating to PV installation given that this is a mixed use building.

If five Level 2 EV chargers are added for the 5 residential units and each EV charger will use an average of 2,865 kWh per year, an additional 14,325 kWh per year will need to be generated which will require 26 additional panels (facing South). Depending on actual building roof design, this additional PV array may fit on the roof, or may need to be installed as parking canopy.

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**0.8%**	**12.7%**
Worst Case Magin Above Code (2016 Code) - kTDV	**1.90**	**32.82**
Standard Design Budget	**259.29**	**259.29**
Proposed Design Budget	**257.34**	**226.47**
Proposed Energy Design Rating (EDR)	**N/A**	**N/A**
PV System Size	**N/A**	**0.0**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R6	**R-21+R8**
Envelope: Glazing (U-Factor / SHGC)		
Fixed	0.57 / 040	0.57 / 040
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Furnace - Package	Furnace - Package
Space Heating Efficiency (AFUE)	0.80	0.80
Space Cooling Type	A/C - Package	A/C - Package
Space Cooling Efficiency (SEER / EER)	14 / 12.0	14 / 12.0
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Uncond. Space	Uncond. Space
Water Heating		
Water Heater Type	50 Gallon / Storage	50 Gallon / Storage
Water Heater Efficiency (EF)	0.78	0.78
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 4

Lilac Hills Ranch Escondido Climate Zone 10 5-Plex / 7,650 Sqft. / 1-Story / 11.6% Glazing / 15 Bedrm.	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features + PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	2.1%	8.1%
Worst Case Magin Above Code (2016 Code) - kTDV	0.86	3.33
Standard Design Budget	40.97	40.97
Proposed Design Budget	40.11	37.64
Proposed Energy Design Rating (EDR)	54.5	53.0
PV System Size	N/A	18.0
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4	R-21+R8
Attic Insulation - Flat Portions	R-38	R-38
Floor Insulation - Subfloor	R-19	R-19
Insulation Installation [Verification] - QII	Required	Required
Air Infiltration [Testing] - Blower Door	7.0 ACH (Default)	7.0 ACH (Default)
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.20 / 0.85	0.20 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	R-19
Flat Roof cavity Insulation	N/A	N/A
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.31 / 0.22	0.30 / 0.23
Single Hung	0.31 / 0.22	0.30 / 0.23
Fixed	0.31 / 0.22	0.30 / 0.23
Patio Door	0.31 / 0.22	0.30 / 0.23
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type - Radiant	Boiler	Boiler
Space Heating Efficiency (AFUE)	0.78	0.78
Space Cooling Type	Mini Split	Mini Split
Space Cooling Efficiency (SEER / EER)	16 / 12.2	16 / 12.2
HVAC: Duct System		
Duct Insulation R-Value	N/A	N/A
Duct Location	N/A	N/A
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	71 cfm (Plan 1) 84 cfm (Plan 2)	71 cfm (Plan 1) 84 cfm (Plan 2)
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)
Whole House Fan	N/A	N/A
Water Heating		
Water Heater Type	Tankless	Tankless
Water Heater Efficiency (EF)	0.82	0.98
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 4a

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	99053.0	89912.0
Therms	526.0	529.0
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	0.0	0.0
Appliance & Cooking kWh	0.0	0.0
Plug Load kWh	0.0	0.0
Exterior Lighting kWh	0.0	0.0
Appliance & Cooking Therms	0.0	0.0
Total kWh	99053.0	89912.0
Total Therms	526.0	529.0
PV Sizing (kW)		0.0
PV Production kWH		N/A
PV Production TDV		N/A
PV Production EDR		N/A
Proposed Design TDV		N/A
Proposed Design EDR		N/A
Final EDR of Proposed Design w/ PV		N/A

Figure 4b

Lilac Hills Ranch Escondido Climate Zone 10 5-Plex / 7,650 Sqft. / 1-Story / 11.6% Glazing / 15 Bedrm.	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	5141.4	5118.2
Therms	571.0	472.1
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	1856.3	1856.3
Appliance & Cooking kWh	4062.7	4073.4
Plug Load kWh	10129.4	10129.4
Exterior Lighting kWh	446.6	446.6
Appliance & Cooking Therms	219.9	219.9
Total kWh	21636.4	21623.9
Total Therms	790.9	692.0
PV Sizing (kW)		18.0
PV Production kWH		27476.8
PV Production TDV		89.7
PV Production EDR		53.80
Proposed Design TDV		88.3
Proposed Design EDR		53.00
Final EDR of Proposed Design w/ PV		-0.8

Figure 4c

Mixed Use (10-Plex – 2 Story over Retail) – with Gas and Electric Usage

CBECC calculates the annual site energy consumption for the 15,300 square foot, 2 story, 10-plex residential portion of the mixed use building that meets the 2016 code is 8,949 kWh and 1173 therms for the regulated loads and 32,945 kWh and 440 therms for the unregulated loads. This equates to a total annual site energy consumption of 41,894 kWh and 1613 therms for the 2016 code compliant 10 unit apartment building.. The energy consumption of the 10 unit apartment building designed to achieve ZNE is predicted to be 8,875 kWh and 973 therms for regulated loads and 32,964 kWh[17] and 440 therms. This equates to a total annual site energy consumption of 41,839 kWh and 1413 therms for the ZNE residence (Figure 5c). This reflects the increased efficiency of the ZNE residence features.

CBECC calculates the TDV energy use of the 10 unit residence to verify that the proposed design meets current code. For a residence to be code compliant the proposed design TDV energy[18] must be equal to or less than the standard design TDV energy[19]. In this analysis, the residence designed to meet the 2016 code has a TDV energy of 38.11 kTDV/ft2-yr. This is a 2.4% (.94 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the residence designed to achieve ZNE is calculated to be 35.59 kTDV/ft2-yr, an 8.9% (3.46 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 5a). The increase in compliance of the ZNE residence represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

The retail portion of the analysis is considered Commercial / Non-Residential, and the inputs were used for a General retail space. As General retail, the loads assumed by the software are consistent with non-specific retail space. For the retail space a total annual site energy consumption of 99,053 kWh and 526 therms for the code compliant building. While the energy consumption to achieve ZNE is predicted to be an annual site energy consumption of 89,912 kWh and 529 therms (Figure 5b). This reflects the increased efficiency of the ZNE features.

CBECC calculates the TDV energy use of the retail space to verify that the proposed design meets current code. For a retail space to be code compliant the proposed design TDV energy[20] must be equal to or less than the standard design TDV energy[21]. In this analysis, the retail spaceesigned to meet the 2016 code has a TDV energy of 257.34 kTDV/ft2-yr. This is a 0.8% (1.90 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the retail space designed to achieve ZNE is calculated to be 226.47 kTDV/ft2-yr, a 12.7% (32.82 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 5). The increase in

[17] The higher number in the unregulated loads for the ZNE residence is due to the rounding function in the software, rounding up for each unit in the 10 plex building. This is not a material difference.
[18] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled
[19] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code
[20] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled
[21] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code

compliance of the ZNE retail space represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

Overall PV analysis for the combined 2-Story 10-Plex over the retail space, using Natural Gas and Electric follows.

The PV system that ConSol used in the analysis consists of premium 345 watt PV panels facing 270° (West), 180° (South) and 90° (East). The prototype building that was modeled is L shaped, has a first floor with 7,650 square feet of retail space, a second and a third floor each with 7,650 square feet of living space consisting of 5 apartments approximately 1500 square feet each unit. A total of 10 apartment units over the retail space. The building has a sloped roof with a peak, and will accommodate the same number of panels as the mixed use building with 1 story of apartments, i.e., a maximum of 85 PV panels could be put facing West, 76 panels facing South and 85 panels facing East. The configuration for this mixed use building requires a 94.7 kW PV system for the combined energy use, and a minimum of 143,229 kWh of annual PV production is needed for the building to be ZNE. The software used to model the commercial building does not give a size for the PV system, so the PV system size given here represents PV generation that will cover all electricity use. The results show that 85 panels facing West, 76 panels facing South, and 85 panels facing East produce 127,670 kWh per year. An additional 15,559 kWh per year would need to be generated by PV installed on a parking canopy for this building to reach ZNE. The additional PV generation required could be achieved with 28 panels facing south, which requires 539 square feet of space. More efficient panels, which would reduce the square footage of PV panels required, may be used to achieve ZNE as long as the minimum annual PV production is achieved.

The Fire Code setback requirements assumed for rooftop PV installation are the same as stated earlier.

If ten Level 2 EV chargers are added for the 10 residential units and each EV charger will use an average of 2,865 kWh per year, then an additional 28,650 kWh per year will need to be generated, which will require 51 additional panels (facing South). This additional PV array would most likely need to be installed as parking canopy.

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**0.8%**	**12.7%**
Worst Case Magin Above Code (2016 Code) - kTDV	**1.90**	**32.82**
Standard Design Budget	**259.29**	**259.29**
Proposed Design Budget	**257.34**	**226.47**
Proposed Energy Design Rating (EDR)	**N/A**	**N/A**
PV System Size	**N/A**	**0.0**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R6	**R-21+R8**
Envelope: Glazing (U-Factor / SHGC)		
Fixed	0.57 / 040	0.57 / 040
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Furnace - Package	Furnace - Package
Space Heating Efficiency (AFUE)	0.80	0.80
Space Cooling Type	A/C - Package	A/C - Package
Space Cooling Efficiency (SEER / EER)	14 / 12.0	14 / 12.0
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Uncond. Space	Uncond. Space
Water Heating		
Water Heater Type	50 Gallon / Storage	50 Gallon / Storage
Water Heater Efficiency (EF)	0.78	0.78
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 5

Lilac Hills Ranch Escondido Climate Zone 10 10-Plex / 15,300 Sqft. / 2-Story / 11.6% Glazing / 30 Bedrm	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features + PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**2.4%**	**8.9%**
Worst Case Magin Above Code (2016 Code) - kTDV	**0.94**	**3.46**
Standard Design Budget	**39.05**	**39.05**
Proposed Design Budget	**38.11**	**35.59**
Proposed Energy Design Rating (EDR)	**54.4**	**52.9**
PV System Size	**N/A**	**35.0**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4	**R-21+R8**
Attic Insulation - Flat Portions	R-38	R-38
Floor Insulation - Subfloor	R-19	R-19
Insulation Installation [Verification] - QII	Required	Required
Air Infiltration [Testing] - Blower Door	7.0 ACH (Default)	7.0 ACH (Default)
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.20 / 0.85	0.20 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	**R-19**
Flat Roof cavity Insulation	N/A	N/A
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.31 / 0.22	**0.30 / 0.23**
Single Hung	0.31 / 0.22	**0.30 / 0.23**
Fixed	0.31 / 0.22	**0.30 / 0.23**
Patio Door	0.31 / 0.22	**0.30 / 0.23**
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type - Radiant	Boiler	Boiler
Space Heating Efficiency (AFUE)	0.78	0.78
Space Cooling Type	Mini Split	Mini Split
Space Cooling Efficiency (SEER / EER)	16 / 12.2	16 / 12.2
HVAC: Duct System		
Duct Insulation R-Value	N/A	N/A
Duct Location	N/A	N/A
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	71 cfm (Plan 1) 84 cfm (Plan 2)	71 cfm (Plan 1) 84 cfm (Plan 2)
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)
Whole House Fan	N/A	N/A
Water Heating		
Water Heater Type	Tankless	Tankless
Water Heater Efficiency (EF)	0.82	**0.98**
Fuel Source	Natural Gas	Natural Gas
Distribution Type	Standard	Standard

Figure 5a

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	99053.0	89912.0
Therms	526.0	529.0
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	0.0	0.0
Appliance & Cooking kWh	0.0	0.0
Plug Load kWh	0.0	0.0
Exterior Lighting kWh	0.0	0.0
Appliance & Cooking Therms	0.0	0.0
Total kWh	99053.0	89912.0
Total Therms	526.0	529.0
PV Sizing (kW)		0.0
PV Production kWH		N/A
PV Production TDV		N/A
PV Production EDR		N/A
Proposed Design TDV		N/A
Proposed Design EDR		N/A
Final EDR of Proposed Design w/ PV		N/A

Figure 5b

Lilac Hills Ranch Escondido Climate Zone 10 0-Plex / 15,300 Sqft. / 2-Story / 11.6% Glazing / 30 Bedrm	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	8949.3	8875.0
Therms	1173.3	973.1
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	3712.7	3712.7
Appliance & Cooking kWh	8082.2	8099.6
Plug Load kWh	20258.8	20258.8
Exterior Lighting kWh	893.2	893.2
Appliance & Cooking Therms	439.7	439.7
Total kWh	41896.2	41839.3
Total Therms	1613.0	1412.8
PV Sizing (kW)		35.0
PV Production kWH		53317.3
PV Production TDV		87.1
PV Production EDR		53.40
Proposed Design TDV		86.2
Proposed Design EDR		52.90
Final EDR of Proposed Design w/ PV		-0.6

Figure 5c

Mixed Use (5-Plex – 1 Story over Retail) – with All Electric Usage

CBECC calculates the annual site energy consumption for the 7,650 square foot 1 story 5-plex apartment building, in an all-electric configuration that meets the 2016 code is 6,557 kWh and zero therms for the regulated loads and 21,894 kWh and zero therms for the unregulated loads. This equates to a total annual site energy consumption of 28,451 kWh and zero therms for the 2016 code compliant residential portion of the mixed use building. The code compliant 5 unit apartment building is significantly above code thus it reflects the increased efficiency of the ZNE residence without an increase features (Figure 6c).

CBECC calculates the TDV energy use of the 1 story, 5 unit, all-electric apartment building to verify that the proposed design meets current code. For a residence to be code compliant the proposed design TDV energy[22] must be equal to or less than the standard design TDV energy[23]. In this analysis, the residence designed to meet the 2016 code has a TDV energy of 44.12 kTDV/ft2-yr. This is a 14.5% (7.51 kTDV/ft2-yr) improvement over the standard design (Figure 6a). The TDV energy use for the residence designed to achieve ZNE is equal to the 2016 Title 24 standard design. There is no difference in the TDV energy use from the 2016 code compliant building to the ZNE building because of the increased efficiency of the all-electric HVAC and water heating equipment.

The retail portion of the analysis is considered Commercial / Non-Residential, and the inputs were used for a General retail space. As General retail, the loads assumed by the software are consistent with non-specific retail space. For the retail space a total annual site energy consumption of 99,053 kWh and 526 therms for the code compliant building. While the energy consumption to achieve ZNE is predicted to be an annual site energy consumption of 89,912 kWh and 529 therms (Figure 5b). This reflects the increased efficiency of the ZNE features.

CBECC calculates the TDV energy use of the retail space to verify that the proposed design meets current code. For a retail space to be code compliant the proposed design TDV energy[24] must be equal to or less than the standard design TDV energy[25]. In this analysis, the retail space designed to meet the 2016 code has a TDV energy of 267.19 kTDV/ft2-yr. This is a 0.2% (.64 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the retail space designed to achieve ZNE is calculated to be 235.09 kTDV/ft2-yr, a 12.2% (32.74 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 6b). The increase in compliance of the ZNE retail space represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

Overall PV analysis for the combined 1-Story 5-Plex over the retail space, All Electric, follows.

[22] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled
[23] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code
[24] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled
[25] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code

The overall PV analysis for the combined 1-Story 5-plex over the retail space in an all-electric format consists of premium 345 watt PV panels facing 270° (West), 180° (South) and 90° (East). The prototype building is the same as the one used in the mixed use building analysis above. First floor retail space and a second floor with 5 apartments. The building can accommodate the same number of PV panels; a maximum of 85 PV panels could be put facing West, 76 panels facing South and 85 panels facing East.

The configuration for this mixed use all electric building requires an 85.6 kW PV system for the combined energy use, and a minimum of 128,613 kWh of annual PV production is needed for the building to be ZNE. The results show that 85 panels facing West, 76 panels facing South, and 87 panels facing East produces 128,618 kWh per year. The rooftop of this building then can possibly accommodate the PV necessary to reach ZNE, using 3 separate roof planes, and assuming the roof design can accommodate this number of solar panels. More efficient panels may be used if available.

The Fire Code setback requirements assumed for rooftop PV installation are the same as stated earlier.

If five Level 2 EV chargers are added for the 5 residential units and each EV charger will use an average of 2,865 kWh per year, then an additional 14,325 kWh per year will need to be generated, which will require 26 additional panels (facing South). This additional PV array could be installed in a common area such as a parking canopy, and would require approximately 500 square feet of space.

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Building Features	2019 Building Features
Run	Base	Enhanced w/ 2019 Features
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	0.2%	12.2%
Worst Case Magin Above Code (2016 Code) - kTDV	0.64	32.74
Standard Design Budget	267.83	267.83
Proposed Design Budget	267.19	235.09
Proposed Energy Design Rating (EDR)	N/A	N/A
PV System Size	N/A	0.0
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R6	R-21+R8
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	N/A	N/A
Single Hung	N/A	N/A
Fixed	0.57 / 040	0.57 / 040
Patio Door	N/A	N/A
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Heat Pump - Furnace	Heat Pump - Furnace
Space Heating Efficiency (HSPF)	8.20	8.20
Space Cooling Type	Heat Pump / A/C	Heat Pump / A/C
Space Cooling Efficiency (SEER / EER)	14 / 11.5	14 / 11.5
SEER [Verification]	N/A	N/A
EER [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Uncond. Space	Uncond. Space
Water Heating		
Water Heater Type	50 Gallon / Storage	50 Gallon / Storage
Water Heater Efficiency (EF)	0.93	0.93
Fuel Source	Electric	Electric
Distribution Type	Standard	Standard

Figure 6

Lilac Hills Ranch Escondido Climate Zone 10 5-Plex / 7,650 Sqft. / 1-Story / 11.6% Glazing / 15 Bedrm.	2016 Building Features	2019 Building Features
Run	Base	Base w/ PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**14.5%**	**14.5%**
Worst Case Magin Above Code (2016 Code) - kTDV	**7.51**	**7.51**
Standard Design Budget	**51.63**	**51.63**
Proposed Design Budget	**44.12**	**44.12**
Proposed Energy Design Rating (EDR)	**60.0**	**60.0**
PV System Size	**N/A**	**21.5**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4	R-21+R4
Attic Insulation - Flat Portions	R-38	R-38
Floor Insulation - Subfloor	R-19	R-19
Insulation Installation [Verification] - QII	N/A	N/A
Air Infiltration [Testing] - Blower Door	7.0 ACH (Default)	7.0 ACH (Default)
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.20 / 0.85	0.20 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	R-13
Flat Roof cavity Insulation	N/A	N/A
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.32 / 0.25	0.32 / 0.25
Single Hung	0.32 / 0.25	0.32 / 0.25
Fixed	0.32 / 0.25	0.32 / 0.25
Patio Door	0.32 / 0.25	0.32 / 0.25
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Package Heat Pump	Package Heat Pump
Space Heating Efficiency (HSPF)	8.20	8.20
Space Cooling Type	Package Heat Pump	Package Heat Pump
Space Cooling Efficiency (SEER / EER)	14 / 12.0	14 / 12.0
SEER [Verification]	N/A	N/A
EER [Verification]	Required	Required
Refrigerant Charge [Verification/Testing]	N/A	N/A
Fan Watt Draw [Testing]	0.58 W/cfm	0.58 W/cfm
Adequate Airflow [Testing]	350 cfm/ton	350 cfm/ton
Low Leakage Air Handler [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-6	R-6
Duct Location	Cond. Space	Cond. Space
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	71 cfm (Plan 1) 84 cfm (Plan 2)	71 cfm (Plan 1) 84 cfm (Plan 2)
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)
Water Heating		
Water Heater Type	Heat Pump	Heat Pump
Water Heater Efficiency (EF)	3.39	3.39
Fuel Source	Electric	Electric
Distribution Type	Standard	Standard

Figure 6a

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	105328.0	95848.0
Therms	0.0	0.0
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	0.0	0.0
Appliance & Cooking kWh	0.0	0.0
Plug Load kWh	0.0	0.0
Exterior Lighting kWh	0.0	0.0
Appliance & Cooking Therms	0.0	0.0
Total kWh	105328.0	95848.0
Total Therms	0.0	0.0
PV Sizing (kW)		0.0
PV Production kWH		N/A
PV Production TDV		N/A
PV Production EDR		N/A
Proposed Design TDV		N/A
Proposed Design EDR		N/A
Final EDR of Proposed Design w/ PV		N/A

Figure 6b

Lilac Hills Ranch Escondido Climate Zone 10 5-Plex / 7,650 Sqft. / 1-Story / 11.6% Glazing / 15 Bedrm.	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	6556.8	6556.8
Therms	0.0	0.0
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	1856.3	1856.3
Appliance & Cooking kWh	9461.4	9461.4
Plug Load kWh	10129.4	10129.4
Exterior Lighting kWh	446.6	446.6
Appliance & Cooking Therms	0.0	0.0
Total kWh	28450.5	28450.5
Total Therms	0.0	0.0
PV Sizing (kW)		21.5
PV Production kWH		32764.6
PV Production TDV		107.0
PV Production EDR		60.95
Proposed Design TDV		105.4
Proposed Design EDR		59.99
Final EDR of Proposed Design w/ PV		-1.0

Figure 6c

Mixed Use (10-Plex – 2 Story over Retail) – with All Electric Usage

CBECC calculates the annual site energy consumption for the 15,300 square foot, 2 story 10-plex apartment building that meets the 2016 code is 11,872 kWh and zero therms for the regulated loads and 43,762 kWh and zero therms for the unregulated loads. This equates to a total annual site energy consumption of 55,634 kWh and zero therms for the 2016 code compliant 2 story, 10 unit apartment portion of the mixed use building (Figure 7c). The code compliant home is significantly above code thus it reflects the increased efficiency of the ZNE residence without an increase features.

CBECC calculates the TDV energy use of the same 2 story, 10 unit apartment building to verify that the proposed design meets current code. For a residence to be code compliant the proposed design TDV energy[26] must be equal to or less than the standard design TDV energy[27]. In this analysis, the residence designed to meet the 2016 code has a TDV energy of 42.37 kTDV/ft2-yr. This is a 14.6% (7.26 kTDV/ft2-yr) improvement over the standard design (Figure 7a). The TDV energy use for the residence designed to achieve ZNE is equal to the improvement over the 2016 code standard design. . There is no difference in the TDV energy use from the 2016 code compliant building to the ZNE building because of the increased efficiency of the all-electric HVAC and water heating equipment.

The retail portion of the analysis is considered Commercial / Non-Residential, and the inputs were used for a General retail space. As General retail, the loads assumed by the software are consistent with non-specific retail space. For the retail space a total annual site energy consumption of 99,053 kWh and 526 therms for the code compliant building. While the energy consumption to achieve ZNE is predicted to be an annual site energy consumption of 89,912 kWh and 529 therms (Figure 5b). This reflects the increased efficiency of the ZNE features.

The CEC's Compliance software calculates the TDV energy use of the retail space to verify that the proposed design meets current code. For a retail space to be code compliant the proposed design TDV energy[28] must be equal to or less than the standard design TDV energy[29]. In this analysis, the building designed to meet the 2016 code has a TDV energy of 267.19 kTDV/ft2-yr. This is a 0.2% (.64 kTDV/ft2-yr) improvement over the standard design. The TDV energy use for the retail space designed to achieve ZNE is calculated to be 235.09 kTDV/ft2-yr, a 12.2% (32.74 kTDV/ft2-yr) improvement over the 2016 code standard design (Figure 7). The increase in compliance of the ZNE building represents the increase in energy efficiency that is anticipated in the next code cycle (2019 Title 24, Part 6).

Overall PV analysis for the combined 2-Story 10-Plex over the retail space, All Electric Use, follows.

[26] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled
[27] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code
[28] Proposed design TDV energy is the projected TDV energy used by residence using the features modeled
[29] Standard design TDV energy is the projected TDV energy used when the residence meets the prescriptive requirements listed in Table 150.1-A (Package-A) of the 2016 California Energy Code

The PV system that ConSol used in the analysis consists of premium 345 watt PV panels facing 270° (West), 180° (South) and 90° (East). The prototype building is the same as the one used in the mixed use building analysis above. First floor retail space and a second floor with 10 apartments. The building can accommodate the same number of PV panels, a maximum of 85 PV panels could be put facing West, 76 panels facing South and 85 panels facing East.

The system configuration for this mixed use all electric building requires a 104.3 kW PV system for the combined energy use, and a minimum of 159,300 kWh of annual PV production is needed for the building to be ZNE. The results show that 85 panels facing West, 76 panels facing South, and 85 panels facing East produces 127,670 kWh / yr. An additional 31,630 kWh / yr would need to be generated by either additional PV which could be installed in a common area such as a parking canopy, or more efficient panels may be used if available for this building to reach ZNE. The additional PV generation required could be achieved with (56) 345 watt panels facing south, which requires 1,078 square feet of space.

The Fire Code setback requirements assumed for rooftop PV installation are the same as stated earlier.

If 10 EV chargers are added for the 10 residential units and each EV charger will use an average of 2,865 kWh per year, then an additional 28,650 kWh per year will need to be generated, which will require 51 additional panels (facing South). This additional PV array could be installed in a common area, such as parking canopy, requiring approximately 982 square feet of space or more efficient panels may be used if available.

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Building Features	2019 Building Features
Run	**Base**	**Enhanced w/ 2019 Features**
File Number	**0**	**2**
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	**0.2%**	**12.2%**
Worst Case Magin Above Code (2016 Code) - kTDV	**0.64**	**32.74**
Standard Design Budget	**267.83**	**267.83**
Proposed Design Budget	**267.19**	**235.09**
Proposed Energy Design Rating (EDR)	**N/A**	**N/A**
PV System Size	**N/A**	**0.0**
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R6	**R-21+R8**
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	N/A	N/A
Single Hung	N/A	N/A
Fixed	0.57 / 040	0.57 / 040
Patio Door	N/A	N/A
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Heat Pump - Furnace	Heat Pump - Furnace
Space Heating Efficiency (HSPF)	8.20	8.20
Space Cooling Type	Heat Pump / A/C	Heat Pump / A/C
Space Cooling Efficiency (SEER / EER)	14 / 11.5	14 / 11.5
SEER [Verification]	N/A	N/A
EER [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-8	R-8
Duct Location	Uncond. Space	Uncond. Space
Water Heating		
Water Heater Type	50 Gallon / Storage	50 Gallon / Storage
Water Heater Efficiency (EF)	0.93	0.93
Fuel Source	Electric	Electric
Distribution Type	Standard	Standard

Figure 7

Lilac Hills Ranch Escondido Climate Zone 10 10-Plex / 15,300 Sqft. / 2-Story / 11.6% Glazing / 30 Bedrm	2016 Building Features	2019 Building Features
Run	Base	Base w/ PV
File Number	0	2
Software	CBECC-Res 2016.2.1 (868)	CBECC-Res 2016.2.1 (868)
Compliance Margins		
Worst Case % Above Code (2016 Code)	14.6%	14.6%
Worst Case Magin Above Code (2016 Code) - kTDV	7.26	7.26
Standard Design Budget	49.63	49.63
Proposed Design Budget	42.37	42.37
Proposed Energy Design Rating (EDR)	60.2	60.2
PV System Size	N/A	42.0
Envelope: Opaque Surfaces		
Wall Insulation - 2x4 Exterior Walls	N/A	N/A
Wall Insulation - 2x6 Exterior Walls	R-21+R4	R-21+R4
Attic Insulation - Flat Portions	R-38	R-38
Floor Insulation - Subfloor	R-19	R-19
Insulation Installation [Verification] - QII	N/A	N/A
Air Infiltration [Testing] - Blower Door	7.0 ACH (Default)	7.0 ACH (Default)
Roofing Material	Tile	Tile
Roofing Properties (Reflectance / Emittance)	0.20 / 0.85	0.20 / 0.85
Radiant Barrier	N/A	N/A
Above Roof Deck Insulation	N/A	N/A
Below Roof Deck Insulation	R-13	R-13
Flat Roof cavity Insulation	N/A	N/A
Ventilated Attic (Yes / No)	Yes	Yes
Envelope: Glazing (U-Factor / SHGC)		
Horizontal Slider	0.32 / 0.25	0.32 / 0.25
Single Hung	0.32 / 0.25	0.32 / 0.25
Fixed	0.32 / 0.25	0.32 / 0.25
Patio Door	0.32 / 0.25	0.32 / 0.25
French Door	N/A	N/A
HVAC: Space Heating, Cooling Systems		
Space Heating Type	Heat Pump - Furnace	Heat Pump - Furnace
Space Heating Efficiency (HSPF)	8.20	8.20
Space Cooling Type	Heat Pump / A/C	Heat Pump / A/C
Space Cooling Efficiency (SEER / EER)	14 / 12.0	14 / 12.0
SEER [Verification]	N/A	N/A
EER [Verification]	Required	Required
Refrigerant Charge [Verification/Testing]	N/A	N/A
Fan Watt Draw [Testing]	0.58 W/cfm	0.58 W/cfm
Adequate Airflow [Testing]	350 cfm/ton	350 cfm/ton
Low Leakage Air Handler [Verification]	N/A	N/A
HVAC: Duct System		
Duct Insulation R-Value	R-6	R-6
Duct Location	Cond. Space	Cond. Space
HVAC: Mechanical Ventilation		
Minimum Whole-House Ventilation, Continuous	71 cfm (Plan 1) 84 cfm (Plan 2)	71 cfm (Plan 1) 84 cfm (Plan 2)
Ventilation System Type	Exhaust	Exhaust
Ventilation System Efficiency (cfm / W/cfm)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)	71 / 0.25 (Plan 1) 84 / 0.25 (Plan 2)
Water Heating		
Water Heater Type	Heat Pump	Heat Pump
Water Heater Efficiency (EF)	3.39	3.39
Fuel Source	Electric	Electric
Distribution Type	Standard	Standard

Figure 7a

Lilac Hills Ranch Escondido Climate Zone 10 Retail / 7,650 Sqft. / 1-Story / 18.8% Glazing	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	105328.0	95848.0
Therms	0.0	0.0
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	0.0	0.0
Appliance & Cooking kWh	0.0	0.0
Plug Load kWh	0.0	0.0
Exterior Lighting kWh	0.0	0.0
Appliance & Cooking Therms	0.0	0.0
Total kWh	105328.0	95848.0
Total Therms	0.0	0.0
PV Sizing (kW)		0.0
PV Production kWH		N/A
PV Production TDV		N/A
PV Production EDR		N/A
Proposed Design TDV		N/A
Proposed Design EDR		N/A
Final EDR of Proposed Design w/ PV		N/A

Figure 7b

Lilac Hills Ranch Escondido Climate Zone 10 10-Plex / 15,300 Sqft. / 2-Story / 11.6% Glazing / 30 Bedrm	2016 Code Compliant Building	ZNE Building
Regulated Loads from CBEEC Log File (Space Heating, Cooling & Water Heating)		
kWh	11871.9	11871.9
Therms	0.0	0.0
Unregulated Loads from CBECC Log File (Inside & Exterior Lighting, Appliance & Cook, Plug Loads)		
Interior Lighting kWh	3712.7	3712.7
Appliance & Cooking kWh	18897.2	18897.2
Plug Load kWh	20258.8	20258.8
Exterior Lighting kWh	893.2	893.2
Appliance & Cooking Therms	0.0	0.0
Total kWh	55633.8	55633.8
Total Therms	0.0	0.0
PV Sizing (kW)		42.0
PV Production kWH		63454.3
PV Production TDV		104.2
PV Production EDR		60.60
Proposed Design TDV		103.6
Proposed Design EDR		60.20
Final EDR of Proposed Design w/ PV		-0.4

Figure 7c

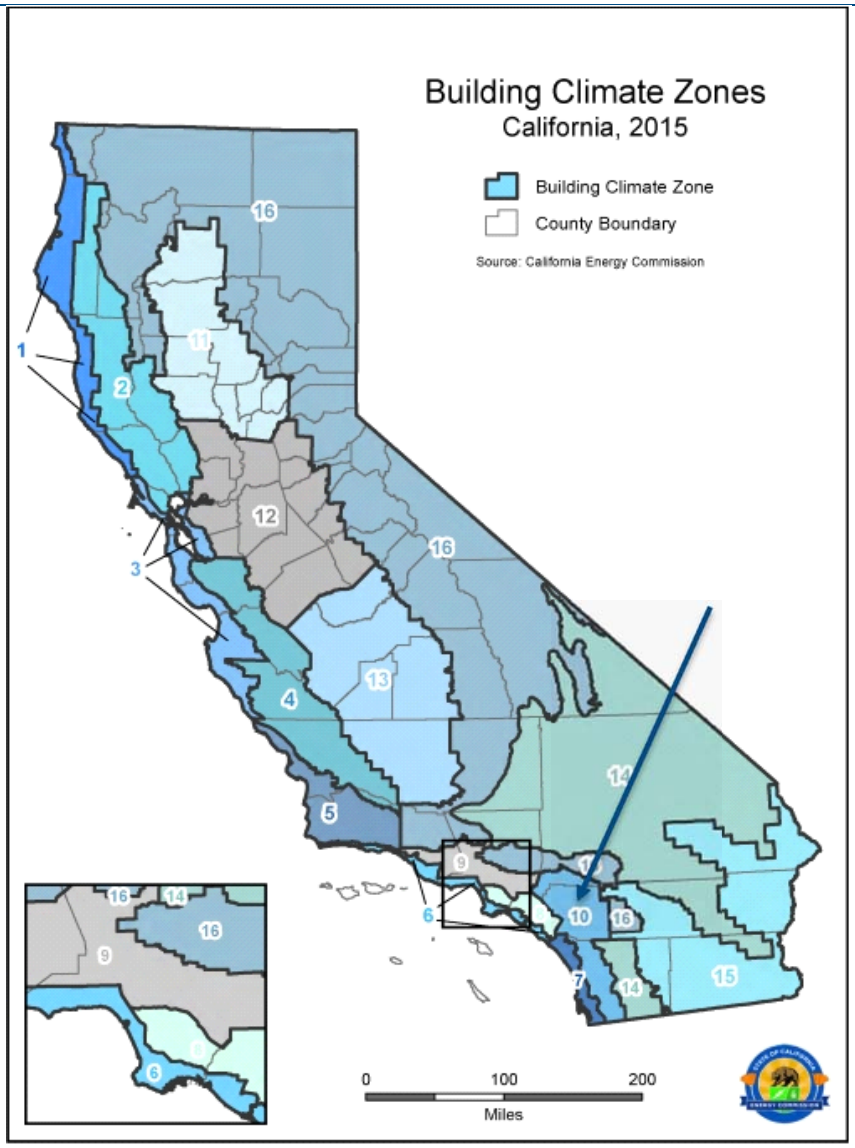


Figure 8 CEC Climate Zone Map

The arrow points to Climate Zone 10 where Lilac Hills Ranch is located

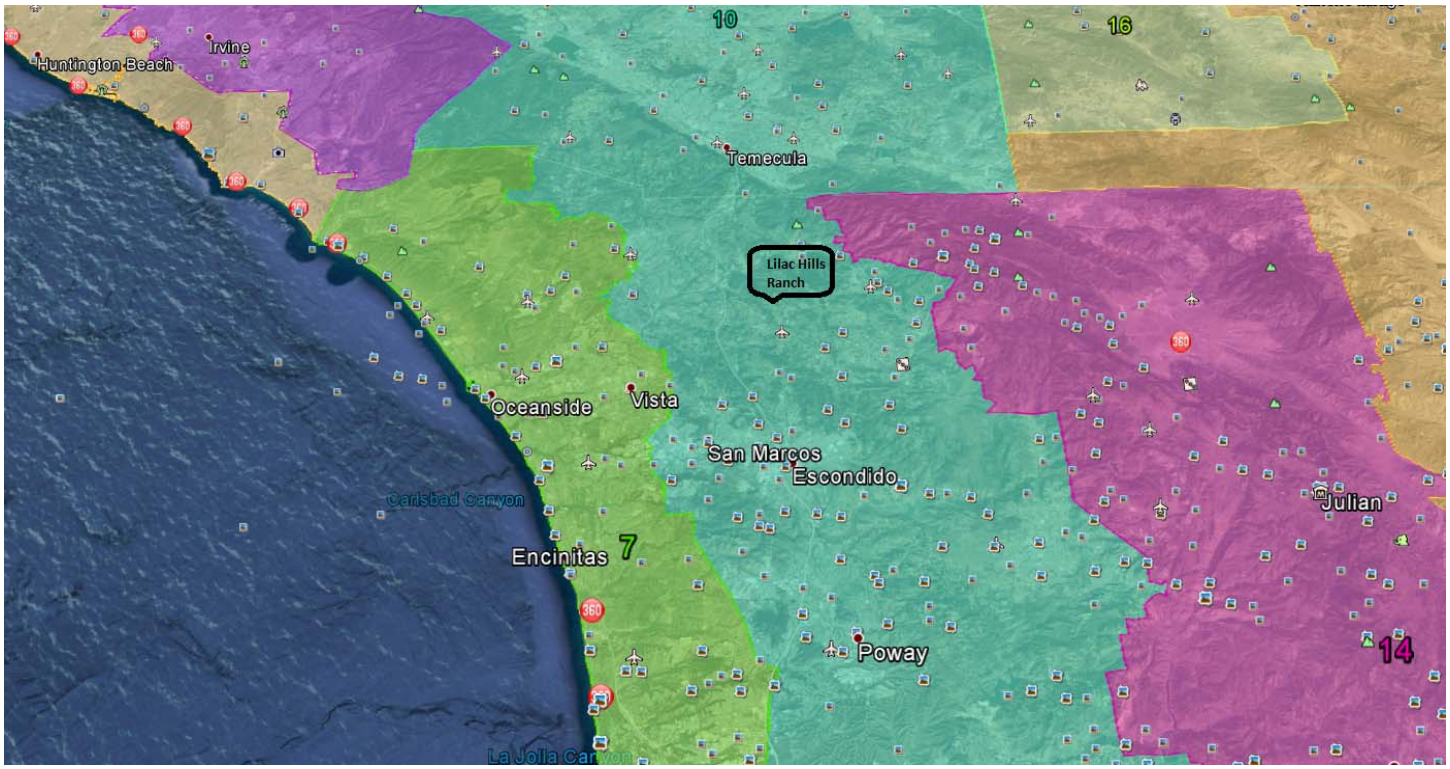


Figure 8a Google earth Overlay of CA Climate Zones

Lilac Hills Ranch location noted in Climate Zone 10

ATTACHMENT E:

Tree Count and
Vegetation Analysis

Wimmer Yamada and Caughey

LILAC HILLS RANCH

Landscape Report

September 15, 2017

Wimmer Yamada and Caughey

Wimmer
Yamada
and
Caughey

Patrick W. Caughey RLA, FASLA
President
Dennis Otsuji RLA, FASLA
Principal
Joseph Y. Yamada RLA, FASLA
Co-founder
Harriett B. Wimmer FASLA
Founder 1899-1980

September 15, 2017

Jon Rilling
Lilac Hills Ranch
11452 El Camino Real
Suite 120
San Diego Ca. 92130

Project: Lilac Hills Ranch
Re: Proposed Tree Counts for Project

Dear Jon:

In reference to the attached analysis, ***Summary of Tree Counts "Industry Standard"*** and the ***Summary of Tree Counts "Betterments"***, we offer this narrative.

In general, the approach of this analysis classifies the site into two portions: the **Designed Area** and the **Un-Designed Area**. The **Designed Area** is the area located within the current Tentative Map on the northwest portion of the site (now under review by the County of San Diego, Department of Planning and Land Use). The **Un-Designed Area** is the remaining southern portion of the site, yet to be designed.

Currently, there are no code requirements for tree quantities for this type of project. Therefore, tree quantities shown on the "***Industry Standard***" document are based on typical standards of professional practice for land development within the County of San Diego. On the other hand, tree quantities shown on the ***"Betterments"*** document represent a more robust footprint of trees throughout the development, well beyond the typical standards of professional practice. From many perspectives, the ***"Betterments"*** approach is preferred, as it offers innumerable benefits…many that cannot be quantified, measured, or calculated. Incorporating additional trees on the project does much more than just enhance the aesthetic beauty of the site. For more detailed examples the following are detailed benefits:

Trees Benefit The Environment: Trees improve our health. They clean the air we breathe and reduce the effects of global warming by removing carbon dioxide, sulfur dioxide, nitrous oxides, and other pollutants…while producing and releasing the oxygen that we all need to live. Trees reduce the heat island effect by providing shade and transpiration.

The quantity of trees used within a landscape design can have a substantial effect on reducing carbon from our atmosphere. "*Carbon Sequestration*" is the process of taking in carbon dioxide out of the atmosphere and storing it in organic tissue of plants – specifically trees. We have attached four exhibits from various national resources that describe the benefits of Carbon Sequestration within the appendix of this report.

Trees also help to cool homes and businesses in the heat of summer, reducing the energy load on the power grid from air conditioning units. Trees provide food and habitat for birds, beneficial insects (such as bees and butterflies), and other urban wildlife. Trees help handle stormwater runoff and reduce flooding. In addition, the root systems of trees treat water pollution and prevent soil erosion.

Trees Benefit Communities: Research shows that the presence of trees encourages people to get outside and socialize. Trees provide relaxing shade and create spaces to enjoy and appreciate. They connect us to nature and activate the human senses. They provide healthy feelings of relaxation. The presence of trees lowers blood pressure, reduces stress, and provides a sense of well-being. They create a pleasing visual aesthetic and a sense of place. From a sustainable perspective, trees create walkable communities.

Trees Benefit the Economy: Healthy, mature trees raise property values, increasing them by an average of 10% (*US Department of Agriculture Forest Service*). Trees are high-yield assets. As an example, the City of Chicago values the total amount of its trees at $2.3 billion. In addition, trees have a documented return on investment (ROI). The ROI for trees in Arizona is $2.23 for every $1 invested (*US Department of Agriculture Forest Service*). Trees can be a stimulus to economic development, attracting new business and tourism. Commercial retail areas are more attractive to shoppers, apartments rent more quickly, tenants stay longer, and space in a wooded setting is more valuable to sell or rent (*The Arbor Day Foundation*).

Shrub Plantings and Use of Groundcovers in Aiding with Carbon Sequestration: Shrubs and groundcover also contribute to carbon sequestration by storing carbon in their leaves, stems, and roots. Amended soils with organic material, composting, organic mulch and the like also contribute to the capturing of carbon, slowing the accumulation of CO2. Vegetative Mass is key to increasing the exchange of carbon dioxide for oxygen. (See Supplemental Document 'C')

Lastly, the attached information listed below, provides further evidence to support the role of tree use in providing carbon sequestration benefits through the overall Lilac Hills Ranch community landscape.

Please feel free to contact me if you have any questions or comments.

Sincerely,
WIMMER YAMADA AND CAUGHEY

Pat Caughey, FASLA, RLA
President

Documents included:

1. *Summary of Tree Counts "Industry Standard". (pg.5)*
2. *Summary of Tree Counts "Betterments". (pg.6)*
3. *Land Use Summary, exported from SP. (pg.7)*
4. *Specific Plan Map, exported from SP. (pg.8)*
5. *Department of Environmental Conservation, New York State (see Supplemental Document 'A')*
6. *Calculation of Carbon Sequestration - Broward County, Florida (see Supplemental Document 'B')*
7. *USDA Forest Service – Carbon Sequestration (see Supplemental Document 'C')*
8. *Method for Calculating Carbon Sequestration by Trees in Urban and Suburban Settings - US Department of Energy (see Supplemental Document 'D')*

cc: Jason Jones, Dennis Otsuji, Matt Clemens – WYAC
File 12-009.000 - Landscape Report, 9-15-17, mc, docx.

Wimmer Yamada and Caughey

LILAC HILLS RANCH

Summary of Tree Counts "Industry Standard"

September 15, 2017

PROPOSED DEVELOPED AREA DESCRIPTION	AREA (Per Table 1 - Land Use Summary)	UNITS	% OF TREES	TREE COUNT
Implementing Tentative Map (Designed Area) See attached, TM Implementing Conceptual Landscape Plan-Part-1 &2				
*Tentative Map Area	5,199,443	SF		
*Tentative Map (slopes only)	1,256,840	SF	1 per 800 SF	1,571
*Tentative Map (streets only)	33,136	LF	1 per 75 LF	442
Master Tentative Map (Un-Designed Area) See page 8, Specific Plan Map, Figure 3,				
*Parks - Dedicated to County	588,060	SF	1 per 500 SF	1,176
*Parks - HOA	439,956	SF	1 per 500 SF	880
*Community Purpose Facility	87,120	SF	1 per 900 SF	97
*Common Areas / Agricultural Buffers	884,268	SF	1 per 800 SF	1,105
*Manipulated Slopes	2,970,792	SF	1 per 800 SF	3,713
*Major Arterial Streets	39,450	LF	1 per 40 LF	986
*Residential	11,120,810	SF		
*Residential (slopes only) at 25% of total area	2,780,202	SF	1 per 800 SF	3,475
*Residential (streets only) at .65% of total area	72,285	LF	1 per 40 LF	1,807
Total Number of Trees	21,329,899			15,253

Non-disturbed open space and wetland areas are not included.
If open space areas are disturbed, slope areas will require 1 “Container Plant” per 100 square feet per San Diego County Landscape Requirements.

Wimmer Yamada and Caughey

LILAC HILLS RANCH

Summary of Tree Counts "Betterments"

September 15, 2017

PROPOSED DEVELOPED AREA DESCRIPTION	AREA (Per Table 1 - Land Use Summary)	UNITS	% OF TREES	TREE COUNT
Implementing Tentative Map (Designed Area) See attached, TM Implementing Conceptual Landscape Plan-Part-1 &2				
*Tentative Map (slopes only)	5,199,443	SF		
*Tentative Map (slopes only)	1,256,840	SF	1 per 300 SF	4,189
*Tentative Map (streets only)	33,136	LF	1 per 30 LF	1,105
Master Tentative Map (Un-Designed Area) See page 8, Specific Plan Map, Figure 3,				
*Parks - Dedicated to County	588,060	SF	1 per 300 SF	1,960
*Parks - HOA	439,956	SF	1 per 250 SF	1,760
*Community Purpose Facility	87,120	SF	1 per 300 SF	290
*Common Areas / Agricultural Buffers	884,268	SF	1 per 300 SF	2,948
*Manipulated Slopes	2,970,792	SF	1 per 300 SF	9,903
*Major Arterial Streets	39,450	LF	1 per 30 LF	1,315
*Residential	11,120,810	SF		
*Residential (slopes only) at 25% of total area	2,780,202	SF	1 per 300 SF	9,267
*Residential (streets only) at .65% of total area	72,285	LF	1 per 30 LF	2,410
Total	21,329,899			35,146

Non-disturbed open space and wetland areas are not included.

If open space areas are disturbed, slope areas will require 1 “Container Plant” per 100 square feet per San Diego County Landscape Requirements.

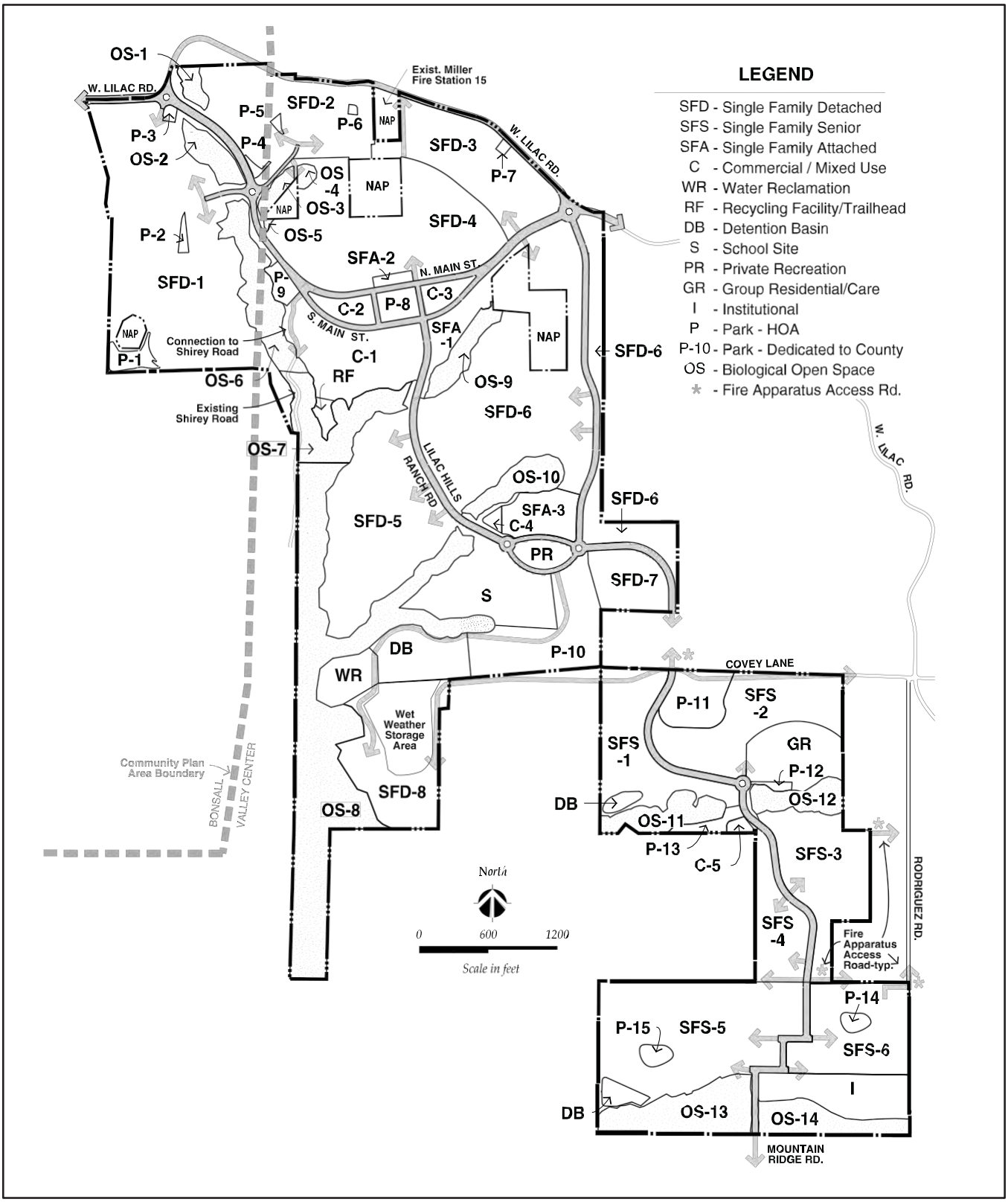
Distribution of Land Uses

The following table shows the distribution of the land uses throughout the Community.

Table 1 - Land Use Summary

Land Use	Planning Areas	Net Acreage	Dwelling Units/Square Feet (SF)	Zoning
Single-Family Detached	SFD 1-8	156.9	903	RS
Single-Family Detached - Senior Citizen Community (Age-Restricted Units)	SFS 1-6	76.9	468	RS
Single-Family Attached	SFA 1-3	7.9	164	C34
Group Care (200 beds)	GC	6.5	N/A	RS
Commercial and Mixed-Use	C1-5 6	17.3	211/ (90,000 sq. ft.)	C34
K-8 School Site	S	12.0	N/A	RS
Institutional Use	I	10	N/A	RS
Public Park	P7	13.5	N/A	RS
Private Parks	P 1-6 and within the Senior Citizen Neighborhood P-8– 11	10.1	N/A	RS
Community Purpose Facility	CPF	2.0	N/A	C34
Biological Open Space	OS	104.1	N/A	RS
Common Areas and Agricultural Open Space	--	20.3	N/A	RS
Manufactured Slopes	--	68.2	N/A	RS
Roads	--	83.3	N/A	RS
Water Reclamation Facility	WR	2.4	N/A	RS
Recycling Facility/Trail Head/Staging Area	RF	0.6	N/A	C34
Detention Basins	DB	7.9	N/A	RS
Wet weather storage	WWS	8.1	N/A	RS
TOTALS		608	1,746	

SPECIFIC PLAN MAP, FIGURE 3 / Map Source: Vance and Associates, 2013

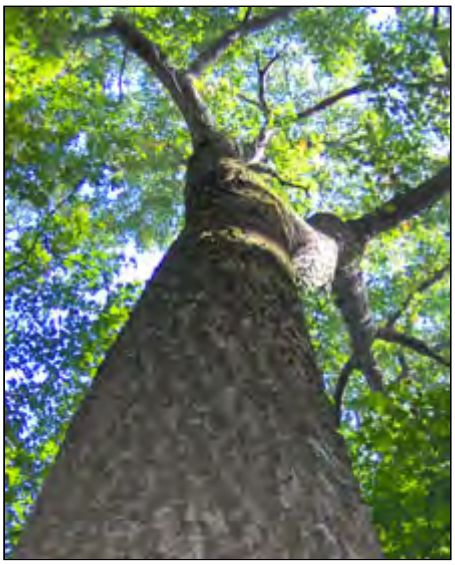


No Scale

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Supplemental Document 'A'
FOR LILAC HILLS RANCH LANDSCAPE REPORT

Trees: The Carbon Storage Experts



One half the dry weight of wood is carbon.

The heat is on. Global warming has speeded up, yet debates continue about the best way to slow the increase of carbon dioxide that is trapping heat in the Earth's atmosphere. Carbon needs to be pulled out of the atmosphere and put into long-term storage elsewhere. This process is called carbon sequestration, and high-technology ways to accomplish it are being explored worldwide.

However we don't have to wait for high tech sequestration. We can increase carbon sequestration now by working with some experts. They're called trees, and they have almost 350 million years' experience in sequestering carbon. Trees, like other green plants, use photosynthesis to convert carbon dioxide (CO2) into sugar, cellulose and other carbon-containing carbohydrates that they use for food and growth. Trees are unique in their ability to lock up large amounts of carbon in their wood, and continue to add carbon as they grow. Although forests do release some CO2 from natural processes such as decay and respiration, a healthy forest typically stores carbon at a greater rate than it releases carbon.

The actual rate of carbon sequestration will vary with species, climate and site, but in general, younger and faster growing forests have higher annual sequestration rates. Considering that one half of the weight of dried wood is carbon, trees in a forest hold a lot of carbon. When the enormous amount of carbon stored in forest soils is added to the trees' carbon, it becomes obvious that forests are major carbon storage reservoirs.

The main strategies for using forests for carbon sequestration are listed below in order of their potential for carbon sequestration in New York:

- **Active forest management** - enhancing forest growth through sustainable forestry
- **Avoided deforestation** - reducing the loss of forested land by promoting smart growth and less sprawl.
- **Forest preservation** - leaving forests undisturbed as is done in the 3 million acres of the Adirondack and Catskill Forest Preserve.
- **Afforestation** - adding forest to previously unforested land, as was done on State Forest land during the Great Depression .

Active Forest Management

Working forests are a critical component of a sustainable future for New York State. They reduce atmospheric CO2 by carbon sequestration, and they produce wood products and alternative energy. Although it may seem counterintuitive to manage a forest for both carbon sequestration and energy production, it can be done with New York's abundant post-agricultural forests. Many people do not realize how fast trees can grow in New York's climate. An abandoned farm field can be covered with a forest of good-sized trees within 50 years. Proper management of these second and third growth forests for wood products and energy production actually enhances their ability to sequester carbon by enabling the remaining trees to grow more vigorously. By mimicking the effects of natural forest events such as fire and windstorms that create beneficial openings, timber harvesting can be used to open crowded canopies and encourage the growth of specific species such as oaks.

Active forest management enhances a forest's carbon sequestration capacity by keeping the trees healthy and promoting vigorous growth. Strong healthy trees are more resistant to pests and diseases, and may also be

better able to adapt to the stresses of a changing climate and are growing more vigorously and sequestering more carbon.

DEC has more than 760,000 acres of State Forests which are managed for timber production, as well as for wildlife habitat, recreation and biodiversity.

More than 62% of New York State is forest land, which amounts to18.6 million acres, or 29,000 square miles, of land covered by trees. More than 80%, 14.8 million acres, is privately owned. About 1 million acres of this is industrial forest land owned by large timber or investment companies and actively managed for timber production.

To encourage sustainability of non-industrial private forest land, New York's Forest Stewardship Initiative helps private landowners develop forest management plans. The Forest Tax law provides incentives for managed forest lands. Many landowners have worked with Department of Environmental Conservation (DEC) Lands & Forest's Private Forest Management staff to develop management plans for their land. Almost 2 million acres of private forest land is managed under the Forest Stewardship Program and about 650,000 acres are covered by the Forest Tax Law program. But there are more than 10 million acres of private forest land outside these programs. Much of this land is left un-managed, but could contribute significant carbon sequestration under active forest management.

Avoided Deforestation

Significant land disturbance is a major source of CO_2 emissions. Human disturbance has much more impact on forests than natural disturbances such as fires or hurricanes. When forested land is converted to agriculture or development, soils are typically ploughed, graded, compacted or excavated, and then often left exposed to erosion. Natural disturbances, other than landslides, rarely cause deep damage to soil structure. Some of the CO_2 given off from forest disturbance comes from decay, but the biggest source is from the disturbed soil. Although they accumulate carbon much more slowly than trees, forest soils ultimately become storehouses for enormous amounts of carbon, over twice as much as is stored in the wood of the trees.

When forest soils are disturbed, they can lose carbon rapidly from the fast decay of organic material. In parts of the Pacific Northwest, a clear-cut replanted with conifer seedlings can continue to emit CO_2 for as long as 20 years. Even though the young trees are sequestering carbon, the accelerated rate of soil decay caused by disturbance gives off carbon at a higher rate than the young trees can take up.

While some land must be cleared in order to build, too often everything is stripped off leaving only bare soil. Although it is possible to save many mature trees during development, it is cheaper to get the trees out of the way by stripping the site. A land use study of upstate New York showed a 30 % increase in land development between 1982 and 1997, but only a 2.6 % growth in population during the same period. The study was appropriately titled Sprawl Without Growth.

There is ultimately a high price for poor development practices, a price that ends up being paid for by the community and taxpayers rather than the developer. Once the trees are gone, the many benefits, or ecosystem services, which they provided, are also gone. These benefits include reduced storm run-off, clean water, clean air and natural cooling, as well as carbon sequestration. The adverse impacts of the cleared land include increased run-off, which can overload stormwater systems, soil erosion, water pollution, and, of course, adding more CO_2 to the atmosphere.

Saving trees and planting additional trees are vital for water resource management alone, but along with the use of Smart Growth and green infrastructure for developments, could ultimately lead to better communities where trees can make a much greater contribution to improving the environment.

Forest Preservation

One forest-based carbon sequestration strategy is to preserve forests in their natural state, as has been done in the Adirondack and Catskill Forest Preserve. These forests will never be actively managed or cut. These mature

late succession forests hold vast amounts of carbon in their wood, and even more in their undisturbed organic soils. They may sequester carbon at lower rates than do managed forests with younger trees, because older trees usually grow more slowly. In un-managed forests, only natural disturbances such as storms and fire, will provide clearings where young trees can get enough sun for rapid growth. Although mature trees which generally dominate undisturbed forests don't grow as fast as young trees, they too can take advantage of the added light from natural clearings. Depending on the species, even mature trees can put on surprising growth spurts under favorable conditions.

The forests of New York's Forest Preserve lands, State Unique Areas, State Parks and other protected lands, represent substantial carbon reservoirs, particularly in their soils. They are also vital for water quality, biodiversity, wildlife habitat, preservation of very old forests, and as genetic reservoirs for the future.

Afforestation

Since the mid-nineteenth century, New York, along with most of the Northeastern states, has undergone major afforestation as millions of acres of abandoned farmland, which were covered with forest in pre-colonial times, have reverted back to forest. Consequently there are relatively limited opportunities for new, large scale additions of forest cover.

The largest potential for adding forest cover is probably in urban areas. Although urban forests may not be as effective at sequestering carbon as managed forests, they do have some sequestration capacity. However, their bigger role in greenhouse gas reduction is reducing energy used for air conditioning. Trees provide both shade and evaporative cooling which helps reduce the temperature both inside and outside a building. Increasing the amount of urban forest goes beyond just planting additional trees. The use of vines for green walls provides many of the same benefits in places where there may not be room for shade trees. Studies have shown that many plants, such as fast-growing vines, respond dramatically to higher levels of CO2 by growing faster and taking up CO2 at an increased rate.

Greater use of plants in cities not only helps save energy, but also benefits human health by improving air quality. Trees are effective at capturing particulate pollution from the air and also help lower concentrations of other air pollutants such as ozone and nitrous oxide. Trees and other plants help reduce excess runoff and water pollution by capturing and filtering stormwater. Adding green to a city can also produce direct economic benefits, such as increased tourism, and also job creation in plant-based industries, such as green roof installation.

Forests Are Truly a Green Way to Reduce CO2

Increasing the carbon sequestration capacity of New York's forests can be started now. DEC is working on policies and programs to encourage wider use of these strategies to increase forest carbon sequestration:

- Promote stewardship of private forest lands.
- Reduce unnecessary deforestation.
- Add forest, especially in urban areas.
- Increase the use of sustainable forest management.

The costs are comparatively low, and there are minimal environmental impacts. But the biggest advantage of increasing forests for carbon sequestration capacity is that there are so many environmental benefits from forests that it would be worth increasing them anyway - even if they weren't so effective at sequestering carbon.

Although forests alone can't sequester all of the excess carbon added by burning fossil fuels, they can make a difference, especially if we help and encourage them. Wisely managed forests can sequester carbon and also provide a sustainable source of fuel and lumber, help clean our air and water, preserve wildlife habitat, provide recreation opportunities and preserve the beauty of trees in their natural home for generations to come.

How to calculate the amount of CO_2 sequestered in a tree per year

We at Trees for the Future estimate that our agroforestry trees, planted in tropical climates, will sequester atmospheric carbon dioxide at an average of **50 pounds** of carbon dioxide per tree per year.

The rate of carbon sequestration depends on the growth characteristics of the tree species, the conditions for growth where the tree is planted, and the density of the tree's wood. It is greatest in the younger stages of tree growth, between 20 to 50 years.[1] Further complicating the issue is the fact that far less research has been done on tropical tree species as compared to temperate tree species.

Nevertheless, we can roughly estimate the amount of CO2 sequestered in a given tree, and if we divide by the tree's age, get a yearly sequestration rate.

We got this process from two educational websites who had conceived it as a learning activity for their students. [2] This is the process:

1. Determine the total (green) weight of the tree.
2. Determine the dry weight of the tree.
3. Determine the weight of carbon in the tree.
4. Determine the weight of carbon dioxide sequestered in the tree
5. Determine the weight of CO_2 sequestered in the tree per year

Determine the total (green) weight of the tree

Based on tree species in the Southeast United States, the algorithm to calculate the weight of a tree is: [3]

W = Above-ground weight of the tree in pounds
D = Diameter of the trunk in inches
H = Height of the tree in feet

For trees with D < 11:
$W = 0.25D^2H$

For trees with D >= 11:
$W = 0.15D^2H$

Depending on the species, the coefficient (e.g. 0.25) could change, and the variables D^2 and H could be raised to exponents just above or below 1. However, these two equations could be seen as an "average" of all the species' equations.

The root system weighs about 20% as much as the above-ground weight of the tree. Therefore, to determine the total green weight of the tree, multiply the above-ground weight of the tree by 120%.

Determine the dry weight of the tree

This is based on an extension publication from the University of Nebraska.[4] This publication has a table with average weights for one cord of wood for different temperate tree species. Taking all species in the table into account, the average tree is 72.5% dry matter and 27.5% moisture.

Therefore, to determine the dry weight of the tree, multiply the weight of the tree by 72.5%.

Determine the weight of carbon in the tree

The average carbon content is generally 50% of the tree's total volume.[5] Therefore, to determine the weight of carbon in the tree, multiply the dry weight of the tree by 50%.

Determine the weight of carbon dioxide sequestered in the tree

CO_2 is composed of one molecule of Carbon and 2 molecules of Oxygen.

The atomic weight of Carbon is 12.001115.

The atomic weight of Oxygen is 15.9994.

The weight of CO_2 is C+2*O=43.999915.

The ratio of CO_2 to C is 43.999915/12.001115=3.6663.

Therefore, to determine the weight of carbon dioxide sequestered in the tree, multiply the weight of carbon in the tree by 3.6663.[6]

Determine the weight of CO_2 sequestered in the tree per year

Divide the weight of carbon dioxide sequestered in the tree by the age of the tree. Et voila!

EXAMPLES

Estimated growth rates and sizes of agroforestry trees were taken from the World Agroforestry Centre's "Agroforestree Database"[7]:

Let's see how much a Calliandra calothyrsus might sequester in a year. A 10-year-old Calliandra would probably grow about 15 feet tall with a trunk about 8 inches in diameter. Therefore:

$W = 0.25D^2H = 0.25(8^2)(15) = 240$ lbs. green weight above ground.

240 lbs. * 120% = 288 lbs. green weight (roots included)

288 lbs. * 72.5% = 208.8 lbs. dry weight

208.8 lbs. * 50% = 104.4 lbs. carbon

104.4 lbs * 3.6663 = 382.8 lbs. CO_2 sequestered

382.8 lbs / 10 years = **38.3 lbs**. CO_2 sequestered per year

Or consider a 10-year-old Grevillia robusta, 45 feet tall with a trunk 6 inches in diameter. Using the same calculations as above, the amount of CO_2 sequestered would be **64.6** lbs. per year.

Or a newly-planted Acacia angustissima, 2.5 years old, 15 feet tall with a trunk 3 inches in diameter: **21.5** lbs. of CO2 sequestered per year.

Or an Albizzia lebbek, 15 years old, 30 feet tall, with a 12 inch trunk: **68.9** lbs. of CO2 sequestered per year.

Other methods

Another way to estimate the amount of CO2 sequestered by a tree in a year is to estimate the amount sequestered in a hectare per year, and divide that amount by the number of trees per hectare. Scanning around on the Internet, it seems that the number of trees per hectare (in agroforestry and/or industrial plantations) ranges from under 500 to over 2,000.

According to Myers and Goreau, tropical tree plantations of pine and eucalyptus can sequester an average of **10 tons** of carbon per hectare per year.[8] Therefore, the plantation can sequester an average of 20,000 lbs * 3.6663 = 73,326 lbs CO2/ha/year, or, taking an average of 1,000 trees per hectare, **73.326** lbs CO2/tree/year.

Of course, we heavily discourage the planting of pine and/or eucalyptus in our agroforestry systems. Our trees may not grow as fast or as straight as eucalyptus, but they are not invasive, and they do not destroy the water table and the soil!

Disclaimer

This research and methodology is based on research papers, university publications, and other information freely available on the Internet. As we stated before, it is difficult to calculate the amount of carbon dioxide sequestered per tree per year due to the complexity of the variables involved, as well as the lack of research on tropical tree species. If you have any information that could further refine or enhance our calculations, please let us know at info@treesftf.org. Thanks and happy tree planting!

[1] http://www.rcfa-cfan.org/english/issues.13.html
[2] The National Computational Science Leadership Program
http://www.ncsec.org/cadre2/team18_2/students/purpose.html and
The Shodor Education Foundation
http://www.shodor.org/succeedhi/succeedhi/weightree/teacher/activities.html
[3] "Total-Tree Weight, Stem Weight, and Volume Tables for Hardwood Species in the Southeast," Alexander Clark III, Joseph R. Saucier, and W. Henry McNab, Research Division, Georgia Forestry Commission, January 1986.
http://www.forestdisturbance.net/publications/GF%20RP60-Clark.pdf
[4] "Heating With Wood: Producing, Harvesting and Processing Firewood," Scott DeWald, Scott Josiah, and Becky Erdkamp, University of Nebraska – Lincoln Extension, Institute of Agriculture and Natural Resources, March 2005.
http://www.ianrpubs.unl.edu/epublic/live/g1554/build/g1554.pdf
[5] "Carbon Storage and Accumulation in United States Forest Ecosystems, General Technical Report W0-59," Richard A. Birdsey, United States Department of Agriculture Forest Service, Northeastern Forest Experiment Station, Radnor, PA, August 1992.
http://www.ilea.org/birdsey/fcarbon_index.html#toc
[6] http://www.ncsec.org/cadre2/team18_2/students/helpCalcCO2.htm
[7] http://www.worldagroforestrycentre.org/Sites/TreeDBS/aft.asp
[8] "Tropical Forests and the Greenhouse Effect: A Management Response," Norman Myers and Thomas J. Goreau, Discovery Bay Marine Laboratory, University of the West Indies, Discovery Bay, Jamaica, 1991.
http://www.ciesin.columbia.edu/docs/002-163/002-163.html

USDA United States Department of Agriculture Forest Service

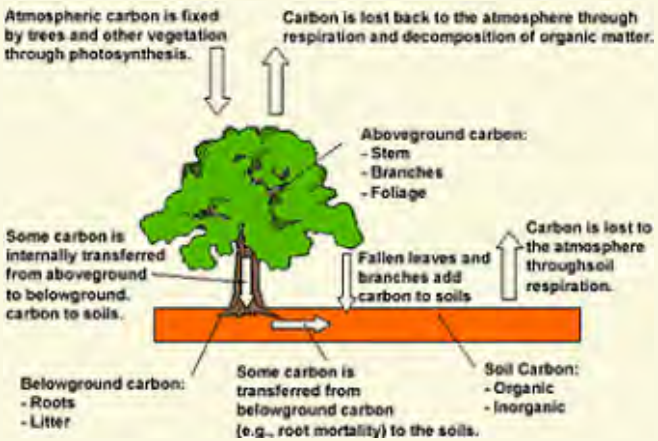
Northern Research Station

Supplemental Document 'C'
FOR LILAC HILLS RANCH LANDSCAPE REPORT

Northern Institute of Applied Climate Science

Carbon Sequestration

Greenhouse gases are increasing in the atmosphere and causing climate change. Scientist, policy makers, and citizens are trying to determine how to decrease and possibly reverse the emission of greenhouse gases, especially carbon dioxide (CO_2). Carbon sequestration, a process where CO_2 is pulled from the atmosphere and stored for a long period of time, may be one way to slow or reverse the accumulation of CO_2 in the earth's atmosphere. Terrestrial sequestration utilizes natural processes in ecosystems to absorb CO_2 from the atmosphere and store it in plants, animals, and soil.



[Source: US Environmental Protection Agency (EPA)]

Forests store large amounts of carbon. In the US, forests make up 90% of the US carbon sink and sequester approximately 10% of US CO_2 emissions. There are four places where carbon can be stored:

Aboveground – Carbon is stored in the leaves, stems, and other parts of plants when they absorb CO_2 from the atmosphere and use it to grow. Trees are very important for carbon sequestration because they live a long time and, therefore, store their carbon for many years.

Long-lived products – Wood and other products made from trees still contain the carbon absorbed by the plants that they came from. When a tree is utilized for wood, its ability to sequester carbon is extended, and the carbon is

not released until the product burns or decomposes.
Soil – In addition to leaves and stems, trees produce large quantities of roots that contain carbon. Rotting leaves, debris, and soil organisms also contain carbon. In fact, northern forests can sequester twice as much carbon in the soil than aboveground.
Inorganic carbon in soils and rock – Carbon in the soil can slowly develop into other forms, including some types of rock, which are very stable and hold carbon in the soil for very long periods of time.

Forests can be managed to sequester greater amounts of carbon while still providing for wildlife, recreation, wood products, and other uses.

Avoiding deforestation – Deforestation is a major contributor to climate change. Maintaining current forestland is crucial for avoiding additional inputs of CO_2 in the atmosphere and for ensuring the ability of the forests to continue sequestering carbon. For example, deforestation, particularly that in the tropics, is responsible for approximately 15-20% of human-caused CO_2 emissions.
Afforestation – Forestlands sequester CO_2 in larger quantities and for longer periods of time than many other land uses. Converting agricultural, developed, or degraded land to forest can increase the amount of carbon sequestered.
Reforestation – Reestablishing trees on previous forestland is a specific type of management. By maintaining areas as forest, trees will continue to sequester carbon.
Forest management – Slight changes in forest management practices can improve the ability of forests to store carbon while still providing other benefits. Extending the time between harvests, encouraging fast-growing species, and fertilization are a few examples of management techniques that could be used to improve forest carbon sequestration.

Additional Resources

- US EPA - Carbon Sequestration in Agriculture and Forestry
- US Department of Energy (DOE) - Carbon Sequestration
- Carbon sequestration in the U.S. forest sector from 1990 to 2010 (Woodbury et al. 2007)
- Forests and Carbon Storage

Last Modified: 01/19/2017

Supplemental Document 'D'
FOR LILAC HILLS RANCH LANDSCAPE REPORT

Method for Calculating Carbon Sequestration by Trees in Urban and Suburban Settings

VOLUNTARY REPORTING of GREENHOUSE GASES

April 1998

U.S. Department of Energy
Energy Information Administration

TABLE OF CONTENTS

INTRODUCTION 1

INSTRUCTIONS 3

URBAN FORESTRY CARBON SEQUESTRATION WORKSHEET 5

WORKSHEET ENTRIES FOR A SAMPLE PROJECT 11

CALCULATING SEQUESTRATION FOR NON-STANDARD TREES 13

To obtain reporting forms or for other information about the Voluntary Reporting of Greenhouse Gases contact the Program's Communications Center at:

Voice: **1-800-803-5182** *Fax*: **(202) 586-3045**
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INTRODUCTION

This document presents a method for calculating the amount of carbon sequestered by trees planted individually in urban and suburban settings. It is intended for use by participants in the Voluntary Reporting of Greenhouse Gases Program, who intend to submit either Form EIA-1605 or EIA-1605EZ to the U.S. Department of Energy's Energy Information Administration. This simplified method can be used by those who have no formal background in forestry.

This method is appropriate only for calculating carbon sequestration by individual ("open grown") trees, such as trees typically planted along streets, in yards, and in parks. Do not use it for calculating carbon sequestration by densely planted trees, as in typical afforestation or reforestation projects where large numbers of trees are planted closely together on one or more acres of land. A separate set of tables designed to assist in calculating per-acre carbon sequestration are available upon request from the Voluntary Reporting of Greenhouse Gases Program by calling 1-800-803-5182.

A further limitation of this method is that it only estimates the greenhouse gas emission benefit associated with the carbon sequestered directly by trees planted. Trees planted adjacent to buildings can significantly reduce cooling and heating needs by providing shade during summer and acting as windbreaks during winter. These reductions in energy consumption result in reduced carbon dioxide emissions, a greenhouse gas. These emission reductions must be calculated separately.

To produce a simplified, easy-to use method, broad assumptions have been made regarding sequestration and mortality rates and site characteristics for a few groupings of tree species. As a result, this method may yield less precise results than a more tailored approach, which takes into account a larger number of the unique characteristics of the planting sites and trees involved in a project. Thus, you should use this method only if it is infeasible to generate estimates based on surveys and direct measurements of the specific trees and planting sites involved in the project.

To use this method, you need to know the species, year planted, and age of the trees when planted. The age of the tree is the most problematic of these items. The tables included for estimating sequestration were designed for reporters who have planted ordinary, nursery-raised trees, typically sold in 15-gallon containers or balled and burlapped. Such "standard" trees are usually approximately one inch in diameter at 4.5 feet above the ground when planted. For the purposes of this method, age is measured from the time the tree is planted. Therefore, standard-sized trees are designated as age 0 when planted. Although this method is easiest to use if your trees were planted at this age, it can be used for trees planted at any age.

The remainder of this document includes the following:

- a worksheet for summarizing calculations of carbon sequestration;
- instructions for performing these calculations, including survival factors (to account for mortality) and sequestration rates;
- worksheet entries for a sample project; and
- instructions for calculating sequestration for non-standard trees (i.e., trees that are younger or older than age 0 when planted).

INSTRUCTIONS

The following worksheet (page 5) is provided for summarizing your calculations of annual carbon sequestration for tree planting projects in urban or suburban areas. Use a separate worksheet for each year you are reporting carbon sequestration. (The Voluntary Reporting of Greenhouse Gases Program is accepting information for 1991 through 1997 for the reporting period ending on July 1, 1998.) Complete the worksheet columns as follows:

Column A — Species Characteristics: List each distinct species of tree included in the project by year. List trees of a different age separately even if they are of the same species (e.g., list one-year-old red cedars on a separate row from two-year-old red cedars). If you are unsure of the name of a species, list it as "Unknown." If the exact age of a tree(s) is unknown, an approximation is acceptable. A list of common tree species is provided in Table 1. Note that each species listed is characterized by type (hardwood or conifer) and growth speed (slow, moderate, or fast). These characteristics will be used subsequently in selecting appropriate survival and sequestration rates. For each species and age category, enter letter codes in the respective columns for tree type (H = hardwood, C = conifer) and growth rate (S = Slow, M = Moderate, F = Fast). If you know whether the trees are hardwoods or conifers, but do not know the exact species (or the species is not included in Table 1), assume the trees have a moderate growth rate. If you do not know whether the species is a hardwood or conifer, assume that it is a hardwood of moderate growth rate.

Column B — Tree Age: Enter the age of the trees in the year for which you are calculating sequestration (the reporting year). Tree age is measured from the time of planting and assumes that trees are planted at a standard size, defined as a tree in a 15-gallon container or a balled and burlapped tree. Nursery-raised trees are typically planted at this size, which is designated as age 0 for the purposes of this method. For example, if you planted a standard-sized tree in 1994, its age in the 1995 reporting year would be 1. If the exact age of a tree(s) is unknown, an approximation is acceptable. If you planted trees that were smaller or larger than this standard size, refer to p. 12 for instructions on determining age.

Column C — Number of Age 0 Trees Planted: Enter the total number of trees of this species and age category originally planted as part of the project. *If the trees were <u>not</u> the standard size (age 0) when planted, you will need to adjust the number of trees planted to reflect a difference in mortality. For example, if you planted 100 trees smaller than the standard size, a fraction—say 15 percent—of the trees might be expected to die before reaching the standard size or age 0. This method requires you to estimate the number of trees surviving to the standard size—in this case 85—and estimate sequestration for these trees. This number is referred to as the <u>effective</u> number of trees planted. See the instructions on p. 13 to make the necessary adjustment.*

Column D — Survival Factor: Enter the survival factor from Table 2 for the tree species. Leave this column blank if you know (or can otherwise estimate) the number of trees surviving at the end of the reporting year. It is necessary to account for mortality, since a fraction of the trees planted inevitably die in each succeeding year. The ideal method for determining the number of trees surviving is to conduct a census of the trees planted. Alternatively, you can estimate survival based on the specifics of your project. If either of these approaches are infeasible, you may use the standard survival factors for urban trees provided in Table 2. However, participant-estimated

survival factors are preferable (if accurate) because the survival factors in Table 2 were developed from a survey of a limited number of scientific studies of urban tree mortality in a small number of U.S. cities, the results of which may or may not approximate the specifics of your project.

Column E — Number of Surviving Trees: Enter the number of trees surviving *at the end* of the reporting year in question. If you do not know or cannot otherwise estimate this number, multiply the original number of trees planted (Column C) by the survival factor (Column D). For example, for fast-growing conifers in the year in which they were planted (age 0), the survival factor would be 0.873, that is 87.3 percent of the trees originally planted are expected to survive to the end of the first year. For the same trees that are age 1 (i.e., trees that were planted in the year prior to that for which sequestration is being calculated), the survival factor would be 0.798. Retain fractions of trees.

Note: If the number of trees in a subset falls below 0.5, assume all of the trees originally planted have died and no carbon has been sequestered in the reporting year. (Provided the estimated number of trees surviving is greater than 0.5, then the probability that one tree survived and sequestered carbon is greater than 50 percent.)

Column F — Annual Sequestration Rate: Enter the annual sequestration rate from Table 2 for the species and age category of the trees during the reporting year in question.

Column G — Carbon Sequestered: Multiply the number of trees surviving (Column E) by the annual sequestration rate (Column F) and enter the resulting number in Column G. Repeat the above process for each species and age category. Sum all of the annual carbon sequestration totals for each species and age category and enter the total in the lower right-hand corner of the table. This is the total amount of carbon sequestered by the project in the reporting year in question.

Note 1: These steps must be repeated using a separate worksheet for each year for which you are reporting.

Note 2: To report in units of carbon dioxide instead of, or in addition to, carbon, multiply the total in Column G by 3.67. To report in short tons instead of pounds, divide by 2000.

Note 3: The amount sequestered is entered under the Emission Reduction or Sequestration column on the EZ form, or as Annual Increase in Schedule II, Section 8, Part III of the Long Form.

The section following Table 2 presents an example worksheet for an urban tree planting project (see p. 11).

URBAN FORESTRY CARBON SEQUESTRATION WORKSHEET

(Calculate each reporting year on a separate worksheet; photocopy if more than one sheet is required)

Reporting year: 19___

A. Species Characteristics (Refer to Table 1)			B. Tree Age	C. Number of Age 0 Trees Planted	D. Survival Factor (Refer to Table 2)	E. Number of Surviving Trees (C x D)	F. Annual Sequestration Rate (lbs./tree) (Refer to Table 2)	G. Carbon Sequestered (lbs) (E x F)
Name	Tree Type (H or C)	Growth Rate (S, M, or F)						
Total Pounds of Carbon Sequestered								
Total Pounds of Equivalent CO2 Sequestered X 3.67								
Equivalent CO2 Sequestered in Short Tons /2000								

Table 1. Common Urban Tree Species

Species	Type	Growth Rate	Species	Type	Growth Rate
Ailanthus, *Ailanthus altissima*	H	F	Maple, bigleaf, *Acer macrophyllum*	H	S
Alder, European, Alnus glutinosa	H	F	Maple, Norway, *Acer platanoides*	H	M
Ash, green, Fraxinus pennsylvanica	H	F	Maple, red, *Acer rubrum*	H	M
Ash, mountain, American,*Sorbus americana*	H	M	Maple, silver, *Acer saccharinum*	H	M
Ash, white, *Fraxinus americana*	H	F	Maple, sugar, *Acer saccharum*	H	S
Aspen, bigtooth, *Populus grandidentata*	H	M	Mulberry, red, *Morus rubra*	H	F
Aspen, quaking, *Populus tremuloides*	H	F	Oak, black, *Quercus velutina*	H	M
Baldcypress, *Taxodium distichum*	C	F	Oak, blue, *Quercus douglasii*	H	M
Basswood, American, *Tilia americana*,	H	F	Oak, bur, *Quercus macrocarpa*	H	S
Beech, American, *Fagus grandifolia*	H	S	Oak, California black, *Quercus kelloggii*	H	S
Birch, paper (white), *Betula papyrifera*	H	M	Oak, California White, *Quercus lobata*	H	M
Birch, river, *Betula nigra*	H	M	Oak, canyon live, *Quercus chrysolepsis*	H	S
Birch, yellow, *Betula alleghaniensis*	H	S	Oak, chestnut, *Quercus prinus*	H	S
Boxelder, *Acer negundo*	H	F	Oak, Chinkapin, *Quercus muehlenbergii*	H	M
Buckeye, Ohio, *Aesculus glabra*	H	S	Oak, Laurel, *Quercus laurifolia*	H	F
Catalpa, northern, *Catalpa speciosa*	H	F	Oak, live, *Quercus virginiana*	H	F
Cedar-red, eastern, *Juniperus virginiana*	C	M	Oak, northern red, *Quercus rubra*	H	F
Cedar-white, northern, *Thuja occidentalis*	C	M	Oak, overcup , *Quercus lyrata*	H	S
Cherry, black, *Prunus serotina*	H	F	Oak, pin, *Quercus palustris*	H	F
Cherry, pin, *Prunus pennsylvanica*	H	M	Oak, scarlet, *Quercus coccinea*	H	F
Cottonwood, eastern, *Populus deltoides*	H	M	Oak, swamp white, *Quercus bicolor*	H	M
Crabapple, *Malus* spp.	H	M	Oak, water, *Quercus nigra*	H	M
Cucumbertree, *Magnolia acuminata*	H	F	Oak, white, *Quercus alba*	H	S
Dogwood, flowering, *Cornus florida*	H	S	Oak, willow, *Quercus phellos*	H	M
Elm, American, *Ulmus americana*	H	F	Pecan, *Carya illinoensis*	H	S
Elm, Chinese, *Ulmus parvifolia*	H	M	Pine, European black, *Pinus nigra*	C	S
Elm, rock, *Ulmus thomasii*	H	S	Pine, jack, *Pinus banksiana*	C	F
Elm, September, *Ulmus serotina*	H	F	Pine, loblolly, *Pinus taeda*	C	F
Elm, Siberian, *Ulmus pumila*	H	F	Pine, longleaf, *Pinus palustris*	C	F
Elm, slippery, *Ulmus rubra*	H	M	Pine, ponderosa, *Pinus ponderosa*	C	F
Fir, balsam, *Abies balsamea*	C	S	Pine, red, *Pinus resinosa*	C	F
Fir, Douglas, Pseudotsuga menziesii	C	F	Pine, Scotch, *Pinus sylvestris*	C	S
Ginkgo, *Ginkgo biloba*	H	S	Pine, shortleaf, *Pinus echinata*	C	F
Hackberry, *Celtis occidentalis*	H	F	Pine, slash, *Pinus elliottii*	C	F
Hawthorne, *Crataegus* spp.	H	M	Pine, Virginia, *Pinus virginiana*	C	M
Hemlock, eastern, *Tsuga canadensis*	C	M	Pine, white eastern, *Pinus strobus*	C	F
Hickory, bitternut, *Carya cordiformis*	H	S	Poplar, yellow, *Liriodendron tulipifera*	H	F
Hickory, mockernut, *Carya tomentosa*	H	M	Redbud, eastern, *Cercis canadensis*	H	M
Hickory, shagbark, *Carya ovata*	H	S	Sassafras, *Sassafras albidum*	H	M
Hickory, shellbark, Carya laciniosa	H	S	Spruce, black, *Picea mariana*	C	S
Hickory, pignut, *Carya glabra*	H	M	Spruce, blue, *Picea pungens*	C	M
Holly, American, *Ilex opaca*	H	S	Spruce, Norway, *Picea abies*	C	M
Honeylocust, *Gleditsia triacanthos*	H	F	Spruce, red, *Picea rubens*	C	S
Hophornbeam, eastern, *Ostrya virginiana*	H	S	Spruce, white, *Picea glauca*	C	M
Horsechestnut, common, *Aesculus hippocastanum*	H	F	Sugarberry, *Celtis laevigata*	H	F
Kentucky coffeetree, *Gymnocladus dioicus*	C	F	Sweetgum, *Liquidambar styraciflua*	H	F
Linden, little-leaf, *Tilia cordata*	H	F	Sycamore, *Platanus occidentalis*	H	F
Locust, black, *Robinia pseudoacacia*	H	F	Tamarack, *Larix laricina*	C	F
London plane tree *Platanus_X_acerifolia*	H	F	Walnut, black, *Juglans nigra*	H	F
Magnolia, southern, *Magnolia grandifolia*	H	M	Willow, black, *Salix nigra*	H	F

Type: H = Hardwood, C = Conifer Growth Rate: S = Slow, M = Moderate, F = Fast

Table 2: Survival Factors and Annual Carbon Sequestration Rates for Common Urban Trees

Tree Age (yrs)	Survival Factors by Growth Rate			Annual Sequestration Rates by Tree Type and Growth Rate (lbs. carbon/tree/year)					
				Hardwood			Conifer		
	Slow	Moderate	Fast	Slow	Moderate	Fast	Slow	Moderate	Fast
0	0.873	0.873	0.873	1.3	1.9	2.7	0.7	1.0	1.4
1	0.798	0.798	0.798	1.6	2.7	4.0	0.9	1.5	2.2
2	0.736	0.736	0.736	2.0	3.5	5.4	1.1	2.0	3.1
3	0.706	0.706	0.706	2.4	4.3	6.9	1.4	2.5	4.1
4	0.678	0.678	0.678	2.8	5.2	8.5	1.6	3.1	5.2
5	0.658	0.658	0.658	3.2	6.1	10.1	1.9	3.7	6.4
6	0.639	0.639	0.644	3.7	7.1	11.8	2.2	4.4	7.6
7	0.621	0.621	0.630	4.1	8.1	13.6	2.5	5.1	8.9
8	0.603	0.603	0.616	4.6	9.1	15.5	2.8	5.8	10.2
9	0.585	0.589	0.602	5.0	10.2	17.4	3.1	6.6	11.7
10	0.568	0.576	0.589	5.5	11.2	19.3	3.5	7.4	13.2
11	0.552	0.564	0.576	6.0	12.3	21.3	3.8	8.2	14.7
12	0.536	0.551	0.563	6.5	13.5	23.3	4.2	9.1	16.3
13	0.524	0.539	0.551	7.0	14.6	25.4	4.6	9.9	17.9
14	0.512	0.527	0.539	7.5	15.8	27.5	4.9	10.8	19.6
15	0.501	0.516	0.527	8.1	16.9	29.7	5.3	11.8	21.4
16	0.490	0.504	0.516	8.6	18.1	31.9	5.7	12.7	23.2
17	0.479	0.493	0.505	9.1	19.4	34.1	6.1	13.7	25.0
18	0.469	0.483	0.495	9.7	20.6	36.3	6.6	14.7	26.9
19	0.459	0.472	0.484	10.2	21.9	38.6	7.0	15.7	28.8
20	0.448	0.462	0.474	10.8	23.2	41.0	7.4	16.7	30.8
21	0.439	0.452	0.464	11.4	24.4	43.3	7.9	17.8	32.8
22	0.429	0.442	0.454	12.0	25.8	45.7	8.3	18.9	34.9
23	0.419	0.433	0.445	12.5	27.1	48.1	8.8	20.0	37.0
24	0.410	0.424	0.435	13.1	28.4	50.6	9.2	21.1	39.1
25	0.401	0.415	0.426	13.7	29.8	53.1	9.7	22.2	41.3
26	0.392	0.406	0.417	14.3	31.2	55.6	10.2	23.4	43.5
27	0.384	0.398	0.409	15.0	32.5	58.1	10.7	24.6	45.7
28	0.375	0.389	0.400	15.6	33.9	60.7	11.2	25.8	48.0
29	0.367	0.381	0.392	16.2	35.3	63.3	11.7	27.0	50.3
30	0.359	0.373	0.383	16.8	36.8	65.9	12.2	28.2	52.7
31	0.352	0.365	0.375	17.5	38.2	68.5	12.7	29.5	55.1
32	0.344	0.358	0.367	18.1	39.7	71.2	13.3	30.7	57.5
33	0.337	0.350	0.360	18.7	41.1	73.8	13.8	32.0	59.9
34	0.330	0.343	0.349	19.4	42.6	76.5	14.3	33.3	62.4
35	0.323	0.336	0.339	20.0	44.1	79.3	14.9	34.7	64.9

Table 2: Survival Factors and Annual Carbon Sequestration Rates for Common Urban Trees (Cont'd)

Tree Age (yrs)	Survival Factors by Growth Rate			Annual Sequestration Rates by Tree Type and Growth Rate (lbs. carbon/tree/year)					
				Hardwood			Conifer		
	Slow	Moderate	Fast	Slow	Moderate	Fast	Slow	Moderate	Fast
36	0.316	0.329	0.329	20.7	45.6	82.0	15.5	36.0	67.5
37	0.310	0.322	0.320	21.4	47.1	84.8	16.0	37.3	70.1
38	0.303	0.315	0.310	22.0	48.6	87.6	16.6	38.7	72.7
39	0.297	0.308	0.301	22.7	50.2	90.4	17.2	40.1	75.3
40	0.291	0.302	0.293	23.4	51.7	93.2	17.7	41.5	78.0
41	0.285	0.296	0.284	24.1	53.3	96.1	18.3	42.9	80.7
42	0.279	0.289	0.276	24.8	54.8	99.0	18.9	44.3	83.4
43	0.273	0.283	0.268	25.4	56.4	101.9	19.5	45.8	86.2
44	0.267	0.277	0.260	26.1	58.0	104.8	20.1	47.2	89.0
45	0.261	0.269	0.253	26.8	59.6	107.7	20.7	48.7	91.8
46	0.256	0.261	0.245	27.6	61.2	110.7	21.3	50.2	94.7
47	0.251	0.254	0.238	28.3	62.8	113.6	22.0	51.7	97.5
48	0.245	0.247	0.231	29.0	64.5	116.6	22.6	53.2	100.4
49	0.240	0.239	0.225	29.7	66.1	119.6	23.2	54.8	103.4
50	0.235	0.232	0.218	30.4	67.8	122.7	23.9	56.3	106.3
51	0.230	0.226	0.212	31.1	69.4	125.7	24.5	57.9	109.3
52	0.225	0.219	0.206	31.9	71.1	128.8	25.2	59.4	112.3
53	0.221	0.213	0.199	32.6	72.8	131.8	25.8	61.0	115.4
54	0.216	0.207	0.193	33.4	74.5	134.9	26.5	62.6	118.4
55	0.211	0.201	0.188	34.1	76.2	138.0	27.2	64.2	121.5
56	0.207	0.195	0.182	34.8	77.9	141.2	27.8	65.9	124.6
57	0.203	0.189	0.177	35.6	79.6	144.3	28.5	67.5	127.8
58	0.198	0.184	0.171	36.3	81.3	147.5	29.2	69.2	130.9
59	0.194	0.178	0.166	37.1	83.0	150.6	29.9	70.8	134.1

WORKSHEET ENTRIES FOR A SAMPLE PROJECT

This example illustrates how the worksheet should be used in calculating the carbon sequestered by a hypothetical tree planting project in 1995. The project involves 100 Norway maples planted in 1993, 75 Norway maples planted in 1992, 35 rock elms planted in 1989, and 437 white spruces planted in 1994. All the trees were standard, nursery-raised specimens (i.e., trees in 15-gallon containers or balled and burlapped) at the time of planting.

The following steps should be taken to complete the worksheet (see Table 3):

1. In Column A, enter each species-age category on a separate line. Note that the species Norway maple occupies two lines, since plantings of that species were made in two distinct years. Enter the appropriate letter code for tree type and growth rate.

2. In Column B, enter the age of each group of trees. The age indicated should be the number of years since planting. For example, the 35 rock elms planted in 1989 would be 6 years old in 1995 (1995 - 1989 = 6).

3. In Column C, enter the original number of trees planted for each species-age category.

4. In Column D, enter the survival factors for each species and age category as listed in Table 2. In the case of the 100 Norway maples planted in 1993, the survival factor for 2-year-old, moderate growth hardwoods is 0.736.

5. Calculate the number of trees surviving in each species-age category at the end of the reporting year by multiplying the original number of trees (Column C) by the survival factor. Enter the resulting number in Column E. For example, the surviving number of Norway maples planted in 1993 is determined by multiplying the 75 trees planted by a survival factor of 0.736, to give 73.6 trees left at the end of 1995. (Retain fractions of trees).

6. In Table 2, find the annual sequestration rate corresponding to each species-age category and enter this rate in Column F. For example, the 2 year-old Norway maples (moderate growth hardwoods) sequester carbon at a rate of 3.5 pounds per tree per year, while the 7-year-old rock elms (slow growth hardwoods) would have sequestered 3.7 pounds of carbon each.

7. For each species-age category, multiply the number of surviving trees (Column E) by the annual sequestration rate in (Column F) to obtain the amount (in pounds) of carbon sequestered in 1995. Enter the resulting number in Column G. For example, the 2-year-old Norway maples sequestered 257.6 pounds of carbon in 1995.

8. In Column G, sum all entries and enter the result on the last row of Column G. This is the total amount of carbon sequestered by this project in the 1995 reporting year (257.6 + 227.9 + 82.9 + 523.1 = 1091.5 pounds in this example). Record this number as the Annual Increase in Section 8, Part III on Form EIA-1605 or Sequestration on Form EIA-1605EZ.

Table 3: Sample Urban Forestry Carbon Sequestration Worksheet

Reporting year: 19 95

A. Species Characteristics (Refer to Table 1)			B. Tree Age	C. Number of Age 0 Trees Planted	D. Survival Factor (Refer to Table 2)	E. Number of Surviving Trees (C x D)	F. Annual Sequestration Rate (lbs./tree) (Refer to Table 2)	G. Carbon Sequestered (lbs) (E x F)
Name	**Tree Type** (H or C)	**Growth Rate** (S, M, or F)						
Maple, Norway	H	M	2	100	0.736	73.6	3.5	257.6
Maple, Norway	H	M	3	75	0.706	53.0	4.3	227.9
Elm, rock	H	S	6	35	0.639	22.4	3.7	82.9
Spruce, white	C	M	1	437	0.873	381.5	1.5	572.3
Total Pounds of Carbon Sequestered								1130.7
Total Pounds of Equivalent CO2 Sequestered X 3.67								4149.67
Equivalent CO2 Sequestered in Short Tons /2000								2.07

CALCULATING SEQUESTRATION FOR NON-STANDARD TREES

The preceding method for estimating carbon sequestration was designed for trees planted at a "standard" size, defined as a tree in 15-gallon container or balled and burlapped conifer. At this size, a tree is usually approximately one inch in diameter at 4.5 feet above the ground. For the purposes of this method, age is measured from the time the tree is planted at the standard size. Therefore, standard-sized trees are designated as age 0, even though it will generally take seedlings several years to reach this size.

Trees can also be planted when they are either smaller or larger than this standard size. This section provides instructions on how to adapt the preceding method to estimate sequestration for trees that were a non-standard size when planted. The following adjustments are necessary:

1. The age of the trees planted must be normalized to that of a standard tree. This means determining the number of years that have elapsed since the trees reached (or will elapse before the trees reach) the standard size (age 0).

2. The number of trees planted must be adjusted to reflect differences in mortality. This means estimating the number of trees expected to have survived to age 0 and using this number, the *effective* number of trees planted, in subsequent calculations. (This adjustment will not be necessary if you determine the number of trees surviving by conducting a survey of the trees planted or by a method does not rely on the survival factors presented in Table 2).

The remainder of this section provides instructions for determining the year the trees reach standard size and estimating the effective number of trees planted. In addition, several examples and a sample worksheet are provided to illustrate how these adjustments are made in calculating carbon sequestration.

Normalizing Tree Age

Tables 4 and 5 estimate the ages of hardwoods and conifers, respectively, planted at different sizes. Tree age is the number of years since the tree reached standard size (or age 0). Negative relative ages indicate the number of years *before* the tree will reach age 0. For example, if you planted 100 Norway maples (hardwoods) in 10-gallon containers in 1992, the age of these trees when planted would be -2, which means they would reach age 0 two years later in 1994. The age of the trees in the 1995 reporting year would be 1.

Table 4: Relative Ages and Survival Adjustment Factors for Hardwoods

Size of Tree When Planted	Tree Age	Survival Factor
Bare Root Seedling	-6	.443
10 Gallon Container	-2	.762
15 Gallon Container	0	1.000
Balled and Burlapped	0	1.000

Estimating the Effective Number of Trees Planted

Tables 4 and 5 also provide survival factors for hardwoods and conifers, respectively. These factors are applied to the *actual* number of trees planted to determine the *effective* number of trees planted at age 0. If trees smaller than the standard size are planted, a fraction of the original trees planted would reach the standard size (i.e., survive to age 0). Hence the survival factor is less than 1

when smaller trees are planted. The opposite is true if trees larger than the standard size are planted: the effective number of standard-sized trees one would have to plant would be greater than the number of older trees actually planted in a later year. Hence the survival factors for larger trees are greater than 1. In the Norway maple example above, the effective number of trees planted is determined by multiplying the actual number of trees originally planted (100) by the survival adjustment factor for trees of age -2 (0.762) to give 76.2 trees. This information — 76.2 trees effectively planted in 1994 at age 0 — can now be used to calculate annual carbon sequestration using the worksheet in the normal manner.

Example Calculations

This example project involves calculating carbon sequestration in 1995 for the following non-standard-sized trees (in addition to the 100 Norway maples planted in 1992 from the above example):

- 50 bare root black locust seedlings planted in 1989;
- 120 5-foot blue spruce trees in 1992; and
- 25 15-foot Douglas fir trees in 1991.

The effective number of trees planted at age 0 would be calculated as follows for each species-age category:

Black Locust: Table 4 indicates that the relative age of bare root (hardwood) black locust is -6, which means they would take 6 years to reach age 0. Since they were planted in 1989, they would reach age 0 in 1995. The survival adjustment factor for this tree is 0.443. Therefore, of the 50 planted in 1989, 22.2 could be expected to survive until 1995, which would be the effective number of trees planted.

Blue Spruce: Blue spruce is a moderate-growth rate conifer. According to Table 6, the age of 5-foot trees at planting would have been -1. Since they were planted in 1992, they would have reached age 0 in 1993. As the survival factor is 0.873, the effective number of trees planted at age 0 in 1993 would be 0.873 x 150 or 131.1. The trees would be age 2 in 1995.

Douglas Fir: Douglas fir is a fast-growing conifer. At 15 feet high, its age is +3. Therefore, if planted in 1991, it would have reached age 0 three years earlier in 1988. Given a survival adjustment factor of 1.416, the effective number of trees planted at age 0 in 1991 would be 25 x 1.416, or 35.4. The trees would be age 7 in 1995.

Given values for the effective number of trees planted and tree age, sequestration for 1995 can be calculated using the normal method (see Table 6).

Table 5: Relative Ages and Survival Adjustment Factors for Conifers

Growth Rate	Tree Height in Feet	Tree Age	Survival Factor
	Less than 1	-6	.443
	1 - 2	-5	.507
	2 - 3	-4	.581
	3 - 4	-3	.665
	4 - 5	-2	.762
Slow	5 - 6	-1	.873
	6 - 7	0	1.000
	7 - 8	1	1.145
	8 - 9	2	1.253
	9 - 10	3	1.416
	10 - 11	4	1.475
	1.6 or less	-4	.581
	1.6 - 3.2	-3	.665
	3.2 - 4.8	-2	.762
	4.8 - 6.4	-1	.873
Moderate	6.4 - 8.2	0	1.000
	8.2 - 9.8	1	1.145
	9.8 - 11.4	2	1.253
	11.4 - 13.0	3	1.416
	13.0 - 14.6	4	1.475
	Less than 2.3	-3	.665
	2.3 - 4.6	-2	.762
	4.6 - 6.9	-1	.873
	6.9 - 9.2	0	1.000
Fast	9.2 - 11.5	1	1.145
	11.5 - 13.8	2	1.253
	13.8 - 16.1	3	1.416
	16.1 - 18.4	4	1.475

Table 6: Sample Urban Forestry Carbon Sequestration Worksheet

Reporting year: 19 95

A. Species Characteristics (Refer to Table 1)			B. Tree Age	C. Number of Age 0 Trees Planted	D. Survival Factor (Refer to Table 2)	E. Number of Surviving Trees (C x D)	F. Annual Sequestration Rate (lbs./tree) (Refer to Table 2)	G. Carbon Sequestered (lbs) (E x F)
Name	**Tree Type** (H or C)	**Growth Rate** (S, M, or F)						
Norway maples	H	M	1	76.2	0.798	60.8	2.7	164.2
Black locust	H	F	0	22.1	0.873	19.3	2.7	52.1
Blue spruce	C	M	2	131.1	0.736	96.5	2.0	193.0
Douglas fir	C	F	7	35.4	0.630	22.3	8.9	198.5
Total Pounds of Carbon Sequestered								607.8
Total Pounds of Equivalent CO2 Sequestered X 3.67								2230.6
Equivalent CO2 Sequestered in Short Tons /2000								1.12

ATTACHMENT F:

Transportation Demand
Management Program
Evaluation Report

FEHR PEERS

MEMORANDUM

Date: May 5, 2017

To: John Rilling, Lilac Hills Ranch

From: Katy Cole & Greg O'Donnell, Fehr & Peers

Subject: Lilac Hills Ranch Transportation Demand Management Program - VMT Reduction Evaluation

SD17-0239

This memorandum evaluates the level of effectiveness of the Lilac Hills Ranch Transportation Demand Management (TDM) Program. Each element of the proposed TDM Program is evaluated by reference to standards developed by the California Air Pollution Control Officers Association (CAPCOA) and other case studies, to determine the Vehicle Miles of Travel (VMT) reduction expected with implementation of the TDM Program.

This memo is organized as follows:

- **1. Project Description** – Provides a brief description of the land uses proposed as part of the Lilac Hills Ranch project and a summary of the transportation setting. Also includes a summary of the elements included in the Lilac Hills Ranch TDM Program.
- **2. Methodology** – Provides the overall methodology used to estimate the VMT reduction associated with the TDM Program.
- **3. TDM Program** – Provides a detailed description of the proposed TDM Program and supporting elements required to ensure that the Program is effective.
- **4. Evaluation of TDM Strategies** – Provides detailed calculations to determine the effectiveness of each TDM Program element at reducing project VMT.
- **5. TDM Program Metrics and Targets** – Provides performance metrics to ensure that the TDM Program is effectively implemented.

1. PROJECT DESCRIPTION

Land Uses and Transportation Setting

The proposed Lilac Hills Ranch development project (Project) is located east of Interstate-15 (I-15) at the Old Highway 395 Interchange, approximately 14 miles north of the city of Escondido and approximately 17 miles south of Temecula. The Project is located west of downtown Valley Center and south of State Route 76. The 608-acre, mixed-use Project would consist of the following land uses:

- 903 single-family detached homes
- 468 age restricted single-family detached homes
- 375 multi-family homes
- 61,500 square feet of retail/commercial space
- 28,500 square feet of office space
- 50-room country inn
- Senior center and assisted living and group residential facility with 200 beds
- Fire station/community facility site
- Kindergarten-8th Grade school site
- Church site
- 23.6 acres of public and private parks
- 0.6-acre community recycling facility
- 2.4-acre water reclamation facility

The Project would also include multi-use trails, bike lanes, and bike pathways in addition to the planned road network.

West Lilac Road comprises the northern boundary of the Project site, while Mountain Ridge Road provides southern access to the site via Circle R Drive. Interstate-15, located approximately a half-mile due west of the Project site, provides regional north-south access within the Southern California area. Highway 76, located 2.5 miles north of West Lilac Road, provides east-west access through the northern San Diego County region. As to transit, since the Project site presently is undeveloped, there currently is no transit access to the Project site. The closest public transit is North County Transit District (NCTD) BREEZE Bus

Route 389, which runs on I-15 directly east of the Project site, but does not stop near the site due to the present lack of demand for transit service. The closest public transit stop is the I-15/SR-76 Park and Ride, located at the northwest corner of SR-76/I-15 in Pala, CA 92028, approximately 1.5 miles north of the Project site, and serviced by Bus Route 388/389 (Escondido to Pala). The Project site is also approximately 10 miles north of the Escondido Transit Center, which provides connections to BREEZE bus, LIFT shuttle, and SPRINTER light rail lines operated by NCTD.

Overview of TDM Program

TDM strategies have been used for over 30 years to reduce single occupant vehicle trips. The Lilac Hills Ranch TDM Program would work to reduce the Project's impacts on the surrounding roadway network through: land use and design strategies that would create an environment that promotes alternative mode choice; commute/travel services for residents and resort guests that would reduce out-going single occupant vehicle trips; and commute services for employees of the Project's commercial center that would reduce incoming single occupant vehicle trips.

A detailed description of the TDM Program is presented in subsequent sections of this memorandum. As an overview, the Lilac Hills Ranch TDM Program would include the following VMT reduction strategies:

- **TDM STRATEGIES FOR RESIDENTS**
  - Interim Transit Pool Program (Vanpool) (provided until public transit service is available)
  - Interim Private Transit Services (provided until public transit services is available)
  - Carpool Matching Program
  - Guaranteed Ride Home Program
  - Car Share Program
  - Subsidized Transit Pass Program
  - Bike-Share Program
  - School Pool Program
  - School Bus Program
  - Walking School Bus Program
  - Unbundled Parking Program
  - TDM Strategy Marketing

- **TDM STRATEGIES FOR HOTEL GUESTS**
  - Interim Private Transit Services (provided until public transit service is available)
  - Bike-Share Program

- Hotel Shuttle Service

- **TDM STRATEGIES FOR EMPLOYEES**
  - Employee Vanpool/Shuttle Services
  - Employee Trip Reduction Through Telecommuting and Staggered Work Hours
  - Carpool Matching Program
  - Employee Parking Cash-Out Program
  - Subsidized Transit Pass Program
  - TDM Program Marketing for Employees

- **LAND USE AND DESIGN STRATEGIES**
  - Transit Facility Optimization (Coordination of Future Public Transit Stops)
  - Bicycle Circulation Improvements
  - Traffic Calming

2. METHODOLOGY

Fehr & Peers worked with CAPCOA to develop the transportation section of the 2010 report titled, *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA Report). This report routinely is relied upon in the CEQA context as an authoritative source of methodologies for quantifying the environmental benefits of mitigation measures, such as the Project's TDM Program. The CAPCOA Report and the methodologies therein were developed by conducting a comprehensive literature review of studies documenting the effects of TDM strategies on reducing VMT.

TDM Effectiveness Quantification

To determine the amount of VMT reduction that would be attributable to the Lilac Hills Ranch TDM Program, Fehr & Peers compared the TDM Program to CAPCOA standards. For those measures not addressed by the CAPCOA standards, Fehr & Peers utilized published case studies, other authoritative sources, and its professional judgment and expertise to estimate VMT reduction.

The detailed calculations for each TDM strategy are described in the section *Evaluation of Recommended TDM Program Strategies*. For each strategy that is based on the CAPCOA Report, the related CAPCOA strategy code (for example, CAPCOA TRT-6 or SDT-3) is provided.

VMT Modeling Data

The San Diego Association of Governments (SANDAG) Series 12 model was used to generate estimated VMT and vehicle trips that would be produced by the Lilac Hills Ranch Project. The SANDAG model provides a gross estimate of VMT prior to any reductions associated with the TDM Program. Note that the SANDAG model includes basic regional level TDM strategies, such as carpooling, telecommuting/work-from-home, and transit use. However, the regional model does not account for TDM strategies at the micro-project level and, as a result, is unable to address the specific strategies that are part of the Lilac Hills Ranch TDM program. Therefore, it is appropriate to apply the reductions in VMT due to the TDM Program identified in this memo to the total project VMT generated by the SANDAG model.

3. TDM PROGRAM

The proposed Project would include a robust TDM Program that will reduce Lilac Hills Ranch's impacts on the surrounding roadway network while striving to achieve air quality/greenhouse gas reduction goals. As noted above, the TDM Program is organized into three main types of strategies as follows:

- **TDM Strategies for Residents** - These strategies would provide residents with travel options other than private auto for trips to destinations inside and outside of the Project area:
    - Provide interim transit pool services (vanpool) for residents between the Project site and employment centers outside of the Project area through the SANDAG iCommute program.
    - Provide interim transit service between the Project site and the Escondido Transit Center and Route 388 on Valley Center Road/SR 76. Such service would be provided by the HOA with Phase 1 of the Project and would terminate when a transit linkage is proposed by the local transit district. Pick-ups and drop-offs would be at a central location in the Project's development area. Per the County's requirements: *The project will be required to provide the proposed interim transit service (on-demand vanpool) concurrently with Phase 1. The interim transit service shall provide daily service between the community and the nearest off-site transit stops (Route 388 along Valley Center Road & SR-76 and/or Escondido Transit Center) through the SANDAG iCommute program until transit service is provided to the site.*
    - Coordinate with SANDAG's iCommute program for carpool and rideshare programs that are specific to the Project or develop a ride-share matching program for Project residents, as well as a potential matching service for active adults in the community. Provide a park-n-ride area to encourage carpooling. Offer a subsided guaranteed ride home program (through taxis or Uber/Lyft type services) for participants in the transit, carpool, or vanpool programs.

- Provide coordination/support for a car sharing system to provide shared car service for Lilac Hills residents. Car share programs for residents reduce overall household based VMT by reducing the need for households to own a car (or multiple cars).
- Provide public transit subsidy options for residents on a daily, monthly, or annual basis.
- Provide an on-site bike-share program. Bike-share programs provide a shared group of bicycles that can be rented. Typically, the bikes are placed at a series of stations and the bikes can be rented and returned to any station that is part of the system.
- Provide a School Pool Program for students traveling to off-site schools. School Pool programs help to match parents to students to assist in the transportation to and from school.
- Coordinate with the local school district to implement school bus services within the Project area to off-site schools.
- Implement a Walking School Bus Program for students traveling to the on-site school. A Walking School Bus program is an adult-supervised walk-to-school program whereby one or more adults lead a group of students to-and-from the school.
- Unbundle multi-family parking. An unbundled parking program separates the parking costs from the property costs. The program ensures that parking and property costs are divided by requiring individuals to pay for parking independent of the property fees. For example, an apartment could come with one parking space and additional spaces have to be rented subject to additional fees.
- Promote the use of alternative transportation mode choices for new residents. Provide information regarding transit options and promote information regarding SANDAG's iCommute program on a regular basis for residents through newsletters and online resources.

- **TDM Strategies for Hotel Guests** – These strategies would provide hotel guests with travel options other than private auto for trips to destinations inside and outside of the Project area:

  - Provide interim transit service (shuttle) between the Project site and the Escondido Transit Center and Route 388 on Valley Center Road/SR 76. Such service would be provided by the HOA with Phase 1 of the Project and would terminate when a transit linkage is proposed by the local transit district. Pick-ups and drop-offs would be at a central location in the Project's development area.
  - Provide an on-site bike-share program. Bike-share programs provide a shared group of bicycles that can be rented. Typically, the bikes are placed at a series of stations and the bikes

can be rented and returned to any station that is part of the system. The strategy includes providing a station at the country inn and subsidize hotel guest's use of the program.

- **TDM Strategies for Employees** – These strategies would provide employees with travel options other than private auto for trips to destinations inside and outside of the Project area:
  - Provide and promote information regarding SANDAG's iCommute program for commuters and on-site businesses. Provide informational packets to employees and online. Work with office tenants to market the services.
  - Provide interim transit service between the Project site and the Escondido Transit Center; such service would be provided by the HOA upon build-out of the community and would terminate when a transit linkage is proposed by the local transit district. Pick-ups and drop-offs would be at a central location in the Project's development area.
  - Provide commute trip reduction programs such as: promote programs to encourage workplace peak hour trip reduction, including staggered work hours and telecommuting. Coordinate with SANDAG's iCommute program for carpool, vanpool, and rideshare programs that are specific to the Project or develop ride-share matching program for Project employees.
  - Implement a parking cash out program, under which the employee can forgo their parking spot for a cash payment that is equal to the cost of the parking space to the employer.
  - Subsidize public transit passes. This program would provide public transit subsidy options for employees to and from the Project site.

- **Land Use & Design Strategies** –These strategies include land use diversity (mixed-use) and supporting design features that encourage residents/employees to walk, bike, or take transit within the Project area:
  - Per the County's requirements: *The project shall be required to coordinate with the North County Transit District(NCTD) on the siting of a future transit stop in Phase 2 and provide transit stop improvements concurrently with the development of Phase 2 (shelter and bench)*
  - Implement bicycle circulation improvements to improve internal bicycle usage throughout the Project site. Implement secure bicycle parking facilities in locations detailed in the Specific Plan. Construct sidewalks and trails within the site.

- Implement traffic calming techniques on Project area roadways such as reduced speeds on residential streets through design features such as narrow streets, speed-humps, and curb extensions. These features slow traffic on streets, encouraging walking and bicycling.

Transportation Coordinator

To ensure the TDM Program strategies are implemented and effective, the TDM program will be implemented and monitored through the Project's home owner's association (HOA). Specifically, as part of the HOA, a staff member or consultant will be designated to serve as the on-site Transportation Coordinator for the employees, hotel guests, and residents. The Transportation Coordinator would be responsible for developing, marketing, implementing, and evaluating the TDM Program; and, the provision of dedicated personnel makes the TDM Program more robust, consistent and reliable. Additionally, residents, hotel guests, and employees would have a designated point of contact for questions about the various TDM measures, which would allow them to easily stay informed of various TDM functions and eligibility.

It is anticipated that the Transportation Coordinator role would require approximately 8-16 hours per week.

The Transportation Coordinator's duties would include, but not be limited to, the following:

- Conduct transportation alternatives orientation for new employees and new residents.
- Assist with rideshare matching for employees commuting to the Project and residents commuting from their homes.
- Provide information on transit, bicycling, and walking to and from the Project.
- Act as a source of information regarding the TDM Program, including compliance with regulatory requirements and new potential TDM benefits.
- Coordinate TDM Program monitoring (administer surveys and coordinate data collection).

Monitoring

Monitoring is necessary to ensure that the Project is implementing the TDM Program consistent with the analysis presented in this memorandum. Monitoring would start once the community achieves an 85% occupancy level and occur every 3-5 years. The Transportation Coordinator would submit a monitoring report to San Diego County to document implementation and progress of the TDM Program including descriptions of all measures implemented. Specific elements of the monitoring report will be developed in coordination with County staff.

Table 3, TDM Program Performance Metrics and Targets, sets forth the applicable performance metrics and targets for each strategy identified for implementation herein. The purpose of the performance metrics is to ensure implementation of the VMT reduction strategies consistent with the analysis presented in this evaluation.

4. EVALUATION OF RECOMMENDED TDM PROGRAM STRATEGIES

As previously explained, the CAPCOA Report was referenced and utilized to determine the VMT reduction anticipated to be achieved by implementation of each component, or VMT reduction strategy included in the TDM Program. A detailed description of that analysis is presented in this section. **Table 2, TDM Program VMT Reduction Analysis Summary,** presents a summary of the evaluation. The table lists each VMT reduction measure analyzed here with a brief description, the applicable CAPCOA reference standard, and the projected VMT reduction. As shown in **Table 2**, the total VMT reduction that would be achieved with implementation of the TDM Program's VMT reduction strategies is **8.1 percent**.

Input Data Used in Analysis

The CAPCOA Report and VMT reduction equations therein include variables related to the community population, number of on-site employees, and work-related VMT for both residents and employees. Fehr & Peers utilized data provided by the Project team and the National Household Travel Survey data (**Attachment A**) to develop estimates for these variables as follows:

- Community Population: The Project proposes the construction of 1,746 dwelling units. The average household size used in this study is 2.97 persons per dwelling unit. This equates to approximately 5,185 Project residents (1,746 dwelling units * 2.97=5,185).
- Assisted Living and Group Residential Population: The assisted living and group residential facility includes 200 beds; therefore, if all beds were occupied, the facility would add 200 additional residents to the Project.
- Number of On-Site Employees: The number of employees for each non-residential land use was determined using regional information from SANDAG that defines the floor area per employee and information from the Project applicant. The total number of on-site employees is 672 as identified in **Table 1**, **Lilac Hills Ranch On-Site Employees**.

TABLE 1 LILAC HILLS RANCH ON-SITE EMPLOYEES

Land Use	Size	Floor Area per Employee	Employees (Equals Land Use Size Divided by Floor Area per Employee)
Specialty Retail	61,500 sf	500 sf/employee	123
Office	28,500 sf	200 sf/employee	143
Country Inn/Hotel	60,000 sf/50 rooms	1,850 sf/employee	32
Senior Center and Assisted Living and Group Residential Facility	213,000 sf/200 beds	1,050 sf/employee	203
Fire Station/Community Center	40,000 sf	1,300 sf/employee	31
K-8 School	82,500 sf/700 students	700 sf/employee	118
Church	29,000 sf	2,700 sf/employee	11
Phase 1 Park/Recreation Facility	2 acres	NA	3
Phase 3 Park w/Sports Fields	13 acres	NA	5
Community Recycling Center	0.6 acres	NA	1
Water Reclamation Facility	2.4 acres	NA	2
		TOTAL On-Site Employees	672

Notes: sf=square feet
Passive parks are assumed to not have separate employees.
Source: SANDAG, Email from Mike Calandra to Katy Cole dated 3/30/2017 and Fehr & Peers, 2017

- Number of Guests within the Country Inn/Hotel: Based on the American Hotel and Lodging Association 2014 Statistics Profile, there are on average 2 guests per hotel room. Based on PKF Hospitality Research (as reported in the San Diego Tribune on 12/16/2014), the average hotel occupancy rate in San Diego for 2014 was 74%. Assuming 74% occupancy the country inn/hotel would generate 100 guests (50 rooms * 74% occupied * 2 guests per room = 74 guests). The San Diego Tribune article is provided in **Attachment A**.

- VMT Associated with Residents, Resort Guests, and Employees: The total community residential, employee, and guest population for the proposed Project is 6,131 (5,185 residents + 200 assisted living residents + 74 country inn/hotel guests + 672 employees =6,135). Therefore, to determine how much each TDM measure affects each specific population group, the ratio of each population group is determined. For example, several measures are only applicable to the

residents; therefore, the VMT reduction associated with those TDM measures should only be applied the residential portion of the population. The ratio of each population group is::

- Residents of single- and multi-family homes: 84% of total community population (5,185 residents/ 6,131 total community population = 84%). Single-family home residents: 66% (4,072/6,131=66%); Multi-family residents: 18% (1,113/6,131=18%)
- Residents of the assisted living facility: 3% of total community population (200 / 6,131 = 3%)
- Employees: 11% of total community population (672 / 6,131 = 11%).
- Resort Guests: 1% of total community population (74 / 6,131 = 1%).
- Since the precise VMT associated with each community group is not directly available from the SANDAG model, these population ratios serve as a proxy for how much VMT is associated with each group.

- Residential based Work VMT: It is necessary to understand the amount of VMT that is due to residents within the single and multi-family homes traveling to work outside the Project. Conservatively, we estimate that all of the residents will work outside of the Project site. Residents account for 85% of the community population. The 2009 National Household Travel Survey (summary provided in **Attachment A**) provides information on trip purpose and indicates that 25% of home based trips are work related. Therefore, 20% of the overall VMT is home-based work related (80%*25%=20%).

- Residential-based School VMT: It is necessary to understand the amount of VMT attributable to residents within the single- and multi-family homes traveling to schools both within and outside the Project site. A K-8 school for a maximum of 700 students will be constructed on the Project site. Based on information contained within the Project's EIR, the Project is projected to generate 519 K-8 students and 519 high school students. Fehr & Peers estimates that the majority of elementary school students will attend the on-site K-8 school, but some K-8 school students may attend off-site private or charter elementary schools. Based on research conducted for the San Diego Unified School District, which serves a reasonable resource for San Diego County (see **Attachment** A) 79% of the 519 K-8 school students will attend the on-site public school (410 students) and 21% will go to off-site charter/private schools (109 students). All high school students will attend off-site schools (519 students). Similarly, 79% (410 students) of high school students are assumed to attend off-site public schools and 21% (109 students) off-site schools.

  As previously noted, residents would account for 85% of the community population. The 2009 National Household Travel Survey (summary provided in **Attachment A**) provides information on trip purposes and suggests that approximately 10% of home-based trips are school related. Therefore 8.0% of the overall VMT is home-based school related (85%*10%=8.0%).

  The following summarizes the input data used to calculate the VMT associated with on-site versus off-site schools:

- Total number of students: 519 K-8 students + 519 high school students= 1,038 total
- There are four categories of students:
  - On-Site K-8 School Students: 410 (519*79%)
  - Off-Site K-8 School Students: 109 (519*21%)
  - Off-Site Public High School Students: 410 (519*79%)
  - Off-Site Private/Charter High School Students: 109 (519*21%)
- **40%** of the students remain on-site (410/1,038=40%)
- **60%** of the students travel off-site (109 K-8 + 519 high / 1,038=60%)
- Total home based school VMT = 8.0%; therefore, 3.3% is related to on-site school trips (8.0%*40%) and 4.7% is related to off-site school trips (8.0%*60%). 3.3% is related to off-site high school trips (8.0%*40%).

INDIVIDUAL STRATEGY EFFECTIVENESS

TDM Strategies for Residents

Commute Trip Reduction for Residents

Interim Transit/Vanpool Program for Residents (Applies to Residential-based Work Trips)

The TDM Program includes the provision of providing vanpool service for residents. The interim private vanpool services program for residents includes the provision of a resident vanpool service that will serve employment centers outside of the Project area (CAPCOA TRT-11). The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with a vanpool program under the CAPCOA TRT-11 measure (note that this program would be coordinated through the SANDAG iCommute program):

% VMT Reduction = % shift in vanpool mode share of commute trips * % residents eligible * adjustments from vanpool mode share to commute VMT * % home based work VMT

- % shift in vanpool/shuttle mode share of commute trips (2-20% annual reduction according to CAPCOA Report, page 255) = 2% (Low-range of mode share shift to reflect the suburban nature of the Lilac Hills Ranch Project)
- % residents eligible (CAPCOA Report, page 255) = 20% (Low Range: low eligibility assumed to reflect the suburban nature of the Lilac Hills Ranch Project).

- Adjustments from vanpool mode share to commute VMT = 0.67 (CAPCOA Report, page 254)
- % home based work VMT = 21%
- *% VMT Reduction = 2% * 20% * 0.67 * 21% = 0.1%*

Implementation of an interim vanpool program for residents is expected to result in a **0.1%** VMT reduction.

Interim Private Transit Services (Network Expansion and Service Frequency Expansion through Local Shuttle Service)

The TDM Program includes the provision of private local shuttle service that would connect with existing transit routes/stops. A local shuttle service, whether privately operated or publicly operated, would function as a transit network expansion such that it would connect the Lilac Hills Ranch Project to existing transit stations in the surrounding areas. As a result, CAPCOA classifies the addition of shuttle services as a transit network expansion that results in a VMT reduction (CAPCOA TST-3, CAPCOA TST-6). The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with transit network expansion:

> % VMT Reduction = (% increase in transit network coverage) * (elasticity of transit) * (existing transit mode share) * (adj. factor = 0.67) * % VMT associated with residents

Reducing headways and increasing frequency also is associated with VMT reduction (CAPCOA TST-4). The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with reductions in headways/increased frequencies:

> % VMT Reduction = (% reduction in headways) * (elasticity of transit) * (level of implementation factor) * (existing transit mode share) * (adj. factor = 0.67)

According to the CAPCOA Report, increasing transit service frequency results in VMT reductions ranging from 0.02-2.5%.

For the Lilac Hills Ranch Project, the proposed shuttle service would cover the entire development area and provide service to transit hubs, park-and-ride areas, commercial areas, parks, and residential communities. The proposed shuttles would take users from the residential areas and commercial center to the Escondido Transit Center, approximately 10 miles away. This would connect Lilac Hills Ranch residents to the SPRINTER light rail and BREEZE bus lines. Additionally, any increase in the transit network would be 100% since there is no existing service in the development. Per CAPCOA standards for a suburban

development (CAPCOA TST-3), the following equation inputs are provided, resulting in the calculated percentage reduction:

- % increase in transit network coverage = 100%
- elasticity of transit = 1.01 (CAPCOA Report, page 277)
- existing transit mode share = 1.3% (CAPCOA Report, page 277, used because the Project site is currently undeveloped)
- adjustment factor = 0.67 (CAPCOA Report, page 277)
- % VMT associated with all residents: 85%
- *% VMT Reduction = 100% * 1.01 * 1.3% * 0.67 * 85% = 0.7%*

As to frequency, transit headways would be reduced by 100% since there is no existing service on the Lilac Hills Ranch development site. Per CAPCOA standards for a suburban development where more than 50% of the transit lines are being improved (CAPCOA TST-4), the following equation inputs are provided, resulting in the calculated percentage reduction:

- % reduction in headways: 100%
- elasticity of transit = 0.36 (CAPCOA Report, page 281)
- level of implementation factor = 85% (CAPCOA Report, page 281)
- existing transit mode share = 1.3% (CAPCOA Report, page 281, used because the Project site is currently undeveloped)
- adjustment factor = 0.67 (CAPCOA Report, page 281)
- % VMT associated with all residents: 85%
- *% VMT Reduction = 100% * 0.36 * 85% * 1.3% * 0.67 * 85%= 0.2%*

Thus, the total VMT reduction for increase in transit network and service frequency is **0.9%** (0.7%+0.2%=0.9%)

Carpool Matching Program/Guaranteed Ride Home Program (Commute Trip Reduction Programs – Applies to Residential-based Work Trips)

The TDM Program includes the provision of providing carpool/guaranteed ride home programs either through SANDAG's iCommute program or coordinated by the HOA. To ensure that residents are aware of all alternative transportation mode options available, a Carpool Matching Program and Guaranteed Ride Home program will be implemented. This measure includes coordination with SANDAG's iCommute program for carpool and rideshare programs that are specific to the Lilac Hills Ranch Project or

developing a Carpool Matching Program and Guaranteed Ride Home Program for Project residents as well as a potential matching service for active adults in the community.

The utilization of a Carpool Matching Program and Guaranteed Ride Home Program and SANDAG's iCommute program falls under CAPCOA TRT-1: Commute Trip Reduction Programs. This strategy focuses on reducing the commute trips of the residents of Lilac Hills Ranch through the encouragement of alternative modes of transportation such as carpooling, taking transit, walking, and biking. The CAPCOA Report provides the following equation to calculate the VMT reduction percentage associated with this strategy:

> % VMT Reduction = (% reduction in commute VMT) * (% population eligible) * % home based work VMT

- % reduction in commute VMT = 5.2% (CAPCOA Report, page 219, for low density suburban development)
- % population eligible = 20% (CAPCOA suggests an eligibility rate of 20-100%; for Lilac Hills Ranch, 20% is used conservatively as it is a low-density suburban development)
- % home based work VMT = 21%
- *% VMT Reduction = 5.2% * 20% * 21% = 0.2%*

Implementation of commute trip reduction programs is expected to result in a **0.2%** VMT reduction.

Car Share Program

The TDM Program includes the provision of providing an on-site car share program. Car share programs are membership-based programs that provide members access to a shared fleet of vehicles (CAPCOA TRT-9). Cost is generally based on a per mile or hourly basis. There are three common categories of car share programs: transit station-based, employer-based, or residential-based/citywide. Each of these programs has slightly different uses. Transit station-based car share generally is intended to close the "last mile" gap by allowing users to drive from the transit station to their final destination. Residential-based/citywide car share programs generally replace entire home-based trips.

The CAPCOA Report's methodology calculates the reduction in overall VMT attributable to car share programs as follows:

> % VMT Reduction = (% reduction in car share member annual VMT) * (number of car share members per shared car) * (deployment level based on urban or suburban context)

As to Lilac Hills Ranch, which is suburban in context, the calculations for % VMT reduction are as follows:

- % reduction in car share member annual VMT = 37% (CAPCOA Report, page 246)
- number of car share members per shared car = 20 (CAPCOA Report, page 246)
- deployment level (urban context) = 1 shared car / 2,000 population (CAPCOA Report, page 246). Suburban value used because of the low density suburban nature of the project.
- *% VMT Reduction = 37% * 20 * (1 / 2,000) = 0.4%*

Implementing a car share program for the Lilac Hills Ranch Project that provides at least one car per 2,000 residents would result in a **0.4%** VMT Reduction.

Transit Fare Subsidy for Residents (Applies to Residential-based Work Trips)

The TDM Program includes the provision of subsidizing transit fares for residents. The CAPCOA Report associates certain levels of transit fare subsidy with corresponding levels of commuter participation in transit based on locational context (CAPCOA TRT-4). Although the CAPCOA Report's methodology is applied to subsidies for employees, the same methodology can be used for the Lilac Hills Ranch residents (CAPCOA Report, page 232). For the Suburban context, CAPCOA estimates that a subsidy of $2.98 per person per day incentivizes a 7.9% reduction in commute VMT when residents are given a subsidy at their place of employment.

The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with resident transit fare subsidies of $2.98 per person per day:

> % VMT Reduction = (% residents eligible to participate) * (7.9% reduction in commute VMT) * (adjustment from commute VT (vehicle trips) to overall VMT) * (% Home based Work VMT)

The transit fare subsidy will be offered in conjunction with the Local Shuttle Service program previously discussed. Based on the above equation, the following are the inputs and resulting percentage reduction for this category:

- % residents eligible to participate = 20% (CAPCOA suggests an eligibility rate of 20-100%; for Lilac Hills Ranch 20% is used to reflect the suburban nature of the Project).
- reduction in commute VMT = 7.9% (CAPCOA Report, page 231)
- adjustment from commute VT (vehicle trips) to VMT = 1 (CAPCOA Report, Appendix C)
- % home based work VMT = 21%
- *% VMT Reduction = 20% * 7.9% *1* 21% = 0.3%*

At the level of $2.98 per day, which equates to between 60% and 100% of an existing round trip NCTD fare, depending on service class, a transit subsidy corresponds to a **0.3%** VMT reduction.

Bike-Share Program

The TDM Program includes the provision of an on-site bike share program. According to CAPCOA TRT-12, bike sharing programs have a minimal impact on VMT when implemented alone, but in conjunction with other strategies, a bike-share program can further enhance VMT reduction. Though the CAPCOA Report lists bike sharing as a strategy, it does not provide associated estimates for VMT reduction.

In membership surveys of an established urban bike-share system, a self-reported VMT reduction of 5.5% per year was observed. Based on additional investigation done by Fehr & Peers into the effectiveness of this strategy, in combination with our professional judgment, it is estimated that the availability of bike-share bicycles throughout the project site, in conjunction with subsidized membership packages, can reduce overall VMT by between 0.2% and 0.5%.

Since the bike-share program in this case will be provided in conjunction with bicycle lanes and trails, in conjunction with the fact that Lilac Hills Ranch is a mixed-use project where residents could use bike share to access on-site retail/restaurants, 0.5% was chosen. The 0.5% estimate was then calculated in combination with the % VMT associated with the residents, which is 85%. The final result of 0.5% * 85% = **0.4%,** is the predicted %VMT reduction of the planned bike share program.

School Pool Program

The TDM Program includes the provision of the HOA coordinating a school pool program for students traveling to off-site schools. CAPCOA TRT-10 states that the implementation of a school pool program involves the coordination and planning of parents to transport students to off-site public or private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing. The degree to which the school pool program would reduce school VMT (i.e., those vehicles miles generated by student travel to and from a school) ranges from 7.2% to 15.8% dependent upon the number of families participating in the program. The range of family participation in a school pool program according to CAPCOA TRT-10 is between 16% and 35%.

Based on the CAPCOA Report's methodology, the reduction in school VMT associated with implementation of a school pool program is calculated as follows:

% Reduction in School VMT = Participation rate of Families * 45% (CAPCOA TRT-10 Adjustment to convert from participation to daily VMT to annual school VMT) * % of home based school VMT outside the project site

- Participation rate of Families = 16% (CAPCOA TRT-10 indicates that typical participation rates are 16-35%; for Lilac Hills Ranch analysis, 16% was utilized to present a conservative analysis and reflect the suburban nature of the project.
- % of home based school VMT outside the Project Site = 4.7%
- % VMT Reduction = 16% * 45% * 4.7% = 0.4%

Thus, based on this methodology, the calculated VMT reduction associated with implementation of a school pool program for students attending schools outside of the Project site is **0.4%**.

School Bus Program

The TDM Program includes the provision of coordinating with the Bonsall Unified School District to provide school bus services for high school students within the Project. According to the CAPCOA Report, the implementation of a school bus program involves coordinating with local school districts to provide school bus service in the project area and local community (CAPCOA TRT-13). The degree to which the school bus program would reduce school VMT (i.e., those vehicles miles generated by student travel to and from a school) ranges from 38% to 63% dependent upon the number of families participating the program. For the Project, since the school busing provision is specific to public schools and all K-8 students attending public school would attend the on-site school, only the off-site high school students attending public schools would be affected by this program.

Based on the CAPCOA methodology, the reduction in school VMT associated with implementation of a school bus program is calculated as follows:

% Reduction in School VMT = Participation rate of Families * 39 school weeks / 52 weeks * % of home based school VMT outside the Project site

- Participation rate of Families = 50% (CAPCOA TRT-13 indicates that typical participation rates are 50-85%; for a conservative analysis, 50% was utilized to reflect the suburban nature of the project).
- % of home based school VMT outside the Project Site for the public high school students = 3.3%

- %VMT Reduction = 50% * (39/52) * 3.3% = 1.3%

The calculated VMT reduction associated with implementation of a school bus program is **1.3%** for students attending off-site schools.

Walking School Bus Program

The TDM Program includes the provision of providing a walking school bus program for K-8 students attending the on-site school. The calculation for a walking school bus program is the same as a typical school bus program but can only be applied to homes within walking distance of the on-site school. Based on a review of the Project's conceptual land use map, approximately 50% of the residential units are located within a walkable proximity (approximately 10-minute walk, which equates to ½ mile) to the on-site school.

Based on the CAPCOA Report's methodology, the reduction in school VMT associated with implementation of a walking school bus program is calculated as follows:

% Reduction in School VMT = Participation rate of Families * 39 school weeks / 52 weeks * % of home based school VMT inside the Project site

- Participation rate of Families = 25% (CAPCOA TRT-13 indicates that typical participation rates are 50-85%; for a conservative analysis and to reflect the suburban nature of the project 50% was assumed and applied to only residential units within walking distance to the school (i.e., ½ mile): 50%*50% = 25%
- % of home based school VMT inside the Project Site = 3.3%
- % VMT Reduction = 25% * (39/52) * 3.3% = 0.6%

The calculated VMT reduction associated with implementation of a walking school bus program for students attending the planned elementary school within the Project site is **0.6%**.

Unbundle Parking Program (applies only to residents of multi-family units)

The TDM Program includes the provision of unbundling multi-family parking costs (i.e. charging separately for access to parking spaces). According to the CAPCOA Report, separating the costs associated with the provision of parking spaces from the property costs associated with the dwelling unit then requires residents to purchase parking space in addition to the property price (CAPCOA PDT-2).

The CAPCOA Report's PDT-2 discussion assumes monthly parking costs to range from $25 to $125 dollars (CAPCOA Report, page 212). For purposes of this analysis, Fehr & Peers conservatively estimates that an unbundled parking program would cost residents who wished to purchase a parking space $25 dollars a month. A lower cost for parking results in a conservative VMT reduction estimate because the more expensive the parking, the more likely it is for residents to choose to not have a car or multiple cars, leading to higher VMT reductions.

Based on the CAPCOA Report's methodology, the reduction in residential VMT associated with implementation of an unbundled parking program is calculated as follows:

> % Reduction in Residential VMT = Change in vehicle costs * Elasticity of vehicle ownership with respect to total vehicle costs * Adjustment from vehicle ownership to VMT (A) * VMT associated with residents of multi-family units

- Change in vehicle costs = monthly parking costs ($25) * (12 / $4,000), with $4,000 representing the annual vehicle cost per the Victoria Transport Policy Institute (CAPCOA Report, page 211) = 0.075
- Elasticity of vehicle ownership with respect to total vehicle costs (conservative estimate per CAPCOA Report, page 211) = 0.4
- Adjustment from vehicle ownership to VMT (CAPCOA page 211) = 85%
- % VMT associated with residents of multi-family units = 18%
- %VMT Reduction = 0.075 * 0.4 * 85% * 18% = 0.5%

The calculated VMT reduction associated with implementation of an unbundled parking program is **0.5%**.

TDM Program Marketing (Applies to Residential-based Work Trips)

The TDM Program includes the provision of marketing the TDM program to residents. To ensure that residents are aware of all alternative transportation mode options available, "new resident" information packets will be distributed to all new residents. A website also will be created with the same information so that this information is always accessible. These sources will include information regarding the shuttles, bike-share kiosks, iCommute, park-and-ride areas, and all other alternative transportation options.

The continued expansion and utilization of iCommute, SANDAG's TDM program, also would support the successful dispensation of transportation choice information. Using "new resident" information packets, a transportation information website, and iCommute to dispense transportation information falls under CAPCOA TRT-7: Commute Trip Reduction Marketing. This strategy focuses on reducing the commute trips

of the residents of Lilac Hills Ranch. The CAPCOA Report provides the following equation to calculate the VMT reduction percentage associated with this strategy:

> % VMT Reduction = (% reduction in commute trips) * (% population eligible) * (adjustment from commute VT (vehicle trips) to VMT) * (% Home based Work VMT)

- % reduction in vehicle trips = 4% (CAPCOA Report, page 241)
- % population eligible = 50% (CAPCOA suggests an eligibility rate of 20-100%; for Lilac Hills Ranch 50% is used because the entire residential population would be receive marketing information, but to present a conservative analysis, 50% is applied to represent that half of the population would actually read and use the marketing materials.
- adjustment from VT to VMT = 1.0 (CAPCOA Report, page 241)
- % home based work VMT = 21%
- *% VMT Reduction = 4% * 50% * 1.0 * 21% = 0.4%*

Implementation of a TDM marketing program is expected to result in a **0.4%** VMT reduction.

Commute Services for Hotel Guests

Commute Trip Reduction for Hotel Guests

Interim Private Transit Services (Network Expansion and Service Frequency through Local Shuttle Service)

The TDM Program includes the provision of private local shuttle service that would connect with existing transit routes/stops. A local shuttle service, whether privately operated or publicly operated, would function as a transit network expansion such that it would connect the Lilac Hills Ranch Project to existing transit stations in the surrounding areas. As a result, the CAPCOA Report classifies the addition of shuttle services as a transit network expansion that results in a VMT reduction (CAPCOA TST-3, CAPCOA TST-6). The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with transit network expansion:

> % VMT Reduction = (% increase in transit network coverage) * (elasticity of transit) * (existing transit mode share) * (adj. factor = 0.67) * %VMT associated with hotel guests

Reducing headways and increasing frequency also is associated with VMT reduction (CAPCOA TST-4). The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with reductions in headways/increased frequencies:

% VMT Reduction = (% reduction in headways) * (elasticity of transit) * (level of implementation factor) * (existing transit mode share) * (adj. factor = 0.67) * %VMT associated with hotel guests

For the Lilac Hills Ranch development, the proposed shuttle service would cover the entire development area and provide service to transit hubs, park-and-ride lots, commercial areas, parks, and residential communities. The proposed shuttles would take hotel guests from the hotel and commercial uses and to the Escondido Transit Center, approximately 10 miles away. This would connect Lilac Hills Ranch guests to the SPRINTER light rail and BREEZE bus lines. Additionally, the transit network would increase by 100% since there is no existing service in the development. Thus, per CAPCOA standards for a suburban development (CAPCOA TST-3), the following equation inputs are provided, resulting in the calculated percentage reduction:

- % increase in transit network coverage = 100%
- elasticity of transit = 1.01 (CAPCOA Report, page 277)
- existing transit mode share = 1.3% (CAPCOA Report, page 277)
- adjustment factor = 0.67 (CAPCOA Report, page 277)
- %VMT associated with hotel guests = 1%
- *% VMT Reduction = 100% * 1.01 * 1.3% * 0.67 * 1% = 0.01%*

As to frequency, transit headways would be reduced by 100% since there is no existing service on the Lilac Hills Ranch development site. Per CAPCOA standards for a suburban development where more than 50% of the transit lines are being improved (CAPCOA TST-4), the following equation inputs are provided, resulting in the calculated percentage reduction:

- % reduction in headways: 100%
- elasticity of transit = 0.36 (CAPCOA Report, page 281)
- level of implementation factor = 85% (CAPCOA Report, page 281)
- existing transit mode share = 1.3% (CAPCOA Report, page 281)
- adjustment factor = 0.67 (CAPCOA page 281)
- %VMT associated with hotel guests = 1%
- *% VMT Reduction = 100% * 0.32 * 85% * 1.3% * 0.67 * 1% = negligible*

The frequency and transit headways results in a negligible VMT reduction; therefore, the total VMT reduction related to the shuttle service is **0.01%**.

Bike-Share Program

The TDM Program includes the provision of providing an on-site bike share program. As previously noted, according to CAPCOA TRT-12, bike sharing programs have a minimal impact on VMT when implemented alone, but in conjunction with other strategies, the program can further enhance VMT reduction. Though CAPCOA lists bike sharing as a strategy, it does not provide associated estimates for VMT reduction.

Also as previously noted, in membership surveys of an established urban bike-share system, a self-reported VMT reduction of 5.5% per year was observed. Based on additional investigation done by Fehr & Peers into the effectiveness of this strategy, in combination with our professional judgment, it is estimated that the availability of bike-share bicycles throughout the Project site, in conjunction with subsidized membership packages, can reduce overall VMT by between 0.2% and 0.5%.

Since the bike-share program in this case will be provided in conjunction with bicycle lanes and trails, and combined with the fact that Lilac Hills Ranch is a mixed-use project, 0.5% was chosen. The 0.5% estimate was then calculated in combination with the % VMT associated with the hotel guests, which is 2%. The final result of 0.5% * 1% = **0.01%,** is the predicted %VMT reduction of the planned bike share program for hotel guests.

Commute Services for Employees

Commute Trip Reduction for Employees

TDM Program Marketing for Employees (Applies to Employee Trips)

The TDM Program includes the provision of marketing the TDM program to on-site employees. To ensure that employees are aware of all alternative transportation mode options available, employees will have access to the commute trip reduction program information provided on the website. The website will have a dedicated page related to transportation programs available to employees of the proposed Town Center. Information will be provided regarding the shuttles, transit subsidies, iCommute, Park-and-Ride lots, and other alternative transportation options.

The continued expansion and utilization of iCommute, SANDAG's TDM program, also would support the successful dispensation of transportation choice information. The commute transportation programs marketing falls under CAPCOA standard TRT-7: Commute Trip Reduction Marketing. This strategy focuses on reducing the commute trips. The CAPCOA Report provides the following methodology to calculate % VMT reduction for this strategy:

% VMT Reduction = (% reduction in commute trips) * (% employees eligible) * (adjustment from commute VT (vehicle trips) to VMT) * (% Employee Based VMT)

- % reduction in vehicle trips = 4% (CAPCOA Report, page 241)
- % employees eligible = 70% (All office, retail and assisted living employees would receive marketing information: 469 office, retail, and assisted living employees/672 total employees=70%).
- adjustment from VT to VMT = 1.0 (CAPCOA Report, page 241)
- % employee based VMT = 11%
- *% VMT Reduction = 4% * 70% * 1.0 * 11% = 0.3%*

The TDM Program Marketing results in a **0.3%** VMT reduction.

Employer Sponsored Vanpool

The interim private transit services program for employees includes the provision of an employer sponsored vanpool service that will serve employment centers within of the Project area either with participation from residential areas outside of the project site or by connecting to transit services (such as the Escondido Transit Center) (CAPCOA TRT-11). According to the CAPCOA Report, employer-sponsored vanpool programs involve an employer acquiring vans or shuttles for employee use, and frequently providing partial funding for the program. The driver usually receives personal use of the van, often for a mileage fee. Scheduling is within the employer's authority, and employee ridership fees are typically set on the basis of the operating cost. The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with a vanpool program under the CAPCOA TRT-11 measure (note that this program would be coordinated through the SANDAG iCommute program).:

% VMT Reduction = % shift in vanpool mode share of commute trips * % employees eligible * adjustments from vanpool mode share to commute VMT * % Employee Based VMT

- % shift in vanpool/shuttle mode share of commute trips (2-20% annual reduction according to CAPCOA Report, page 255) = 2% (Low-Range: low degree of implementation is anticipated for the Lilac Hills Ranch Project due to the suburban nature of the project).
- % employees eligible (CAPCOA Report, page 255) = 70% (All office, retail and assisted living employees would receive marketing information: 469 office, retail, and assisted living employees/672 total employees=70%).
- Adjustments from vanpool mode share to commute VMT = 0.67 (CAPCOA Report, page 254)
- % employee based VMT = 11%

- *% VMT Reduction = 2% * 70% * 0.67 * 11% = 0.1%*

Implementation of an employer-sponsored vanpool service is expected to result in a **0.1%** VMT reduction.

Employee Trip Reduction Programs

The TDM Program includes the provision of employee trip reduction programs including carpooling, guaranteed ride home, telecommuting programs, and staggered work hours. To ensure that employees of the Lilac Hills Ranch Project are aware of all alternative transportation mode options available, a Carpool Matching Program as well as other trip reduction measures, including the promotion of staggered work hours and telecommuting, will be implemented. Coordination with SANDAG's iCommute program for carpool, vanpool, and rideshare programs that are specific to the Lilac Hills Project is required.

The utilization of a Carpool Matching Program and other employee based trip reduction strategies falls under CAPCOA TRT-1: Commute Trip Reduction Programs. This strategy focuses on reducing the commute trips of the employees of Lilac Hills Ranch through the encouragement of alternative modes of transportation, carpooling, telecommuting, or staggered work hours, as a way to reduce employee-based VMT. The CAPCOA Report provides the following equation to calculate the VMT reduction percentage associated with this strategy:

% VMT Reduction = (% reduction in commute VMT) * (% employees eligible) * % employee based VMT

- % reduction in commute VMT = 5.2% (CAPCOA Report, page 219, for low density suburb)
- % employees eligible = 70% CAPCOA suggests an eligibility rate of 20-100%; for Lilac Hills Ranch 70% of employees are considered eligible (All office, retail and assisted living employees would receive marketing information: 469 office, retail, and assisted living employees/672 total employees=70%).
- % employee based VMT = 11%
- *% VMT Reduction = 5.2% * 70% * 11%= 0.4%*

Implementation of commute trip reduction programs is expected to result in a **0.4%** VMT reduction.

Employee Parking Cash-Out Programs

The TDM Program includes the provision of employee cash-out programs allowing employees to give up a parking space in lieu of receiving the cost of the parking space. According to the CAPCOA Report,

offering employees the opportunity to "cash-out" their employer sponsored parking space can reduce employee based VMT by 0.6 – 7.7%. (CAPCOA TRT-15). When an employee is allowed to cash-out their parking space, the employer can provide the employees with their choice to give up their current employer sponsored parking space for a cash payment corresponding to the cost of the parking space to the employer.

Based on the CAPCOA Report's methodology, the VMT reduction attributable to implementation of an employee parking cash-out program is calculated as follows:

> % VMT Reduction = % reduction in commute VMT (from CAPCOA literature review) * % of employees eligible * % employee based VMT

- % reduction in commute VMT = 3% (low density suburb, CAPCOA Report, page 267)
- % of employees eligible = 70% CAPCOA suggests an eligibility rate of 20-100%; for Lilac Hills Ranch 70% of employees are considered eligible (All office, retail and assisted living employees would receive marketing information: 469 office, retail, and assisted living employees/672 total employees=70%).
- % employee based VMT = 11%
- %VMT Reduction = 3% * 70% * 11% = 0.2%

Based on this methodology, the calculated VMT reduction for the implementation of an employee parking cash-out program is **0.2%**.

Transit Fare Subsidy for Employees

The TDM Program includes the provision of providing transit fare subsidies to on-site employees. The CAPCOA Report associates certain levels of transit fare subsidy with corresponding levels of commuter participation in transit based on locational context (CAPCOA TRT-4). For the Suburban context, the CAPCOA Report provides that a subsidy of $2.98 per person per day, when employees are given a subsidy at their place of employment, incentivizes a 7.9% reduction in commute VMT.

The CAPCOA Report provides the following formula for calculating the percent VMT reduction associated with employee transit fare subsidies of $2.98 per person per day:

> % VMT Reduction = (% employees eligible to participate) * (7.9% reduction in commute VMT) * (adjustment from commute VT to commute VMT) * (% employee based VMT)

The transit fare subsidy will be offered in conjunction with the Local Shuttle Service program previously discussed. It is estimated that 70% of employees (all office, retail, and assisted living employees) who commute to jobs located within the Lilac Hills Ranch development's planning areas would be eligible to receive a transit fare subsidy provided by employers. The following calculations illustrate the process in determining VMT reduction for this category:

- % employees eligible to participate = 70%
- reduction in commute VMT = 7.9% (CAPCOA Report, page 231)
- adjustment from commute VT to commute VMT = 1.0 (CAPCOA Report, page 231)
- % employee based VMT = 11%
- *% VMT Reduction = 70% * 7.9% * 1.0 * 11% = 0.6%*

At the level of $2.98 per day, which equates to between 60% and 100% of an existing round trip NCTD fare, depending on service class, a transit subsidy corresponds to a **0.6%** VMT reduction (CAPCOA TRT-4).

Land Use and Design Strategies

Transit Facility Optimization

Per the County's requirements: *The project shall be required to coordinate with the North County Transit District(NCTD) on the siting of a future transit stop in Phase 2 and provide transit stop improvements concurrently with the development of Phase 2 (shelter and bench).* According to the CAPCOA Report, implemented transit facility or system improvements have not yet been quantified and, therefore, such improvements should be grouped together with Transit Network Expansion (TST-3) and Transit Service Frequency and Speed (TST-4). The CAPCOA calculations for Transit Network Expansion and Transit Service Frequency and speed are already incorporated into the calculations presented above and, therefore, no further VMT reduction is warranted.

Bicycle and Pedestrian Circulation Improvements

The TDM Program includes a system of on-site bicycle and pedestrian facilities. Providing a bicycle facility network that can be used by bicyclists provides the infrastructure necessary for residents to bike to different areas of the development instead of driving personal automobiles. According to the CAPCOA Report, to be effective in reducing VMT, the network should provide high accessibility and interconnectivity and supporting amenities such as bicycle parking for users so that they can walk and bike to all parts of the development. There are several CAPCOA strategies related to encouraging bicycle and pedestrian travel through design: SDT-1, SDT-6, SDT-7, and SDT-9. Each is addressed below.

The CAPCOA Report estimates that for urban and suburban projects, providing a pedestrian network within the project site that also connects to off-site pedestrian networks will reduce VMT by 0% to 2.0% depending on the extent of the Pedestrian facilities (CAPCOA SDT-1).

As to bicycle trails specifically, the research performed for the CAPCOA Report found that while bicycle trails did not result in a direct VMT reduction, providing bike trails supports the effectiveness of other TDM measures (CAPCOA SDT-9). Similarly, while providing short-term and long-term bike parking facilities throughout the development does not result in a direct VMT reduction according to the CAPCOA Report (CAPCOA SDT-6, CAPCOA SDT-7), bike parking increases the effectiveness of other measures as it provides the end user facilities necessary for bicycling. Since CAPCOA does not provide specific evidence to support VMT reductions for bicycle facilities and trails, no VMT reductions were applied.

CAPCOA SDT-1 states that pedestrian networks in a suburban context that are contained within a project site are expected to reduce VMT by 1%; therefore, a 1% VMT reduction was applied since the project is suburban in context and provides sidewalk and walking trail facilities within the project site.

As a result, a VMT reduction of **1%** for the pedestrian network within the Project area was applied**.**

Traffic Calming Features

The TDM Program includes traffic calming features throughout the Project site. CAPCOA SDT-2 states that implementation of traffic calming features promotes the use of active transit modes such as walking and bicycling. This mode shift away from private automobile trips can result in a reduction of VMT. Eligible traffic calming strategies should go beyond local jurisdiction requirements and can include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, and planter strips with street trees, amongst other features.

According to CAPCOA SDT-2, the percent reduction of VMT due to traffic calming features is dependent on the percentage of streets and intersections that contain such features. CAPCOA SDT-2 includes a matrix that identifies the % VMT reduction for traffic calming features based on the % of the roadways and intersections with traffic calming improvements. The TDM plan for Lilac Hills Ranch includes the provision of providing traffic calming features (such as high visibility crosswalks, reduced corner radii, speed humps) at least 25% of intersections and 25% of roadways. Based on the CAPCOA Report (page 191) the VMT reduction for 50% of intersections and 25% of roadways including traffic calming is 0.25%. The CAPCOA report indicates that traffic calming can result in a 0.25% - 1% VMT reduction; this study includes the low end 0.25% reduction to provide a conservative estimate.

Therefore, a VMT reduction of **0.25%** was applied to the overall calculation of VMT reduction.

TDM EFFECTIVENSS QUANTIFICATION SUMMARY

Based on the methodology outlined in the CAPCOA Report, when determining the overall VMT reduction, the VMT reduction separately calculated for each of the individual strategies (within their overall TDM strategy category) should be dampened, or diminished, according to a multiplicative formula to account for the fact that some of the strategies may be redundant or applicable to the same populations. The multiplicative equation to accomplish this adjustment is as follows:

Overall % VMT Reduction = 1-(1-A)*(1-B)*(1-C)*(1-D)*…

Where A, B, C, D … = individual mitigation strategy reduction percentages

For example, if two strategies were proposed with corresponding VMT reductions of 20% and 10%, the equation would be [1-(1-20%)*(1-10%)] or [1-(80%*90%)], which equates to a 28% reduction rather than the 30% reduction that would otherwise be seen with a direct sum. Therefore, the overall VMT reduction for the Lilac Hills Ranch Project was calculated as a dampened, or diminished, total according to the equation above, which produces a conservative overall estimate.

Moreover, several categories of VMT reduction strategies have maximum VMT reduction caps and reduction factors, as outlined where applicable in the individual TDM strategies. CAPCOA methodologies sometimes result in VMT reductions that are unreasonably large given the context of the project, so the CAPCOA Report offers category maximums and reductions to normalize the results.

The following is a summary of the VMT reductions attributed to each of the individual strategies (organized in their respective TDM strategy categories as required in the CAPCOA methodology):

TDM Strategies for Residents

- Vanpool Program: **0.1%**
- Private Transit Services: **0.9%**
- Carpool Matching Program/Guaranteed Ride Home Program: **0.2%**
- Car Share Program: **0.4%**
- Subsidized Transit Pass Program: **0.3%**
- Bike-Share Program: **0.4%**
- School Pool Program: **0.4%**
- School Bus Program: **1.3%**

- Walking School Bus Program: **0.6%**
- Unbundled Parking Program: **0.5%**
- TDM Strategy Marketing: **0.4%**
- Residential % VMT Reduction (Pre Adjustment) = **5.5%**
- **Residential % VMT Reduction** (multiplicative dampened formula applied) **=** 1 – (1 – 0.1%) * (1-0.9%) * (1 – 0.4%) * (1-0.3%) * (1 – 0.4%) * (1-0.4%) * (1 – 1.3%) * (1- 0.6%) * (1 – 0.5%) * (1-0.4%) = **5.4%**

TDM Strategies for Hotel Guests

- Hotel Shuttle Service (same service as the community shuttle): **0.01%**
- Bike-Share Program: **0.01%**
- Hotel Guest % VMT Reduction (Pre Adjustment) = **0.02%**
- **Hotel Guest % VMT Reduction** (multiplicative dampened formula applied) **=** 1 – (1 – 0.01%) * (1-0.01%) **= 0.02%**

TDM Strategies for Employees

- TDM Program Marketing for Employees: **0.3%**
- Employee Sponsored Vanpool: **0.1%**
- Employee Trip Reduction (includes staggered work hours, telecommuting and carpooling/guaranteed ride home): **0.4%**
- Employee Parking Cash-Out Program: **0.2%**
- Subsidized Transit Pass Program: **0.6%**
- Employee % VMT Reduction (Pre Adjustment) = **1.6%**
- **Employee % VMT Reduction** (multiplicative dampened formula applied) **=** 1 – (1 – 0.3%) * (1 – 0.1%) * (1 – 0.4%) * (1 – 0.2%) * (1 – 0.6%) = **1.6%**

Land Use TDM Strategies:

- Transit Facility Optimization: *Included in private transit calculations in other categories.*
- Bicycle Circulation Improvements: **1%**
- Traffic Calming Features: **0.25%**
- Category % VMT Reduction (Pre Adjustment) **=** **1.25%**
- **Category % VMT Reduction** (multiplicative dampened formula applied) **=** 1 – (1 – 1.0%) * (1 – 0.25%) **= 1.2%**

Summing all of the strategies results in a total of **8.2%;** however, the overall VMT reduction is calculated using the multiplicative formula to account for the fact that some of the strategies may be redundant or applicable to the same populations:

Overall VMT Reduction: *1 – (1 – 5.4%) * (1 – 0.02%) * (1 – 1.6%) * (1 – 1.2%) =* ***8.1%***

Table 2, TDM Program VMT Reduction Analysis Summary, provides a summary of the TDM Program quantification described above relative to the CAPCOA standards to determine the VMT reduction that would be achieved by each individual strategy. **Table 3, TDM Program Performance Metrics and Targets**, sets forth the applicable performance metrics and targets for each strategy identified for implementation herein. The purpose of the performance metrics is to ensure implementation of the VMT reduction strategies consistent with the analysis presented in this evaluation.

TABLE 2 – TDM PROGRAM VMT REDUCTION ANALYSIS SUMMARY

Lilac Hills Ranch TDM Measure	Required Elements for TDM Measure Effectiveness	CAPCOA Reference[1]	Individual Strategy VMT Reduction	Combined Strategy VMT Reduction
TDM STRATEGIES FOR RESIDENTS				
Interim Vanpool Program	• Provide interim vanpool services for residents between the Project site and employment centers outside of the Project area through the SANDAG iCommute program.	TRT-11: Provide Vanpool Services for Residents	**0.1%**	**5.4%**
Interim Private Transit Services	• Provide local shuttle service that will provide service to transit hubs, commercial centers, and residential areas. The service would provide access to the Escondido Transit Center and Route 388 on Valley Center Road/SR 76. Such service would be provided by the HOA with Phase 1 of the Project and would terminate when a transit linkage is proposed by the local transit district. • The shuttle service would be available to everyone in the Project site and be an on-demand/flex system or a circulator system that provides regular service.	TST-3: Expand Transit Network TST-6: Provide Local Shuttles	**0.9%**	
Carpool Matching Program & Guaranteed Ride Home	• Coordinate with SANDAG's iCommute program for carpool and rideshare programs that are specific to the Project or develop ride-share matching program for Project residents. • Offer a subsided ride home program (through	TRT-1: Commute Trip Reduction Programs	**0.2%**	

TABLE 2 – TDM PROGRAM VMT REDUCTION ANALYSIS SUMMARY

Lilac Hills Ranch TDM Measure	Required Elements for TDM Measure Effectiveness	CAPCOA Reference[1]	Individual Strategy VMT Reduction	Combined Strategy VMT Reduction
	Taxi's or Uber/Lyft type services) for participants in the transit, carpool, or vanpool programs.			
Car Share Program	• Provide coordination/support of a car sharing system to provide residents with access to a shared vehicle.	TRT-9: Implement Car-Sharing Program	**0.4%**	
Subsidized Transit Pass Program	• Provide subsidized transit passes for residents.	TRT-4: Implement Subsidized or Discounted Transit Program	**0.3%**	
Bike-Share Program	• Implementation of a bike-share program within the Project with station connectivity to the bicycle network within the Project site.	TRT-12: Implement Bike-Sharing Program	**0.4%**	
School Pool Program	• Provide a school pool match program to help parents to transport students to off-site public or private schools.	TRT-10: Implement a School Pool Program	**0.4%**	
School Bus Program	• Coordination with the school districts to provide school bus services to high school students going to off-site schools.	TRT-13: Implement a School Bus Program	**1.3%**	
Walking School Bus Program	• Implementation of a walking school bus program for students traveling to the on-site K-8 school.	TRT-13: Implement a School Bus Program	**0.6%**	
Unbundled Parking Program	• An unbundled parking program separates the parking costs for multi-family unit from the property costs/rent. A resident would pay a separate charge to have access to parking spaces.	PDT-2: Unbundle Parking Costs from Property Costs	**0.5%**	

TABLE 2 – TDM PROGRAM VMT REDUCTION ANALYSIS SUMMARY

Lilac Hills Ranch TDM Measure	Required Elements for TDM Measure Effectiveness	CAPCOA Reference[1]	Individual Strategy VMT Reduction	Combined Strategy VMT Reduction
TDM Strategy Marketing	• Provide information regarding transit/TDM options on a quarterly basis in the HOA newsletters. Provide new-residents with information packets about TDM programs. • Provide and promote information regarding SANDAG's iCommute program for residents. • Encourage formal/informal networks among residents that arrange carpools for ongoing or occasional trips for commute or non-commute purposes	TRT-7: Commute Trip Reduction Marketing	**0.4%**	
TDM STRATEGIES FOR HOTEL GUESTS				
Interim Private Transit Services	• Provide local shuttle service that will provide service to transit hubs, commercial centers, and residential areas. The service would provide access to the Escondido Transit Center and Route 388 on Valley Center Road/SR 76. Such service would be provided by the HOA with Phase 1 of the Project and would terminate when a transit linkage is proposed by the local transit district. • The shuttle service would be available to everyone in the Project site and be an on-demand/flex system or a circulator system that provides regular service.	TST-3: Expand Transit Network TST-6: Provide Local Shuttles	**0.01%**	**0.02%**
Bike-Share Program	• Implementation of a bike-share program within the Project with station connectivity to the bicycle network within the Project site.	TRT-12: Implement Bike-Sharing Program	**0.01%**	
TDM STRATEGIES FOR EMPLOYEES				
TDM Program Marketing for Employees	• Provide and promote information regarding SANDAG's iCommute program and Project TDM measures for commuters and on-site businesses. Provide informational packets to employees and online. Work with office tenants to market the services.	TRT-7: Commute Trip Reduction Marketing	**0.3%**	**1.6%**
Interim Private Transit/Vanpool Services	• The interim private transit services program for employees includes the provision of an employer sponsored vanpool service that will	TRT-11: Provide Employer-Sponsored Vanpool/Shuttle	**0.1%**	

TABLE 2 – TDM PROGRAM VMT REDUCTION ANALYSIS SUMMARY

Lilac Hills Ranch TDM Measure	Required Elements for TDM Measure Effectiveness	CAPCOA Reference[1]	Individual Strategy VMT Reduction	Combined Strategy VMT Reduction
	serve employment centers within of the Project area either with participation from residential areas outside of the project site or by connecting to transit services (such as the Escondido Transit Center).			
Employee Trip Reduction (Includes carpool services, staggered work hours, and telecommuting)	• Coordinate with SANDAG's iCommute program for carpool, guaranteed ride home, and rideshare programs that are specific to the Project or develop ride-share matching program for Project employees. • Promote programs to encourage workplace peak hour trip reduction, including staggered work hours and telecommuting.	TRT-1: Commute Trip Reduction Programs	**0.4%**	
Employee Parking Cash-Out Program	• This program allows employees to utilize parking "cash-out" plans. The employee can forgo their current parking spot for a cash payment that is equal to the cost of the sparking space to the employer.	TRT-15: Implement Employee Parking "Cash-Out"	**0.2%**	
Subsidized Transit Pass Program	• Provide subsidized transit passes for employees.	TRT-4: Implement Subsidized or Discounted Transit Program	**0.6%**	
LAND USE AND DESIGN STRATEGIES				
Transit Facility Optimization	• See Interim Private Transit Services	TST-2: Implement Transit Access Improvements TST-3: Expand Transit Network	**NA**	**1.2%**
Bicycle/Pedestrian Circulation Improvements	• Develop a comprehensive trails network that connects various Project components, land-uses, parks/open spaces, school, and the retail/commercial uses. • The pedestrian facilities would provide a comfortable walking environment and include shade trees and sidewalk furniture (benches, trash cans, etc.). • Provide bicycle racks and lockers along main travel corridors, adjacent to commercial	SDT-1: Provide Pedestrian Network Improvements SDT-6: Provide Bike Parking in Non-Residential Projects SDT-7: Provide Bike Parking in Multi-Unit Residential Projects SDT-9: Dedicate Land	**1%**	

TABLE 2 – TDM PROGRAM VMT REDUCTION ANALYSIS SUMMARY

Lilac Hills Ranch TDM Measure	Required Elements for TDM Measure Effectiveness	CAPCOA Reference[1]	Individual Strategy VMT Reduction	Combined Strategy VMT Reduction
	developments, at public parks and open spaces, and at multi-family residential uses within the Project site.	for Bike Trails		
Traffic Calming Features	• Project design will include traffic calming measures on at least 25% of on-site roadways and 25% of on-site intersections. • Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. • Traffic calming features include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, & median islands.	SDT-2: Provide Traffic Calming Measures	**.25%**	
			VMT REDUCTION PRE-ADJUSTMENT	**8.2%**
			OVERALL VMT REDUCTION (multiplicative formula applied)	**8.1%**

Notes: [1] **CAPCOA Designations: SDT**: Neighborhood/Site Enhancements; **TRT**: Commute Trip Reduction Program; **TST**: Transit System Improvement; **PDT**: Parking Policy/Pricing
Source: Fehr & Peers.

TABLE 3—TDM PROGRAM PERFORMANCE METRICS AND TARGETS

TDM Strategy	Description	Metric/ Performance Measure	Target	Collection Method	Collection Frequency	When Target Should Be Met
TDM STRATEGIES FOR RESIDENTS						
Interim Vanpool Program	Provide interim vanpool services for residents between the Project site and employment centers outside of the Project area through the SANDAG iCommute program.	Program implemented and utilized.	Program implemented. Based on the CAPCOA effectiveness calculation, 21 residents participate.	Transportation Coordinator Reports & Resident Surveys	Annually after Phase 1 of project.	Phase 1 of project.
Interim Private Transit Services	• Provide local shuttle service that will provide service to transit hubs, commercial centers, and residential areas. The service would provide access to the Escondido Transit Center and Route 388 on Valley Center Road/SR 76. Such service would be provided by the HOA with Phase 1 of the Project and would terminate when a transit linkage is proposed by the local transit district. • The shuttle service would be available to everyone in the Project site and be an on-demand/flex system or a circulator system that provides regular service.	Program implemented and utilized.	Shuttle service is provided and connects to the Escondido Transit Center and Route 388 on Valley Center Road/SR 76.	Transportation Coordinator Reports & Resident Surveys	Annually after Phase 1 of project.	Phase 1 of project.
Carpool Matching Program & Guaranteed Ride Home	Coordinate with SANDAG's iCommute program for carpool and rideshare programs that are specific to the Project or develop ride-share matching program for Project residents. Offer a subsided ride home program (through Taxi's or Uber/Lyft type services) for participants in the transit, carpool, or vanpool programs.	Program implemented and utilized.	Program implemented. Based on the CAPCOA effectiveness calculation, 54 residents participate	Transportation Coordinator Reports & Resident Surveys	Annually after full build-out of all development	Full build-out of all development
Car Share Program	Provide coordination/support of a car sharing system to provide residents with access to a shared vehicle.	Establishment of carshare stations through Zipcar or a similar service	Establishment of three (3) shared cars throughout the development	Field verification	Once after full build-out of all development	Full build-out of all development
Subsidized Transit Pass Program	Provide subsidized transit passes for residents.	Percentage of residents participating in subsidized transit pass program.	Based on the CAPCOA effectiveness calculation, 82 residents participate.	Transportation Coordinator Reports	Annually after full build-out of all development	Full build-out of all development
Bike-Share Program	Implementation of a bike-share program within the Project with station connectivity to the bicycle network within the Project site.	Establishment of bike share program.	Bike share program implemented.	Field verification	Once after full build-out of all development	Full build-out of all development
School Pool Program	Provide a school pool match program to help parents to transport students to off-site public or private schools.	Implementation of a school pool program for students traveling to off-site schools.	Program implemented and 16% of students traveling to off-site schools utilizing program.	Transportation Coordinator Reports & Resident Surveys	Annually after full build-out of all development	Full build-out of all development
School Bus Program	Coordination with the school districts to provide school bus services to high school students going to off-site schools.	School bus service is provided for high school students.	School bus service provided and 50% of public high school students traveling by bus to off-site high schools.	Transportation Coordinator Reports & Resident Surveys	Annually after full build-out of all development	Full build-out of all development
Walking School Bus Program	Implementation of a walking school bus program for K-8 students traveling to the on-site school.	Program implemented and utilized.	Program implemented and 25% of on-site K-8 students utilizing program.	Transportation Coordinator Reports & Resident Surveys	Annually after full build-out of all development	Full build-out of all development

TABLE 3—TDM PROGRAM PERFORMANCE METRICS AND TARGETS

TDM Strategy	Description	Metric/ Performance Measure	Target	Collection Method	Collection Frequency	When Target Should Be Met
Unbundled Parking Program	An unbundled parking program separates the parking costs for multi-family unit from the property costs/rent. A resident would pay a separate charge to have access to parking spaces.	Program implemented.	For multi-family units, parking cost is equivalent to $25/month/parking space.	Transportation Coordinator Reports & Resident Surveys	Annually after full build-out of all development	Full build-out of all development
TDM Strategy Marketing	• Provide information regarding transit/TDM options on a quarterly basis in the HOA newsletters. Provide new-residents with information packets about TDM programs. • Provide and promote information regarding SANDAG's iCommute program for residents. • Encourage formal/informal networks among residents that arrange carpools for ongoing or occasional trips for commute or non-commute purposes	Provide information regarding transit options and promote information regarding SANDAG's iCommute program on a quarterly basis in the HOA newsletters.	Materials created and maintained.	Transportation Coordinator Reports & Resident Surveys	Annually after full build-out of all development	Full build-out of all development
TDM STRATEGIES FOR HOTEL GUESTS						
Interim Private Transit Services	Provide local shuttle service that will provide service to transit hubs, commercial centers, and residential areas. The service would provide access to the Escondido Transit Center and Route 388 on Valley Center Road/SR 76. Such service would be provided by the HOA with Phase 1 of the Project and would terminate when a transit linkage is proposed by the local transit district. The shuttle service would be available to everyone in the Project site and be an on-demand/flex system or a circulator system that provides regular service.	Program implemented and utilized.	Shuttle service is provided and connects to the Escondido Transit Center and Route 388 on Valley Center Road/SR 76.	Transportation Coordinator Reports & Coordination with hotel staff.	Annually after Phase 1 of project.	Phase 1 of project.
Bike Share Program	Implementation of a bike-share program at the hotel complete with station connectivity to the trail and road network within the Project Site.	Establishment of bike share program.	Bike share program implemented.	Field verification	Once after full build-out of all development	Full build-out of all development
TDM STRATEGIES FOR EMPLOYEES						
TDM Program Marketing for Employees	Provide and promote information regarding SANDAG's iCommute program and Project TDM measures for commuters and on-site businesses. Provide informational packets to employees and online. Work with office tenants to market the services.	Provide information regarding transit options and promote information regarding SANDAG's iCommute program on a quarterly basis in the HOA newsletters.	Materials created and maintained.	Transportation Coordinator Reports	Annually after full build-out of all development	Full build-out of all development
Employer Sponsored Vanpool Services	The interim private transit services program for employees includes the provision of an employer sponsored vanpool service that will serve employment centers within of the Project area either with participation from residential areas outside of the project site or by connecting to transit services (such as the Escondido Transit Center).	Program implemented and utilized.	Program implemented. Based on the CAPCOA effectiveness calculation, 10 employees participate.	Transportation Coordinator Reports & Coordination with Employers (Employee Survey)	Annually after Phase 1 of project.	Phase 1 of project.
Employee Trip Reduction (Includes carpool services,	• Coordinate with SANDAG's iCommute program for carpool, guaranteed ride home, and rideshare programs that are	Program implemented and utilized.	Program implemented. Based on the CAPCOA effectiveness calculation, 25	Transportation Coordinator Reports &	Annually after full build-out of all development	Full build-out of all development

TABLE 3—TDM PROGRAM PERFORMANCE METRICS AND TARGETS

TDM Strategy	Description	Metric/ Performance Measure	Target	Collection Method	Collection Frequency	When Target Should Be Met
staggered work hours, and telecommuting)	specific to the Project or develop ride-share matching program for Project employees. Promote programs to encourage workplace peak hour trip reduction, including staggered work hours and telecommuting.		employees participate.	Coordination with Employers (Employee Survey)		
Employee Parking Cash-Out Program	This program allows employees to utilize parking "cash-out" plans. The employee can forgo their current parking spot for a cash payment that is equal to the cost of the sparking space to the employer.	Percentage of employees participating in parking cash out program.	Program implemented. Based on the CAPCOA effectiveness calculation, 14 employees participate.	Transportation Coordinator Coordination with Employers (Employee Survey)	Annually after full build-out of all development	Full build-out of all development
Subsidized Transit Pass Program	Provide subsidized transit passes for employees.	Percentage of employees participating in subsidized transit pass program.	Program implemented. Based on the CAPCOA effectiveness calculation, 37 employees participate.	Transportation Coordinator Coordination with Employers (Employee Survey)	Annually after full build-out of all development	Full build-out of all development
LAND USE AND DESIGN STRATEGIES						
Bicycle/Pedestrian Circulation Improvements	• Develop a comprehensive trails network that connects various Project components, land-uses, parks/open spaces, school, and the retail/commercial uses. • The pedestrian facilities would provide a comfortable walking environment and include shade trees and sidewalk furniture (benches, trash cans, etc.). Provide bicycle racks and lockers along main travel corridors, adjacent to commercial developments, at public parks and open spaces, and at multi-family residential uses within the Project site.	Pedestrian and bike network build-out that provides internal pedestrian and bike facilities that connect land uses within the project site	Full build-out of planned pedestrian and bike trails network that provides internal pedestrian and bike connections.	Field verification	Once after full build-out of all development	Full build-out of all development
Traffic Calming Features	• Project design will include traffic calming measures on at least 25% of on-site roadways and 25% of on-site intersections. • Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. • Traffic calming features include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, & median islands.	Presence of traffic calming features.	At least 25% of roadways and 25% of intersections have traffic calming features.	Field verification	Once after full build-out of all development	Full build-out of all development

Source: Fehr & Peers.

Attachment A

National Household Travel Survey Data, Hotel Occupancy Data, Public vs. Private School Data

FEHR PEERS

2009 NHTS

Vehicle Trips (Travel Day VT, annualized)

Number of Vehicle Trips (VT) by Purpose

Trip purpose summary	Travel Day Vehicle Trips		
	Sample Size	Sum (Millions)	Percent
Refused	140	27	0
Don't know	199	53	0
Not ascertained	20	2	0
Home	255,692	79,901	34.2
Work	101,537	37,799	16.2
School/Daycare/Religious activity	19,655	6,511	2.8
Medical/Dental services	15,658	3,759	1.6
Shopping/Errands	163,004	45,353	19.4
Social/Recreational	64,252	19,714	8.4
Family personal business/Obligations	24,678	6,775	2.9
Transport someone	51,763	18,755	8
Meals	50,077	14,677	6.3
Other reason	1,467	523	0.2
All	748,142	233,849	100

Sum of Work, School, Medical, Shopping, Social, Family personal business, Transport someone, Meals, and Other reason Trips: 153,866 Trips

Work Trips: 37,799 Trips

Work Trips / Sum:25%

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Record year for region's hotels

Hilton San Diego Bayfront Hotel

By **Jonathan Horn**

DECEMBER 16, 2014, 6:03 PM

Visitors traveled to San Diego in record numbers in 2014, booking more hotel room nights, spending more money, and paying more in tourist taxes than they have in any prior year.

Figures released Tuesday by the San Diego Tourism Authority show that 33.8 million out-of-towners visited America's Finest City this year, spending $9 billion on lodging, food, entertainment and travel here. In all, they stayed a collective 16.2 million room nights and generated $244 million in transient

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San Diego's success is part of a nationwide rebound in tourism overall. Numbers provided by PKF Hospitality Research show that markets across the country are having record-breaking years in terms of their hotel occupancy rates. San Diego actually trails Los Angeles, Anaheim and San Francisco in that category, according to the data. Through September, San Diego had a record 74.3 percent hotel occupancy rate, up from 71.6 percent last year. Anaheim's rose to 75.9 percent, Los Angeles hit 78.8 percent, and San Francisco was up to 83.8 percent, the PKF report shows. Nashville, Seattle, Denver, New York, Miami and Pittsburgh are also on pace to set records, among others.

Esmael Adibi, economist at Chapman University, said increased tourism activity had a lot do with the dollar being relatively weak for much of 2014. He said instead of traveling to Europe, someone who lives on the West Coast would go east, while someone living on the East Coast would head west. In the last few months, the dollar has gained strength, making international travel more affordable. Meanwhile, over the last year national unemployment has dropped from 7 percent to 5.8 percent, evidence of an improving economy.

"Domestic tourism started making a good comeback," Adibi said. "It all goes back to consumers, it all goes back to the overall recovery."

Joe Terzi, chief executive of the Tourism Authority, said the local gains had much to do with $15 million in marketing done by his agency, including efforts to tap into China. Last year, 33.1 million people came to San Diego County, staying 15.3 million room nights, spending $8.4 billion and generating an estimated $217 million in taxes, says the Tourism Authority report, published by Tourism Economics.

"We think we're well known and to some degree we are, but not necessarily as well known as some other destinations we compete with," Terzi said. "We compete across the country for leisure travelers, probably more than other destinations," Terzi said.

The Tourism Authority projects the county's occupancy rate to rise from 74.7 percent this year to 76.3 percent in 2015, with the average room night increasing about 5.5 percent to $150.52. The report projects San Diego setting a new visitor record each year through 2019, with 34.6 million expected in 2015.

With the increased demand, the leisure and hospitality industry continues to expand, adding 3,700 new workers over the last year, for 2.2 percent payroll growth.

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Bob Rauch, who owns hotels across San Diego, said his hotels are running at a record 80 percent occupancy and his rates are increasing 5 percent each year. He said optimism is spreading across the country.

“It’s definitely a national story. If you go to a hotel conference, they’re starting to get bullish on 2017 and 2018,” Rauch said.

Rauch said getting more nonstop international flights to San Diego would cause some of those travelers to reconsider their destination. More flights would be a good complement to the direct service offered by Japan Airlines from San Diego to Tokyo.

“Where the demand tails off is people would still rather fly somewhere that’s easier to get to, and Las Vegas and L.A. are the answers,” Rauch said.

The Tourism Authority says nearly 45 percent of San Diego’s visitors are from other parts of California and Arizona, while international travelers make up about 11 percent. That lags San Francisco and Los Angeles, whose major international airports generate more than a quarter of their visitors from other countries.

Jerry Morrison, a San Diego hotel consultant, said the improved economy is what makes tourism activity possible.

“If they don’t feel good about the economy and they don’t feel good about their own position within the economy, you can’t make somebody who doesn’t have the money buy,” he said.

U-T staff writer Lori Weisberg contributed to this report.

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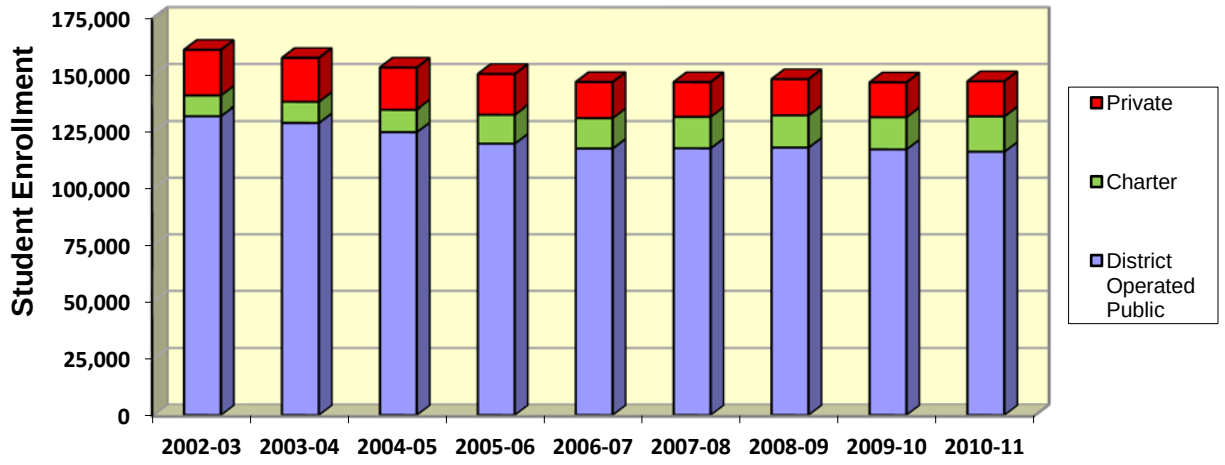
San Diego Unified School District
Status Report: 2002-2011

May 2012

As Figure 1 demonstrates, the mix of enrollment by school type has shifted over the past nine years. Over this time period, public and private school enrollment has declined while charter school enrollment has increased.

Figure 1
Student Enrollment by School Type
SDUSD



Enrollment in district-operated schools declined during this time span. The total number of students in district-operated schools was 116,170 in 2010-11, a decline of 12% since 2002-03 when enrollment totaled 131,865 students. Enrollment also declined for private schools located within the geographic boundaries of the district during this period. In 2010-11, a total of 15,243 students were enrolled in private schools within district boundaries, 24% fewer than 2002-03. At the same time, charter school enrollment has increased. In 2010-11, a total of 15,614 students were enrolled in 41 charter schools within the district, up 76% since 2002-03 when 8,888 students were enrolled in 20 charter schools. In 2010-11, the total number of students enrolled in San Diego charter schools was 12% of the number enrolled in both district-operated and charter SDUSD schools combined.

Figure 2 on the following page charts the growth in the enrollment and number of charter schools located within SDUSD between 2002 and 2011.

ATTACHMENT G:

Electric Vehicle
Emission Reductions

Electric Vehicle Emissions Reductions

Total Residential Population (Project Only)	5,185	Population
Average Drivers per 1,000 residence	639	
Total Project Related Cars	3,313	Drivers
6% of Cars would be ZEV Per EMFAC	199	Cars
7% Additional project related ZEV	232	Cars
Total ZEV Cars	431	Cars

ZEV can be Plugin Hybrid Electric Vehicle (PHEV), Battery Electric Vehicle (BEV) and Fuel Cell Electric Vehicle (FCEV). Though FCEV not practical due to lack Hydrogen fueling station infrastructure

Breakdown of added EV above EMFAC		232	Cars
	Percentage		
PHEV	60%	139	Cars
BEV	40%	93	Cars

Tailpipe Emissions based on analysis using Union of Concerned Scientist		
	Emissions	
Internal Combustion Engine	310	grams/mile
PHEV	185	grams/mile
BEV	110	grams/mile

Derived Tailpipe Emissions		
Internal Combustion Engine	100%	Tailpipe
	0%	Charging
BEV	0%	Tailpipe
	100%	Charging
PHEV	Total - Offsite	Tailpipe
	50% of BEV	Charging

Internal Combustion Engine	381	grams/mile	Tailpipe
	0	grams/mile	Charging
BEV	0	grams/mile	Tailpipe
	110	grams/mile	Charging
Total Emissions (Percent Lower than Internal Combustion Engines)	71.1%		
Tailpipe Only (Percent Lower than Internal Combustion Engines)	100.0%		
PHEV	130.0	grams/mile	Tailpipe
	55.0	grams/mile	Charging
Total Emissions (Percent Lower than Internal Combustion Engines)	51.4%		
Tailpipe Only (Percent Lower than Internal Combustion Engines)	65.9%		
Project Related Vehicles			
Total Vehicles	3,313	Cars	
Project added PHEV	139	Cars	
Project added BEV	93	Cars	
Project ZEV Reductions per mile Driven	79.53%		

Total Trips after TDM Reductions	12,546.19	trips/day
Average Trip length per SANDAG	12.95	miles
Trips per Day per driver	3.787	trips
Miles per day per driver	49.04	miles
PHEV Miles Driven Per day	6,823.87	miles
BEV Miles Driver Per day	4,549.25	miles
Total Miles Driven per day ZEV	11,373.12	miles
Total Miles Driven per year ZEV	4,151,189.25	miles
CalEEMod Emissions per Mile Driven	0.000308	MT/CO2e
Total Emission Reduction	1,016.81	MT/CO2e

ATTACHMENT H:

High Efficiency Lighting Reductions

Attachment H: High Efficiency Non-Residential Lighting

The lighting intensity in CalEEMod is the same for historical buildings and new developments. The number has not been adjusted or changed in Version 2011, 2013 or 2016 that would account for better lighting technologies. High Efficiency lighting is not required per code with the exception of 50% of the outdoor lighting 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. For example: a 10 watt LED bulb replaces a 60 watt standard bulb, which would be 83% more efficient. A typical 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 65% as can be seen in the tables below. Therefore, to be conservative the lighting intensity in CalEEMod was adjusted 65% with the installation of 100% HE bulbs.

100% LED for smaller Non-Residential buildings (i.e., Recreational Center, Senior Center)

	Standard Lights	HE Lights	Standard Wattage	HE Wattage	Energy Use (Standard)	Energy Use (HE)	Total Energy
Normal Lighting	60*	10	100	15	6,000	1500	6,150
100% HE Lighting	0	70	--	15	----	1,050	1,050
						Savings	5,000
						% Reduction	81%

*All indoor lighting is standard bulbs and half of the outdoor lighting is standard bulbs.

100% LED for larger Non-Residential buildings (i.e., commercial Office, School)

	Indoor Lights	Outdoor Lights	Indoor Wattage	Outdoor Wattage (Standard/HE)	Energy Use (Indoor)	Energy Use (Outdoor)	Total Energy
Normal Lighting	100	30	60	300/100	6,000	4,500/1,500	12,000
100% HE Lighting	100	30	10	0/100	1,000	0/3,000	4,000
						Savings	8,000
						% Reduction	67%

ATTACHMENT I:

Estimated Solar Energy Calculations

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

Model elevation

Northern boundary
34

Western boundary
-118

Center
Latitude **33.5**
Longitude **-117.5**

Eastern boundary
-117

Southern boundary
33

Parameters for Tilted Solar Panels:

Monthly Averaged Radiation Incident On An Equator-Pointed Tilted Surface (kWh/m^2/day)

Lat 33.36 Lon -117.07	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
SSE HRZ	3.05	3.80	5.05	6.38	6.72	6.97	6.97	6.52	5.53	4.26	3.44	2.86	5.13
K	0.56	0.56	0.59	0.63	0.60	0.60	0.61	0.62	0.61	0.58	0.60	0.57	0.59
Diffuse	0.90	1.18	1.48	1.71	2.08	2.19	2.07	1.82	1.54	1.25	0.90	0.80	1.50
Direct	5.09	5.27	6.22	7.29	6.91	7.06	7.25	7.16	6.59	5.75	5.76	5.14	6.30
Tilt 0	3.00	3.77	5.00	6.23	6.69	6.93	6.93	6.49	5.45	4.23	3.37	2.83	5.08
Tilt 18	3.96	4.60	5.63	6.53	6.58	6.67	6.74	6.59	5.95	5.03	4.39	3.85	5.55
Tilt 33	4.52	5.02	5.83	6.39	6.13	6.09	6.20	6.29	6.03	5.40	4.98	4.47	5.61
Tilt 48	4.82	5.17	5.71	5.92	5.38	5.21	5.36	5.67	5.78	5.48	5.28	4.83	5.38
Tilt 90	4.19	4.10	3.86	3.16	2.48	2.25	2.35	2.84	3.60	4.15	4.50	4.34	3.48
OPT	4.87	5.17	5.83	6.53	6.71	6.93	6.94	6.61	6.04	5.49	5.31	4.9[illegible]	5.95
OPT ANG	57.0	48.0	35.0	20.0	5.00	0.00	2.00	12.0	29.0	44.0	55.0	60.0	30.4

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

Parameter Definition

$$E\ (kWh) = Power\ Installed\ (kW) * H * 365days * PR$$

Power Installed = 14,511.845 kWp

H= Annual Average irradiation on tilted panels (kwh/m^2/year) = 5.95 (365) = 2,171.75

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

E=Energy (kWh) = 14,250.845 kWp * 2,171.75 (kwh/m^2/year) *.80 = 25,212,879.50 kWh

Subtract off EV Energy Consumption 25,212,879.50 kWh – 664,680 kWh = 24,548,199.50 kWH

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-2.45482e +007	- 4,466.8669	-0.1782	-0.0334	- 4,481.2754
Total		**- 4,466.8669**	**-0.1782**	**-0.033[illegible]**	**- 4,481.2754**

ATTACHMENT J:

CALEEMOD – Solar Panel Reductions

Lilac Hills Ranch (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	0.00	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)	401.16	**CH4 Intensity (lb/MWhr)**	0.016	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 50%

Land Use - E=Energy (kWh) = 14,511.845 kWp * 2,171.75 (kwh/m^2/year) *.80 = 25,212,879.50kWh
Subtract off EV Energy Consumption 25,212,879.50kWh - 664,680 kWh = 24,548,199.50 kWH

Construction Phase -

Off-road Equipment - zero

Energy Use - zero

Energy Mitigation - E=Energy (kWh) = 14,511.845 kWp * 2,171.75 (kwh/m^2/year) *.80 = 25,212,879.50kWh
Subtract off EV Energy Consumption 25,212,879.50kWh - 664,680 kWh = 24,548,199.50 kWH

Table Name	Column Name	Default Value	New Value
tblOffRoadEquipment	UsageHours	6.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	401.16
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2018	2030
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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					
2025	0.0000	0.0000	0.0000	0.0000	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					
2025	0.0000	0.0000	0.0000	0.0000	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	-4,466.8669	-4,466.8669	-0.1782	-0.0334	-4,481.2754
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**	**-4,466.8668**	**-4,466.8668**	**-0.1782**	**-0.0334**	**-4,481.2754**

	ROG	NOx	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**	**22,334,334,250.00**	**22,334,334,250.00**	**0.00**	**0.00**	**22,406,376,900.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/30/2025	4/29/2025	5	0	

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
Architectural Coating	Air Compressors	1	0.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	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 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	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 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	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	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	-4,466.8669	-4,466.8669	-0.1782	-0.0334	-4,481.2754
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	-2.45482e+007	-4,466.8669	-0.1782	-0.0334	-4,481.2754
Total		**-4,466.8669**	**-0.1782**	**-0.0334**	**-4,481.2754**

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

ATTACHMENT K:

CARB Scoping Plan
Onsite Mitigation
Evaluation

ATTACHMENT K

ASSESSMENT OF MITIGATION MEASURES

RECOMMENDED BY THE CALIFORNIA AIR RESOURCES BOARD

TO REDUCE GREENHOUSE GAS EMISSIONS

Appendix B of *California's 2017 Climate Change Scoping Plan* (November 2017) is a reference document prepared by the California Air Resources Board (CARB) regarding mitigation measures that could be required of individual projects under the California Environmental Quality Act (CEQA), if feasible, when the local jurisdiction is the lead agency.

CARB states that the appendix "should be viewed as a general reference document;" it "should not be interpreted as official guidance or as dictating requirements." CARB relatedly notes that "[n]ot all of the listed local measures or CEQA measures listed will be relevant to, or appropriate for, a given area or project. Nothing in the Scoping Plan or this appendix limits the discretion conferred to lead agencies in determining the appropriate level and type of mitigation, so long as their decisions are supportable by evidence in the record as required by CEQA. There is no 'one size fits all' solution and different policies will be more suitable in urban and suburban areas versus rural areas, among other considerations."

The purpose of this attachment is to assess the potential applicability of CARB's identified mitigation measures to the Lilac Hills Ranch Project. Where potentially applicable, this attachment then discusses whether the Lilac Hills Ranch Project implements the identified mitigation measures and/or other comparable strategies designed to reduce greenhouse gas emissions. As illustrated by the tabular analysis that follows, the Lilac Hills Ranch Project implements a wide range of strategies that will reduce greenhouse gas emissions on the Project site and within the County of San Diego.

Evaluation of Lilac Hills Ranch Project's Utilization of Mitigation Measures Identified by The California Air Resources Board in Appendix B of the 2017 Scoping Plan Update

Mitigation Options	Project Evaluation
Construction	
Enforce idling time restrictions for construction vehicles	*Consistent*. As a matter of regulatory compliance, construction equipment shall be operated in accordance with the California Air Resources Board's (CARB) Airborne Toxic Control Measure (ATCM) that limits diesel-fueled commercial motor vehicle idling. In accordance with the subject ATCM (see Cal. Code Regs., tit. 13, §2485), the drivers of diesel-fueled commercial motor vehicles meeting certain specifications shall not idle the vehicle's primary diesel engine for longer than five minutes at any location. The ATCM requires the owners and motor carriers that own or dispatch such vehicles to ensure compliance with the ATCM requirements. For additional information, please see https://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm.
Require construction vehicles to operate with the highest tier engines commercially available	*Consistent*. As discussed in the Lilac Hills Ranch Specific Plan (Specific Plan), Tier III or higher construction equipment will be used, with the exception of concrete/industrial saws, generator sets, welders, air compressors, or construction equipment where Tier III or higher is not available.
Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible	*Consistent*. As a matter of regulatory compliance, the Lilac Hills Ranch Project (Project) would accord to the County of San Diego's ordinance regarding the disposal of construction and demolition debris. The subject ordinance requires that 90% of inert materials and 70% of all other materials associated with construction and demolition activities be recycled. The ordinance also requires the preparation and submittal of a Construction and Demolition Debris Management Plan and a refundable Performance Guarantee prior to building permit issuance. For additional information, please see http://www.sandiegocounty.gov/dpw/recycling/cdhome.html.

Mitigation Options	Project Evaluation
Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to vegetation removal, loss of sequestration, and soil disturbance	*Consistent.* Mitigation Measure GHG-2 requires the Project to purchase and retire carbon offsets in a quantity sufficient to offset 100 percent of the Project's GHG emissions that are associated with vegetation removal. Further, as discussed in the Specific Plan, prior to recordation of each final map, a re-vegetation plan shall be submitted to the County of San Diego for review and approval by the Director of Planning and Development Services. Finally, the Specific Plan discusses the Project's use of vegetation that is drought-tolerant, native and regionally appropriate, criteria that accord to the guidelines set forth in the County's Water Conservation and Landscape Design Manual.
Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators	*Consistent.* To the extent practicable and feasible, electricity will be used to power appropriate types and categories of construction equipment (e.g., hand tools).
Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available	*Consistent.* To the extent practicable and feasible, electric and renewable fuel powered construction equipment will be utilized.
Require diesel equipment fleets to be lower emitting than any current emission standard	*Consistent.* To the extent practicable and feasible, diesel equipment fleets that exceed existing emissions standards will be utilized.
Operation	
Comply with lead agency's standards for mitigating transportation impacts under SB 743	*Not Applicable.* The Governor's Office of Planning and Research (OPR) has not yet adopted amendments to the State CEQA Guidelines pursuant to Senate Bill (SB) 743. Additionally, the County of San Diego has not adopted guidelines or guidance regarding the implementation of SB 743 at the jurisdictional level, and its obligation to do so will be triggered upon completion of OPR's amendment process to the State CEQA Guidelines. Nonetheless, it is noted that the Project would implement a Transportation Demand Management (TDM) program, developed by an expert transportation consulting firm (Fehr & Peers) (see

Mitigation Options	Project Evaluation
	Attachment F). The subject TDM program would reduce the Project's vehicle miles traveled (VMT) by 8.1% at build out.
Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals	*Consistent.* The Project would provide a Level 2 single-port electric vehicle (EV) charging station for every residential unit, and would install an additional 22 Level 2 dual-port charging stations (serving a total of 44 parking spaces) throughout the parking areas for the Project's on-site, non-residential uses. The Project also would install 13 Level 2 dual-port charging stations (serving a total of 26 parking spaces) at publicly accessible, off-site locations in the County of San Diego.
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate[1] [1] This is not to be confused with the Americans with Disabilities Act (ADA) requirements or other minimum parking requirements for dedicating space to clean air vehicles and/or EV charging infrastructure.	*Not Applicable.* Based on the TDM program evaluation completed by Fehr & Peers, in lieu of limiting the volume of on-site parking opportunities, other VMT-reducing strategies were identified to incentivize the use of alternative modes of transportation to, from and within the Project site. Such strategies include the provision of interim transit pool program and private transit services, unbundled parking, employee parking cash-out programs, and other strategies described in Fehr & Peers' supporting technical memorandum (see ***Attachment F***). It also is noted that the Specific Plan provides for the utilization of shared parking opportunities between surrounding land uses.
Dedicate on-site parking for shared vehicles	*Consistent*. As a matter of regulatory compliance, the Project would comply with Section 5.106.5.2 of the 2016 California Green Building Standards Code (CALGreen Code), which requires the provision of designated parking for shared vehicles.
Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in multi-family residential projects and in non-residential projects	*Consistent*. As discussed in the Specific Plan, the Project would provide secured bicycle parking facilities and bicycle circulation improvements to encourage the use of bicycles. (See also ***Attachment F***.)
Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements	*Consistent.* As discussed in the Specific Plan and the TDM program evaluation prepared by Fehr & Peers (see ***Attachment F***), the Project would provide extensive infrastructure (e.g.,

Mitigation Options	Project Evaluation
identified in an applicable bicycle and/or pedestrian master plan	designated bike lanes and multi-purpose/multi-use trails) and related amenities for bicyclists and pedestrians that is intended to facilitate the creation of integrated, walkable neighborhoods. Additionally, the Project's TDM program provides for interim, private-sponsored transit opportunities until the time that the Project site is serviced by public transit opportunities.
Require on-site renewable energy generation	*Consistent*. The Project's residential development will be designed to achieve Zero Net Energy (ZNE) standards, as defined by the California Energy Commission (CEC). Achievement of the ZNE standards will be secured through enhanced efficiencies in the building envelopes and the utilization of on-site renewable energy sources (i.e., rooftop solar) (Please see ***Attachment D***). Additionally, the Project's non-residential land uses will be served by rooftop solar installations on a minimum of 45 percent of the non-residential building roof space and all covered parking areas. This combination of solar coverage locations (i.e., non-residential building roof space and covered parking areas) is estimated to meet approximately 100% of the non-residential land uses' demand for electricity.
Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments	*Consistent.* As discussed in the Specific Plan, all fireplaces installed in the Project's residential development areas must be natural gas or equivalent non-wood burning fireplaces.
Require cool roofs and "cool parking" that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing	*Consistent*. As discussed above, the Project's residential development will be designed to achieve the CEC's ZNE standards, which ensures that the residences will be designed to achieve the type of green building advancements contemplated by this measure. Additionally, as discussed in the Specific Plan, the Project's parking facilities will achieve cooling benefits through the implementation of vegetation plans that are mindful of the need to provide shading and reduce the formation of urban heat islands.
Require solar-ready roofs	*Consistent*. As discussed above, the Project's residential development would utilize rooftop solar to achieve the CEC's ZNE standards. Additionally, the Project's non-residential development

Mitigation Options	Project Evaluation
	would utilize rooftop solar on a minimum of 45 percent of the non-residential building roof space and all covered parking areas.
Require organic collection in new developments	*Consistent*. As discussed in the Specific Plan, the Project would retain a site for the construction and operation of an on-site Recycling Facility (RF). The RF would collect and recycle trash, including organic materials that would then be converted into mulch for on-site gardens and other landscaped areas.
Require low-water landscaping in new developments. Require water efficient landscape maintenance to conserve water and reduce landscape waste.	*Consistent*. As discussed in the Specific Plan, the Project's landscape and irrigation plans shall be submitted to the County of San Diego for review and approval prior to the start of construction. Such plans are required to comply with the County's Water Conservation Landscaping Ordinance, the Water Efficient Landscape Design Manual, and other enumerated requirements. The Specific Plan also requires the utilization of drought-tolerant and native plant materials.
Achieve Zero Net Energy performance targets prior to dates required by CALGreen	*Consistent*. As discussed above, the Project's residential development will be designed to achieve the CEC's ZNE standards. This commitment is not dependent upon the CEC's adoption of corresponding mandatory, regulatory standards – instead, consistent with this mitigation option, the Project would be an early implementer of ZNE design.
Require new construction, including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program or the LEED rating system	*Consistent*. Many of the Project's design features, as discussed above and in the Specific Plan, are consistent with the types of green building strategies recommended by GreenPoint and LEED. For example, as discussed in the Project's Specific Plan: (1) the Project was designed in a manner that is equivalent or corresponding in performance or outcome with the LEED®-ND Certification program, and, (2) the Project conforms to the National Green Building Standard, which is the only rating system that is accredited by the American National Standards Institute.
Require the design of bike lanes to connect to the regional bicycle	*Consistent*. Bike travel is accommodated on West Lilac Road and Main Street with 5-foot wide bike lanes in each direction (including

Mitigation Options	Project Evaluation
network	through the Town Center) and on all of the Multi-Purpose and Multi-Use trails. These bike lanes connect to the public mobility element network providing alternatives to the automobile and will further prioritize non-automotive transportation within the Community. In addition, these bike lanes and trails are designed to increase the safety of the bicyclist as they navigate the road and trail system in this part of the County.
Expand urban forestry and green infrastructure in new land development	*Consistent*. As discussed in the Specific Plan, the Project would include allow for the installation of community gardens on HOA-owed lots and vineyards. In addition, on portions of the Project site, existing agricultural uses would remain, including avocado groves.
Require preferential parking spaces for park and ride to incentivize carpooling, vanpooling, commuter bus, electric vehicles, and rail service use	*Consistent*. As discussed above, and as a matter of regulatory compliance, the Project would comply with Section 5.106.5.2 of the 2016 CALGreen Code, which requires the provision of designated parking for shared vehicles and clean air vehicles. The Specific Plan also provides for a Private Community Ride Share facility at its western entrance. This facility is intended to provide convenient parking facilities for residents and the public, who can use this facility for trips outside the community, including the public park-and-ride facility at the intersection of SR-76 and I-15.
Require a transportation management plan for specific plans which establishes a numeric target for non-SOV travel and overall VMT	*Consistent.* As discussed above, the Project would include the implementation of a TDM program, the effectiveness of which has been evaluated by Fehr & Peers. As documented in Fehr & Peers' technical memorandum (see ***Attachment F***), the TDM program would reduce the Project's total VMT by 8.1% at build out.
Develop a rideshare program targeting commuters to major employment centers	*Consistent*. As discussed in Fehr & Peers' technical memorandum (see ***Attachment F***), the Project's TDM program would require the Project's transportation coordinator to assist with rideshare matching for employees commuting to the Project site and residents commuting from their homes. The transportation coordinator would administer these services through the TDM program's carpool matching program and guaranteed ride home

Mitigation Options	Project Evaluation
	measure.
Require the design of bus stops/shelters/express lanes in new developments to promote the usage of mass-transit	*Consistent*. As discussed in the Specific Plan and Fehr & Peers' technical memorandum (see ***Attachment F***), the Project's TDM program would require coordination with North County Transit District regarding the future sighting of transit stops/stations within the Project site. The project shall be required to coordinate with [NCTD] on the siting of a future transit stop in Phase 2 and provide transit stop improvements concurrently with the development of Phase 2 (shelter and bench).
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available	*Consistent*. The Project would provide natural gas outlets in all residential backyards and within the common areas of multi-family development areas.
Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment	*Consistent*. The Project would provide electrical outlets in all residential backyards and within the common areas of multi-family development areas.
Require the design of the electric boxes in new residential unit garages to promote electric vehicle usage	*Consistent.* The Project would provide a Level 2 single-port EV charging station for every residential unit.
Require electric vehicle charging station (Conductive/inductive) and signage for non-residential developments	*Consistent.* The Project would install 22 Level 2 dual-port charging stations (and related signage) throughout the parking areas for the Project's on-site, non-residential uses.
Provide electric outlets to promote the use of electric landscape maintenance equipment to the extent feasible on parks and public/quasi-public lands	*Consistent.* As required by Mitigation Measure M-AQ-7b, the Project's HOA shall require that all open space areas under its control be landscaped and maintained with electrical equipment, to the extent feasible.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering	*Consistent*. As discussed above, the Project's residential development would utilize rooftop solar to achieve the CEC's ZNE standards.
Require the installation of energy conserving appliances such as on-demand tank-less water heaters and whole-house fans	*Consistent.* The types of design strategies identified in the measure are identified in the Specific Plan's implementation standards and would be utilized as part of the compliance pathway for the Project's achievement of ZNE in residential

Mitigation Options	Project Evaluation
	development areas. In addition, as discussed in the Specific Plan, the Project's site plans will be conditioned to require that each single-family home is equipped with EnergyStar or equivalent high-efficiency appliances.
Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable thermostats/timers	*Consistent.* The types of design strategies (i.e., energy efficient AC units and heating systems with programmable thermostats/timers) identified in the mitigation option are identified in the Specific Plan's implementation standards and would be utilized as part of the compliance pathway for the Project's achievement of ZNE in residential development areas. All non-residential uses will have energy efficient AC units and heating systems with programmable thermostats/timers
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use	*Not Applicable*. In light of the Project's commitment to achieve net zero greenhouse gas (GHG) emissions, energy use reporting and per capita energy use targets are not necessary.
Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets	*Consistent.* As a matter of regulatory compliance, the Project would adhere to the 2016 CALGreen Code's low flow fixture requirements for residential and non-residential development.
Require the use of energy-efficient lighting for all street, parking, and area lighting	*Consistent.* As discussed in the Specific Plan, the Project would install high-efficiency public, street and area lighting to achieve a minimum 15 percent reduction in overall lighting energy. It also is noted that the Project would utilize high-efficiency (LED or equivalent) indoor and outdoor lighting in all non-residential buildings.
Require the landscaping design for parking lots to utilize tree cover	*Consistent*. As discussed above, the Specific Plan requires the Project to plant shade trees in parking lots for screening and heat relief per the requirements of the County Off-Street Parking Design Manual.
Incorporate water retention in the design of parking lots and landscaping	*Consistent.* As discussed in the Specific Plan, the Project would install stormwater detention basins, bio-retention areas, permeable pavers and other best management practices described in the Project's *Preliminary Drainage Study and the Lilac Hills Ranch*

Mitigation Options	Project Evaluation
	Storm Water Quality Management Plan which will contribute to the proposed project being hydrologically invisible.
Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions. This would be implemented via an approved protocol for carbon credits from California Air Pollution Control Officers Association (CAPCOA), the California Air Resources Board, or other similar entities determined acceptable by the local air district	*Consistent*. As provided in Mitigation Measure GHG-1, the Project would implement an off-site mitigation project requiring the installation of 13 Level 2 dual-port EV charging stations capable of servicing 26 parking spaces in publicly accessible areas. Additionally, as provided in Mitigation Measures GHG-2 and GHG-3, the Project would purchase and retire carbon offsets that reduce the Project's construction and operational emissions to zero. The carbon offsets would need to be issued by: (i) the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard, (ii) any registry approved by CARB to act as a registry under the State's cap-and-trade program, or (iii) if no registry is in existence as identified in options (i) and (ii), above, then any other reputable registry or entity that issues carbon offsets.
Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district	*Consistent*. As discussed above, Mitigation Measures GHG-2 and GHG-3 require the Project to purchase carbon offsets in a quantity that is sufficient to reduce the Project's GHG emissions to zero over a 30-year period.
Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its off-site mitigation measure for GHG emissions and that will facilitate the State's efforts in achieving the GHG emission reduction goal	*Consistent*. As discussed above, Mitigation Measures GHG-2 and GHG-3 require the Project to purchase carbon offsets in a quantity that is sufficient to reduce the Project's GHG emissions to zero over a 30-year period. It is anticipated that the Project will utilize a portfolio of carbon offsets that secure reductions in GHG emissions within the State of California, United States and beyond.

ATTACHMENT L:

Carbon Offset

Mitigation per Land Use

Attachment L: Year 2030 GHG Emissions and Carbon Offsets per Land Use (Metric Tons CO2e)

Land Use	Area MT CO_2e	Electrical MT CO_2e	Natural Gas MT CO_2e	Mobile MT CO_2e	Water MT CO_2e	Solid Waste MT CO_2e	Total MT CO_2e *	Solar MT CO_2e	Residential ZEV Use MT CO_2e	On-Site Non-Residential EV Charging MT CO_2e	Offsite EV Charging Stations MT CO_2e	Total MT CO_2e	Land Use Unit	Total Units	MT CO_2e per Unit
City Park	5.54	0.00	0.00	123.08	97.72	0.77	**227.12**					**227.12**	Acre	23.8	9.54
Condo Townhouse	3.01	335.22	270.21	3,013.76	77.46	65.06	**3,764.72**	-302.24	-218.39			**3,244.09**	Residential Unit	375	8.65
Congregate Care (Assisted Living)	1.61	138.15	95.21	668.60	41.31	68.83	**1,013.71**	-261.94				**751.77**	200 Bed Faculty	1	751.77
Elementary School	0.69	31.40	15.14	939.98	13.57	39.10	**1,039.89**	-181.01				**858.88**	School	1	858.88
Hotel	0.03	133.51	228.42	465.44	1.75	10.33	**839.48**					**839.48**	Hotel	1	839.48
Junior High School	0.16	10.26	4.95	191.14	3.16	9.09	**218.76**	-181.01				**37.75**	School	1	37.75
Office Park	0.61	69.11	49.68	412.69	15.75	10.00	**557.84**	-100.75		-285.60		**171.49**	1000 SF	28.5	6.02
Place of Worship	0.10	12.74	6.66	310.32	2.14	23.00	**354.97**	-75.22				**279.74**	Place of Worship	1	279.74
Retirement Community	3.76	497.83	390.82	2,505.35	96.67	81.20	**3,575.62**	-924.92	-272.55			**2,378.15**	Residential Unit	468	5.08
Single Family Housing	7.25	1,042.60	899.94	12,095.21	186.51	399.44	**14,630.95**	-2,211.06	-525.88		-532.95	**11,361.07**	Residential Unit	903	12.58
Strip Mall	0.55	96.54	7.40	2,544.41	14.17	24.36	**2,687.43**	-171.27		-616.30		**1,899.86**	1000 SF	61.5	30.89
Water Reclamation & Recycling Facility	0.88	113.21	31.85	18.62	103.91	191.64	**460.11**	-1.34				**458.76**	Facility	2	229.38
Community Purpose Facility	0.00	0.00	0.00	946.60	128.66	47.90	**1,123.16**	-70.52				**1,052.64**	Community Purpose Facility	1	1,052.64
Total	**24.18**	**2,480.57**	**2,000.28**	**24,235.22**	**782.78**	**970.72**	**30,493.75**	**-4,481.28**	**-1,016.81**	**-901.90**	**-532.95**	**23,560.81**			

* Total Emissions include the following Project Design Feature Reductions:
- Non-Residential High-Efficiency Lighting (PDF) -141.24
- Low-Flow Water Fixtures and Drought-Resistant Landscaping (PDF) -206.22
- Solid Waste Diversion/Recycling (PDF) -323.57
- TDM Program (PDF) -2,047.04