

**Creekside Assisted Living
Technical Appendices**

**Appendix F1
Greenhouse Gas Report**

GREENHOUSE GAS ASSESSMENT

Creekside Assisted Living City of San Marcos, CA

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LIST OF COMMON ACRONYMS

Assembly Bill 32 (AB32)

Business as Usual (BAU)

California Air Pollution Control Officers Association's (CAPCOA)

California Air Resource Board (CARB)

California Environmental Quality Act (CEQA)

Carbon Dioxide (CO₂)

Cubic Yards (CY)

Environmental Protection Agency (EPA)

Green House Gas (GHG)

International Residential Code (IRC)

Low Carbon Fuel Standard (LCFS)

Methane (CH₄)

Nitrous Oxide (N₂O)

San Diego Air Basin (SDAB)

San Diego Air Pollution Control District (SDAPCD)

Senate Bill 97 (SB97)

Vehicle Miles Traveled (VMT)

1.0 INTRODUCTION

1.1 Project Description

The project applicant is requesting approval of a General Plan Amendment (GPA), Specific Plan Amendment (SPA), Conditional Use Permit (CUP) and Variance to construct and operate a 138-room assisted living facility.

A General Plan Amendment is proposed to: 1) revise the land use map in the General Plan by changing the designation of the project site from Richmar Specific Plan to Heart of the City Specific Plan; and 2) to remove the Richmar Avenue bridge from the Mobility Element. An amendment to the Heart of the City Specific Plan to remove the Richmar Specific Plan subplan designation from the property. The underlying "Commercial" designation will remain the same. The amendment includes an update to the land use tables to allow for an assisted living facility under the Commercial of the Heart of the City Specific Plan designation with approval of a CUP. A CUP for the design review and to allow the operation of an assisted living facility. Finally, a variance is required to allow for a reduction of the building and parking setback from the prime arteria right-of-way along Twin Oaks Valley Road and 20 feet along Mission Road.

The Project proposes to develop an 121,556 Square-foot (SF) 138-unit residential senior-care facility which would have 138 units (174-beds). The proposed Project would be constructed on an undeveloped lot within the City of San Marcos. All phases (i.e. grading, paving and construction) of the proposed Project are anticipated to start in 2021 and be fully operational in 2022. The Project development plan is shown on Figure 1-A of this report.

1.2 Project Location

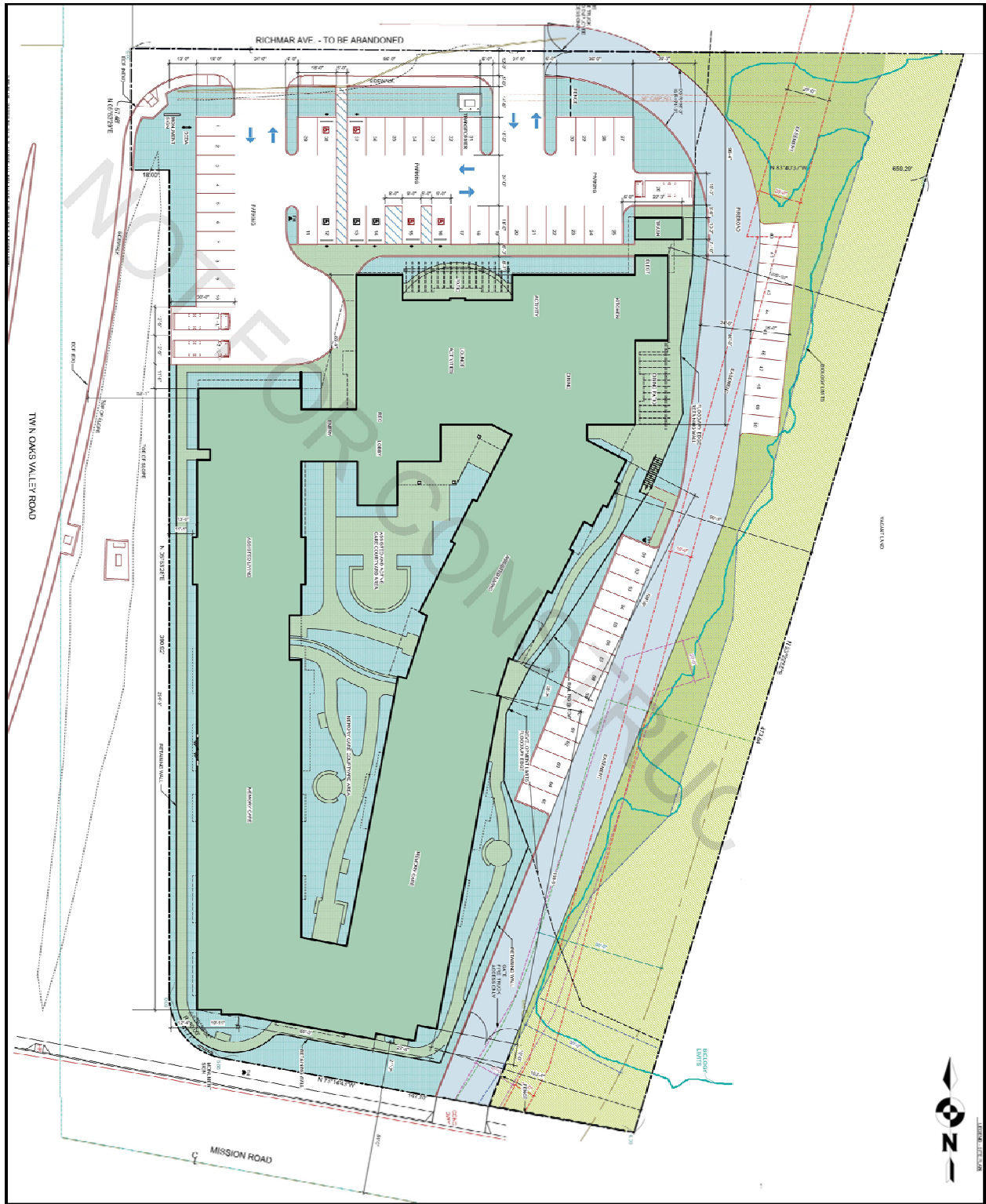
The 3.78 acre project site is located north of Mission Road and east of North Twin Oaks Valley Road. The Project site is surrounded by mostly commercial developments and open space to the east. A project vicinity map and location map are shown in Figure 1-B.

1.3 Purpose of this Study

The purpose of this Green House Gas (GHG) Assessment is to analyze the Project's GHG emissions and evaluate its conformance to the State of California's recently adopted targets for GHG emissions reductions by 2030. Should impacts be determined, the intent of this study would be to recommend suitable design measures to bring the Project to a level considered less than significant per the California Environmental Quality Act and its implementing Guidelines (CEQA).

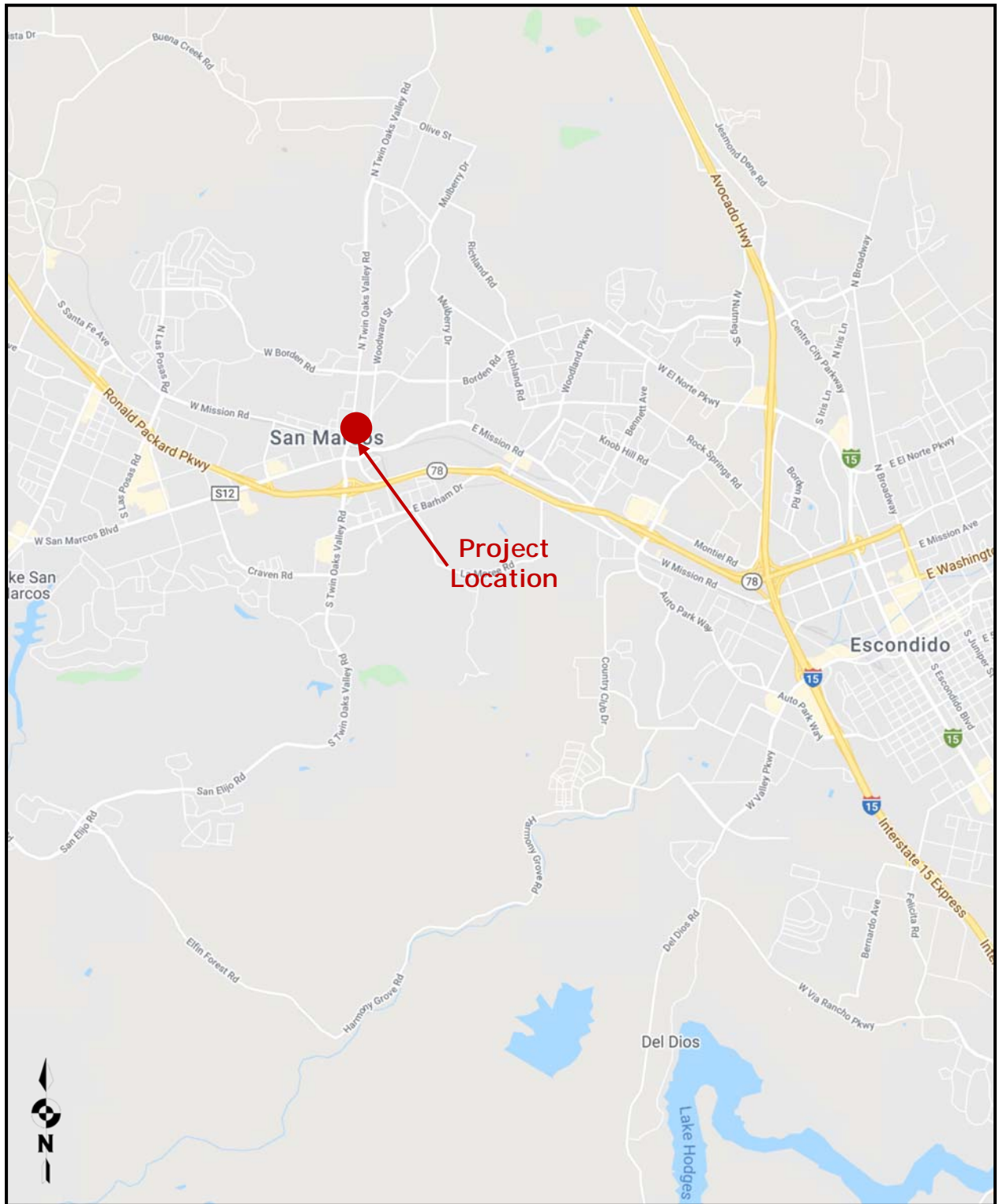
The California Global Warming Solutions Act of 2006 – Assembly Bill 32 (AB 32), required that by 2020 the state's greenhouse gas emissions be reduced to 1990 levels and Senate Bill (SB) 97 a "companion" bill directed amendments to CEQA to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. The State recently adopted SB 32, which 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.

Figure 1-A: Proposed Project Site Development Plan



Source (Whitfield Associates, Inc., 2020):

Figure 1-B: Project Vicinity Map



Source: (Google, 2020)

2.0 BACKGROUND AND 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 the 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.

The GHGs typically analyzed in a greenhouse gas study are Carbon Dioxide (CO₂), Methane (CH₄), and Nitrous Oxide (N₂O) because they are emitted in the greatest quantities from human activities. A brief description of each GHG follows:

Carbon Dioxide. CO₂ 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 CO₂ 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 CO₂ are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane. CH₄ is produced through both natural and human activities. CH₄ is a flammable gas and is the main component of natural gas. CH₄ 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. N₂O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N₂O. Sources of N₂O 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 N₂O as a propellant (such as in rockets, racecars, and aerosol sprays).

To simplify greenhouse gas calculations, both CH₄ and N₂O are converted to an equivalent amount of carbon dioxide, or CO₂e. CO₂e is calculated by multiplying the calculated levels of CH₄ and N₂O by a Global Warming Potential (GWP). GWPs for both CH₄ and N₂ are presented within the 2007 Intergovernmental Panel on Climate Change (IPCC) report as being 25 and 298, respectively (IPCC, 2007).

2.2 Climate and Meteorology

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

Meteorological trends within the City of San Marcos produce daytime highs typically ranging between 69°F in the winter to approximately 85°F in the summer with August usually being the hottest month. Median temperatures range from approximately 55°F in the winter to approximately 74°F in the summer. The average humidity is approximately 64% in the winter and about 74% in the summer (City-Data, 2018). The existing site aerial map is shown in Figure 2-A on the following page.

Figure 2-A: Existing Site Layout



Source: (Google Earth Pro, 2020)

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 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 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) CO₂E). 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 (2008 Scoping Plan)* in accordance with Health and Safety Code Section 38561. The *2008 Scoping Plan* established an overall framework for the measures to 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 Team¹ 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:

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 *2008 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

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

achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework (First Update)*. The stated purpose of the *First Update* was to “highlight California’s success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.” The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, 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 CO₂e) 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 2030,² inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health. When discussing project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no 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 CO₂e. 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

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

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

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 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, to comply with Title 24 standards that will be in effect at the time of issuance of its building permits. It will be required to be consistent with 2016 Title 24, which is currently in effect, or updated 2019 Title 24 which is expected to be in effect in January 2020.

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 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.

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; dishwashers; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO₂ 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 CO₂E 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.

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.

SB 350

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

Renewable Energy Procurement

SB 1078

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

SB X1 2

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

SB 350

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

SB 100

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

Water

EO B-29-15

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

increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

AB 939 (1989), 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 (CO₂ and CH₄) 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.

3.2 GHG Thresholds of Significance

The City of San Marcos adopted a Climate Action Plan (CAP) in 2013 that identifies strategies to reduce greenhouse gas emissions (GHG) from City government operations and community activities to support the State's efforts to mitigate San Marcos' contribution to climate change. As stated in Appendix E of the City's adopted CAP, "Pursuant to CEQA Guidelines Sections 15064(h)(3) and 15130(d), if a project is consistent and complies with the requirements of

an adopted plan, such as a CAP, that includes the attributes specified in CEQA Guidelines Section 15183.5(h), the lead agency may determine that the Project's GHG impacts are less than significant with no further analysis required." Section E.1 of the Appendix E of the CAP sets forth a CAP consistency worksheet that may be used to demonstrate project compliance with the CAP.

The City, as spelled out in the CAP, is committed to reducing its GHG emissions by 15 percent below 2005 levels by 2020, consistent with AB 32, and 28 percent below 2005 levels by 2030, working towards the long-term goal of Executive Order S-3-05. To meet these targets, San Marcos will need to reduce its GHG emissions 14 percent below the adjusted forecast by 2020 and 33 percent below the adjusted forecast by 2030 through implementation of local measures and actions (City of San Marcos, 2013).

It should be noted that the City's CAP was prepared in 2013 and does not address the enactment of SB 32. In addition, data used within the City's 2013 CAP did not include State regulatory measures or reduction strategies contained within the latest update to the California's 2017 Climate Change Scoping Plan, prepared to enable the state to meet SB 32 requirements (CARB, 2017). Therefore, the CAP does not meet the requirements under CEQA for projects that are proposed to be operational after the year 2020 and the CAP's Consistency Checklist or 2030 project-level GHG efficiency threshold should not be used for a CEQA analysis. Since the proposed Project horizon year is post 2020, a threshold should be calculated based on the 2030 SB 32 GHG reduction target. The City is currently in the process to update its CAP to be consistent with SB 32.

With the release of the 2017 Climate Change Scoping Plan Update, CARB recognized the need to balance population growth with emissions reductions and in doing so, provided a new local plan level methodology for target setting that provides consistency with state GHG reduction goals using per capita efficiency targets. These statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32. The targets are generated by dividing the statewide 2030 GHG emissions targets by the statewide service population for that year. However, not all statewide emission sources are present in the City. Accordingly, the 2030 statewide target should be modified to exclude all sources not applicable to the San Marcos planning area. Thusly, a locally-appropriate evidence-based project-specific thresholds can be developed based on statewide emissions derived from the local emissions sectors and statewide service population projections.

The California's 2017 Climate Change Scoping Plan identifies that the State's 2015 GHG emissions are approximately 440 million metric tons CO₂e (MMTCO₂e) and would need to be reduced to 260 MMTCO₂e to achieve the goals of SB 32 by 2030 as shown in Table 3.1 below.

Population within the State is expected to be 43,939,250 people in 2030 (California Department of Finance, 2016) and the California employment numbers are expected to be 23,459,500 persons in 2030 per the California's 2017 Climate Change Scoping Plan (CARB, 2017). Based on this, a 2030 service population (population plus employment) of 67,398,750 would exist within the State.

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

California's 2017 Climate Change Scoping Plan Sectors	California's 2017 Climate Change Scoping Plan Range (MMTCO ₂ e)	Assumed 2030 Emissions (MMTCO ₂ e)
Agriculture	24-25	24
Commercial & Residential	38-40	38
Electrical Power	30-53	53**
High GWP	8-11	11**
Industrial	83-90	83
Recycling & Waste	8-9	8
Transportation	103-111	103
Cap and Trade Reductions	34-79	-60
Total GHG Emissions*		260 MMT CO₂e
Service Population (SP)		67,398,750
<p>*The low end of the range was utilized to be conservative with the exception of the electric power sector, the high end range is represented by the California's 2017 Climate Change Scoping Plan, due to additional electricity sector measures such as deployment of additional renewable power, greater behind-the-meter solar PV, and additional energy efficiency.</p> <p>**The High end was utilized to be consistent with the California's 2017 Climate Change Scoping Plan</p>		

Because not all statewide emission sources are present within the City of San Marcos, this report excludes Industry Sector as defined in the California's 2017 Climate Change Scoping Plan since it includes refineries, oil and gas facilities, cement and glass manufacturing, and industrial facilities that employ boilers or general combustion engines and the agriculture sector which includes emissions from livestock, i.e., digestive processes and manure management; combustion of liquid and gaseous fuels used for irrigation and crop production; emissions from fertilizer use and application of other soil additives; and emissions from agricultural residue burning.

Based on this, the 2030 statewide target should be modified to exclude all sector sources not applicable to the City. Given this, a locally-appropriate evidence-based project-specific

threshold can be developed based on statewide emissions derived from the local emissions sectors and statewide service population projections as can be seen in Table 3.2³.

Table 3.2: Project Specific Emissions Targets

California's 2017 Climate Change Scoping Plan Sectors	California's 2017 Climate Change Scoping Plan Range (MMTCO _{2e})	Assumed 2030 Emissions (MMTCO _{2e})
Commercial & Residential	38-40	38
Electrical Power	30-53	53
High GWP	8-11	11
Recycling & Waste	8-9	8
Transportation	103-111	103
Total GHG Emissions		213 MMT CO_{2e}
Service Population (SP)		67,398,750
GHG Emissions/ SP		3.2 MT CO_{2e}/SP

The 138 unit assisted living facility would consist of 174 beds within a 121,556 square foot three story building would have a service population of 290 persons consisting of 174 residents and 1 employee per 1,050 square feet which would equate to 116 employees (121,556/1,050) (SANDAG, 2018). To be considered less than significant impacts, the Project's GHG emissions would have to be less than 3.2 MT CO_{2e}/SP.

³ As recommended by the 2017 Scoping Plan an accepted methodology that is utilized in this report is locally appropriate project-specific thresholds based on statewide emissions derived from the local emissions sectors and statewide service population projections.

4.0 METHODOLOGY

4.1 Construction CO₂e Emissions Calculation Methodology

GHGs related to construction and daily operations were calculated using the latest CalEEMod 2016.3.2 GHG model. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the Project. The CalEEMod input/output model is shown in **Attachments A** to this report. The Project is expected to start sometime in 2021 and be completed in 2022. The estimated dates of construction and equipment are shown in Table 3.1 below. As a design feature, the Project's construction contractor will utilize Tier 4 rated diesel construction equipment with diesel particulate filters (DPF) to minimize diesel particulates matter from construction equipment. Table 4.1 below describes the construction equipment and durations. The construction analysis also includes truck trips or the import of earthwork materials for project grading.

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Completion	Quantity	Workdays
Site Preparation	08/01/2021	08/06/2021		5
Graders			2	
Rubber Tired Dozers			2	
Grading	08/07/2021	09/03/2021		20
Excavators			1	
Graders			1	
Rubber Tired Dozers			1	
Tractors/Loaders/Backhoes			3	
Paving	09/04/2021	09/29/2021		18
Pavers			1	
Paving Equipment			2	
Rollers			2	
Building Construction	09/30/2021	08/17/2022		230
Cranes			1	
Forklifts			3	
Generator Sets			1	
Tractors/Loaders/Backhoes			3	
Welders			1	
Architectural Coating	5/25/2022	8/17/2022		61
Air Compressors			1	
This equipment list is based upon equipment inventory within CALEEMOD 2016.3.2.				

4.2 Operational Emissions Calculation Methodology

Once construction is complete, the proposed Project would generate GHG emissions from daily operations which would include sources such as Area (or onsite emissions like

landscaping or hearth usage), Energy usage from Electricity and Natural Gas, Mobile sources from vehicular traffic, municipal waste and from water uses, which are calculated within CalEEMod.

It should be noted that electrical energy-intensity factors were updated to reflect San Diego Gas and Electric's (SDG&E) emissions rate variations from 2009 which are default in CalEEMod. In 2009, SDG&E achieved 10.5 percent procurement of renewable energy (California Public Utilities Commission, 2016) and in 2020 will have at least a 33% portfolio by law. As of 2017, SDG&E has achieved an RPS of 43% (SDG&E, 2020) which exceeds the 2020 requirements. The latest reported RPS of 43% achieved to date is used within CalEEMod.

Table 4.2: SDG&E Energy Intensity Factors

GHG	2009 Factors (lbs/MWh) w/10.5% RPS	Current RPS Factors – 43% Achieved (lbs/MWh)
Carbon Dioxide (CO ₂)	720.49	458.86
Methane (CH ₄)	0.029	0.0185
Nitrous Oxide (N ₂ O)	0.006	0.0038

Solid municipal waste generated in the form of trash is also considered within this analysis as the decomposition of organic material breaks down to form GHGs. GHGs from water are also indirectly generated through the conveyance of the resource via pumping throughout the state and as necessary for wastewater treatment.

Finally, the Project would also generate GHG through the use of carbon fuel burning vehicles for transportation. The Project traffic trips were estimated within the CalEEMod software and were assumed to have an average trip distance of 7.48 miles per the equivalent average trip distance within the County of San Diego which is based on a fleetwide average within EMFAC 2014 for the 2022 annual scenario. Based on this, the total daily VMT within the county would be 100,299,748 miles or over 13,415,578 trips and is shown in in **Attachment A** to this report. It should be noted that corrections to account for the existing use were not considered within this analysis.

The Project specific localized efficiency threshold is 3.2 MT/Service Population. As stated above, the 138-unit project development would have a service population of 290. The operational modeling results for the proposed development can be seen in **Attachments B** to this report.

5.0 FINDINGS

5.1 Project Related Construction Emissions

Utilizing the CALEEMOD 2016.3.2 construction inputs as shown in Table 4.1, we find that construction of the Project will produce approximately 551.27 MT of CO₂e over the construction life of the Project. Given the fact that the total emissions will ultimately contribute to cumulative levels, it is acceptable to average the total construction emissions over a 30-year period which would yield an average of roughly 18.38 MT each year and add them to the operational emissions. A summary of the construction emissions is shown in Table 5.1.

Table 5.1: Expected Annual Construction CO₂e Emissions Summary

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT)
2021	0.00	247.15	247.15	0.04	0.00	248.23
2022	0.00	301.77	301.77	0.05	0.00	303.03
Total Construction Emissions						551.27
Yearly Average Construction Emissions (Metric Tons/year over 30 years)						18.38
Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment/durations in Table 4.1.						

5.2 Proposed Project Operational and Vehicular Emissions

The proposed 138-unit Project, inclusive of construction emission will generate 636.87 MT of CO₂e as shown in Table 5.2 below. The SP for the 138 unit is 290 as calculated in Section 3.2 of this report. Based on the total emissions the Project will generate 2.20 MT CO₂e/SP, which is less than the localized 3.2 MT/SP threshold. Given this, the Project would generate less than significant GHG impacts.

Table 5.2: Proposed Project Operational Emissions Summary (MT/Year)

Source	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e (MT/Yr)
Area	0.00	1.67	1.67	0.00	0.00	1.72
Energy	0.00	171.63	171.63	0.01	0.00	172.38
Mobile	0.00	330.78	330.78	0.02	0.00	331.22
Waste	25.56	0.00	25.56	1.51	0.00	63.33
Water	2.85	37.48	40.33	0.29	0.01	49.85
Total Proposed Project Operational Emissions						618.49
Amortized Construction Emissions (Table 5.1 above)						18.38
Total Operational Emissions						636.87
Metric CO2e tons per service population (636.58/290)						2.20
Data is presented in decimal format and may have rounding errors.						

Additionally, the Project will incorporate the following design features. No GHG emissions reductions were taken into account for these design features. Although, with the incorporation of these additional features, the anticipated GHG emissions would be lower than stated above.

- Installation of 75 percent light emitting diode (LED) lighting for both interior and exterior lighting.
- Installation of smart meters and programmable thermostats.
- Installation Low Flow water fixtures in all the units per Title 24.
- Installation of ENERGY STAR qualified appliances.
- Installation of low-maintenance and drought tolerant landscaping.
- Use of state-of-the-art irrigation system to reduce water consumption.
- Compliance with the City's Water Efficient Landscape Ordinance (WELO).
- Installation of shade trees.
- No wood burning fireplaces within any of the units.

5.3 SB 97 CEQA Compliance

SB 97 directed amendments to the California Environmental Quality Act (CEQA) statute to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis. Under SB 97 the Project should be able to answer the follow questions for CEQA compliance.

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

The City is committed to reducing its GHG emissions consistent with SB 32 and the California's 2017 Climate Change Scoping Plan or 40% below 1990 levels by 2030.

To accomplish this, localized project level 2030 SB 32 efficiency thresholds were derived using the California's 2017 Climate Change Scoping Plan approach. Based on this approach, an SB 32 consistent efficiency threshold was found to be 3.2 MT CO₂e per service population for the Project located within the City of San Marcos and was used as a means to identify the Project's GHG impact significance under CEQA.

The proposed Project will emit GHGs directly through the burning of carbon-based fuels such as gasoline and natural gas as well as indirectly through usage of electricity, water, and from wastewater treatment as well as the anaerobic bacterial breakdown of organic solid waste. The proposed Project would generate 636.87 of CO₂e based on CalEEMod GHG modeling which includes RPS Utility reductions to meet at least the latest published levels. Based on the localized project SB 32 efficiency approach, the project would be required to produce less than 3.2 Metric Tons CO₂e per Service Population. Since the Project would only produce 2.20 MT CO₂e /SP, which is below the 2030 SB 32 efficiency significance threshold proposed by this report based on the 2017 Scoping Plan, the Project would not generate greenhouse gas emissions that may have a significant impact on the environment.

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

The localized project level efficiency threshold was determined to be 3.2 MT CO₂e / SP in 2030 which is consistent with the California's 2017 Climate Change Scoping Plan. The Project would generate only 2.20 MT CO₂e which is less than the localized SB 32 threshold. Given this, the Project complies with the requirements of all adopted plans.

6.0 REFERENCES

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ATTACHMENT A

EMFAC 2017 – VMT per Trip (2022)

EMFAC2017 (v1.0.2) Emissions Inventory

Region Type: County

Region: SAN DIEGO

Calendar Year: 2022

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips
SAN DIEGO	2022	HHDT	Aggregated	Aggregated	GAS	18.77674363	2078.264597	375.6850865
SAN DIEGO	2022	HHDT	Aggregated	Aggregated	DSL	15794.34681	1903709.613	164553.9614
SAN DIEGO	2022	HHDT	Aggregated	Aggregated	NG	919.7504491	37432.2784	3587.026751
SAN DIEGO	2022	LDA	Aggregated	Aggregated	GAS	1435699.418	55007780.65	6783861.728
SAN DIEGO	2022	LDA	Aggregated	Aggregated	DSL	17133.82279	652152.3233	80255.84288
SAN DIEGO	2022	LDA	Aggregated	Aggregated	ELEC	29615.71622	1220433.518	147126.8242
SAN DIEGO	2022	LDT1	Aggregated	Aggregated	GAS	169175.431	5914590.816	769447.3084
SAN DIEGO	2022	LDT1	Aggregated	Aggregated	DSL	113.2397115	2054.345981	373.3953636
SAN DIEGO	2022	LDT1	Aggregated	Aggregated	ELEC	971.2611106	42156.15901	4899.002475
SAN DIEGO	2022	LDT2	Aggregated	Aggregated	GAS	488321.8489	17717580.65	2269428.213
SAN DIEGO	2022	LDT2	Aggregated	Aggregated	DSL	3092.947351	128253.9843	15116.12168
SAN DIEGO	2022	LDT2	Aggregated	Aggregated	ELEC	4120.808458	138746.596	20868.27325
SAN DIEGO	2022	LHDT1	Aggregated	Aggregated	GAS	35010.024	1262246.991	521597.1927
SAN DIEGO	2022	LHDT1	Aggregated	Aggregated	DSL	31841.31105	1204730.715	400523.6367
SAN DIEGO	2022	LHDT2	Aggregated	Aggregated	GAS	5418.126472	196430.7729	80722.01142
SAN DIEGO	2022	LHDT2	Aggregated	Aggregated	DSL	11200.50375	432523.1484	140888.2469
SAN DIEGO	2022	MCY	Aggregated	Aggregated	GAS	79518.52429	640833.4249	159037.0486
SAN DIEGO	2022	MDV	Aggregated	Aggregated	GAS	321247.3365	11505919.06	1477989.237
SAN DIEGO	2022	MDV	Aggregated	Aggregated	DSL	7551.73175	316244.8871	36627.42275
SAN DIEGO	2022	MDV	Aggregated	Aggregated	ELEC	2146.208886	74612.01209	10981.04226
SAN DIEGO	2022	MH	Aggregated	Aggregated	GAS	10724.34317	92397.506	1072.863291
SAN DIEGO	2022	MH	Aggregated	Aggregated	DSL	3838.325727	34608.84284	383.8325727
SAN DIEGO	2022	MHDT	Aggregated	Aggregated	GAS	3610.281121	207021.6124	72234.50467
SAN DIEGO	2022	MHDT	Aggregated	Aggregated	DSL	19669.05689	1194911.604	186583.7136
SAN DIEGO	2022	OBUS	Aggregated	Aggregated	GAS	1252.458708	63800.57212	25059.19382
SAN DIEGO	2022	OBUS	Aggregated	Aggregated	DSL	726.8076341	54661.74976	7248.336044
SAN DIEGO	2022	SBUS	Aggregated	Aggregated	GAS	265.865016	13954.70263	1063.460064
SAN DIEGO	2022	SBUS	Aggregated	Aggregated	DSL	2407.453653	75270.84262	27781.68138
SAN DIEGO	2022	UBUS	Aggregated	Aggregated	GAS	399.9064004	42016.61226	1599.625602
SAN DIEGO	2022	UBUS	Aggregated	Aggregated	DSL	0	0	0
SAN DIEGO	2022	UBUS	Aggregated	Aggregated	NG	1072.9883	120594.4401	4291.953199
Total							100299748.7	13415578.38
VMT/Trip							7.48	

ATTACHMENT B

CalEEMod Emission Model

Creekside Assisted Living - San Diego County, Annual

Creekside Assisted Living
San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	65.00	Space	0.59	26,000.00	0
Congregate Care (Assisted Living)	138.00	Dwelling Unit	3.19	138,000.00	395

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	458.86	CH4 Intensity (lb/MW hr)	0.019	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Creekside Assisted Living - San Diego County, Annual

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	8.00	20.00
tblConstructionPhase	NumDays	18.00	61.00
tblFireplaces	NumberGas	75.90	0.00
tblFireplaces	NumberNoFireplace	13.80	138.00
tblFireplaces	NumberWood	48.30	0.00
tblGrading	MaterialImported	0.00	16,000.00
tblGrading	MaterialImported	0.00	4,000.00
tblLandUse	LotAcreage	8.63	3.19
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.019
tblProjectCharacteristics	CO2IntensityFactor	720.49	458.86
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblVehicleTrips	HO_TL	7.50	7.48
tblVehicleTrips	HS_TL	7.30	7.48
tblVehicleTrips	HW_TL	10.80	7.48
tblVehicleTrips	ST_TR	2.20	2.50
tblVehicleTrips	SU_TR	2.44	2.50
tblVehicleTrips	WD_TR	2.74	2.50
tblWoodstoves	NumberCatalytic	6.90	0.00
tblWoodstoves	NumberNoncatalytic	6.90	0.00

2.0 Emissions Summary

Creekside Assisted Living - San Diego County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2021	10-31-2021	0.9843	0.3520
2	11-1-2021	1-31-2022	0.6999	0.1711
3	2-1-2022	4-30-2022	0.6306	0.1614
4	5-1-2022	7-31-2022	1.3827	0.8624
5	8-1-2022	9-30-2022	0.3033	0.2048
		Highest	1.3827	0.8624

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	0.6584	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154
Energy	5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	171.6331	171.6331	5.8900e-003	2.0200e-003	172.3830
Mobile	0.0919	0.4008	1.0474	3.5800e-003	0.3143	3.0200e-003	0.3173	0.0842	2.8200e-003	0.0870	0.0000	330.7763	330.7763	0.0176	0.0000	331.2161
Waste						0.0000	0.0000		0.0000	0.0000	25.5606	0.0000	25.5606	1.5106	0.0000	63.3254
Water						0.0000	0.0000		0.0000	0.0000	2.8525	37.4750	40.3275	0.2945	7.2400e-003	49.8497
Total	0.7558	0.4599	2.0939	3.9300e-003	0.3143	0.0125	0.3268	0.0842	0.0123	0.0965	28.4131	541.5594	569.9725	1.8302	9.2600e-003	618.4895

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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	0.6584	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154
Energy	5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	171.6331	171.6331	5.8900e-003	2.0200e-003	172.3830
Mobile	0.0919	0.4008	1.0474	3.5800e-003	0.3143	3.0200e-003	0.3173	0.0842	2.8200e-003	0.0870	0.0000	330.7763	330.7763	0.0176	0.0000	331.2161
Waste						0.0000	0.0000		0.0000	0.0000	25.5606	0.0000	25.5606	1.5106	0.0000	63.3254
Water						0.0000	0.0000		0.0000	0.0000	2.8525	37.4750	40.3275	0.2945	7.2400e-003	49.8497
Total	0.7558	0.4599	2.0939	3.9300e-003	0.3143	0.0125	0.3268	0.0842	0.0123	0.0965	28.4131	541.5594	569.9725	1.8302	9.2600e-003	618.4895

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

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2021	8/6/2021	5	5	
2	Grading	Grading	8/7/2021	9/3/2021	5	20	
3	Paving	Paving	9/4/2021	9/29/2021	5	18	
4	Building Construction	Building Construction	9/30/2021	8/17/2022	5	230	
5	Architectural Coating	Architectural Coating	5/25/2022	8/17/2022	5	61	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0.59

Residential Indoor: 279,450; Residential Outdoor: 93,150; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,560 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	396.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,582.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	110.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1012	0.0529	1.0000e-004		5.1100e-003	5.1100e-003		4.7000e-003	4.7000e-003	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	9.7200e-003	0.1012	0.0529	1.0000e-004	0.0452	5.1100e-003	0.0503	0.0248	4.7000e-003	0.0295	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265

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3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0517	0.0128	1.5000e-004	3.3900e-003	1.6000e-004	3.5400e-003	9.3000e-004	1.5000e-004	1.0800e-003	0.0000	15.0801	15.0801	1.3600e-003	0.0000	15.1141
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	1.6000e-004	1.1000e-004	1.1200e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3152	0.3152	1.0000e-005	0.0000	0.3155
Total	1.6500e-003	0.0518	0.0139	1.5000e-004	3.7500e-003	1.6000e-004	3.9000e-003	1.0300e-003	1.5000e-004	1.1800e-003	0.0000	15.3953	15.3953	1.3700e-003	0.0000	15.4296

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1600e-003	5.0400e-003	0.0522	1.0000e-004		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265
Total	1.1600e-003	5.0400e-003	0.0522	1.0000e-004	0.0452	2.0000e-005	0.0452	0.0248	2.0000e-005	0.0249	0.0000	8.3589	8.3589	2.7000e-003	0.0000	8.4265

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3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4900e-003	0.0517	0.0128	1.5000e-004	3.3900e-003	1.6000e-004	3.5400e-003	9.3000e-004	1.5000e-004	1.0800e-003	0.0000	15.0801	15.0801	1.3600e-003	0.0000	15.1141
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	1.6000e-004	1.1000e-004	1.1200e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3152	0.3152	1.0000e-005	0.0000	0.3155
Total	1.6500e-003	0.0518	0.0139	1.5000e-004	3.7500e-003	1.6000e-004	3.9000e-003	1.0300e-003	1.5000e-004	1.1800e-003	0.0000	15.3953	15.3953	1.3700e-003	0.0000	15.4296

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0229	0.2474	0.1586	3.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644
Total	0.0229	0.2474	0.1586	3.0000e-004	0.0655	0.0116	0.0771	0.0337	0.0107	0.0443	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2644

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3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.9400e-003	0.2066	0.0510	6.1000e-004	0.0135	6.2000e-004	0.0142	3.7200e-003	6.0000e-004	4.3100e-003	0.0000	60.2442	60.2442	5.4400e-003	0.0000	60.3802
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	3.7000e-004	3.7500e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0508	1.0508	3.0000e-005	0.0000	1.0515
Total	6.4600e-003	0.2070	0.0547	6.2000e-004	0.0147	6.3000e-004	0.0154	4.0400e-003	6.1000e-004	4.6400e-003	0.0000	61.2950	61.2950	5.4700e-003	0.0000	61.4317

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					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6300e-003	0.0157	0.1775	3.0000e-004		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643
Total	3.6300e-003	0.0157	0.1775	3.0000e-004	0.0655	7.0000e-005	0.0656	0.0337	7.0000e-005	0.0337	0.0000	26.0537	26.0537	8.4300e-003	0.0000	26.2643

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3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.9400e-003	0.2066	0.0510	6.1000e-004	0.0135	6.2000e-004	0.0142	3.7200e-003	6.0000e-004	4.3100e-003	0.0000	60.2442	60.2442	5.4400e-003	0.0000	60.3802
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	3.7000e-004	3.7500e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0508	1.0508	3.0000e-005	0.0000	1.0515
Total	6.4600e-003	0.2070	0.0547	6.2000e-004	0.0147	6.3000e-004	0.0154	4.0400e-003	6.1000e-004	4.6400e-003	0.0000	61.2950	61.2950	5.4700e-003	0.0000	61.4317

3.4 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	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	7.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0106	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493

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3.4 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.5000e-004	4.5000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2609	1.2609	4.0000e-005	0.0000	1.2618
Total	6.3000e-004	4.5000e-004	4.5000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2609	1.2609	4.0000e-005	0.0000	1.2618

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	1.9700e-003	8.5600e-003	0.1218	1.7000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	7.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.7400e-003	8.5600e-003	0.1218	1.7000e-004		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493

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3.4 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.5000e-004	4.5000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2609	1.2609	4.0000e-005	0.0000	1.2618
Total	6.3000e-004	4.5000e-004	4.5000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2609	1.2609	4.0000e-005	0.0000	1.2618

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0637	0.5840	0.5553	9.0000e-004		0.0321	0.0321		0.0302	0.0302	0.0000	77.5985	77.5985	0.0187	0.0000	78.0665
Total	0.0637	0.5840	0.5553	9.0000e-004		0.0321	0.0321		0.0302	0.0302	0.0000	77.5985	77.5985	0.0187	0.0000	78.0665

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3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9700e-003	0.0654	0.0174	1.7000e-004	4.2200e-003	1.4000e-004	4.3600e-003	1.2200e-003	1.3000e-004	1.3500e-003	0.0000	16.6407	16.6407	1.2400e-003	0.0000	16.6715
Worker	0.0128	9.1400e-003	0.0921	2.9000e-004	0.0296	2.1000e-004	0.0298	7.8500e-003	1.9000e-004	8.0500e-003	0.0000	25.8143	25.8143	7.4000e-004	0.0000	25.8328
Total	0.0148	0.0746	0.1095	4.6000e-004	0.0338	3.5000e-004	0.0341	9.0700e-003	3.2000e-004	9.4000e-003	0.0000	42.4549	42.4549	1.9800e-003	0.0000	42.5043

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	0.0110	0.0749	0.5849	9.0000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	77.5984	77.5984	0.0187	0.0000	78.0664
Total	0.0110	0.0749	0.5849	9.0000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	77.5984	77.5984	0.0187	0.0000	78.0664

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3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9700e-003	0.0654	0.0174	1.7000e-004	4.2200e-003	1.4000e-004	4.3600e-003	1.2200e-003	1.3000e-004	1.3500e-003	0.0000	16.6407	16.6407	1.2400e-003	0.0000	16.6715
Worker	0.0128	9.1400e-003	0.0921	2.9000e-004	0.0296	2.1000e-004	0.0298	7.8500e-003	1.9000e-004	8.0500e-003	0.0000	25.8143	25.8143	7.4000e-004	0.0000	25.8328
Total	0.0148	0.0746	0.1095	4.6000e-004	0.0338	3.5000e-004	0.0341	9.0700e-003	3.2000e-004	9.4000e-003	0.0000	42.4549	42.4549	1.9800e-003	0.0000	42.5043

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1391	1.2727	1.3336	2.2000e-003		0.0659	0.0659		0.0620	0.0620	0.0000	188.8561	188.8561	0.0452	0.0000	189.9872
Total	0.1391	1.2727	1.3336	2.2000e-003		0.0659	0.0659		0.0620	0.0620	0.0000	188.8561	188.8561	0.0452	0.0000	189.9872

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3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4500e-003	0.1503	0.0402	4.1000e-004	0.0103	2.9000e-004	0.0106	2.9700e-003	2.8000e-004	3.2400e-003	0.0000	40.1006	40.1006	2.9100e-003	0.0000	40.1734
Worker	0.0295	0.0203	0.2079	6.7000e-004	0.0719	5.0000e-004	0.0724	0.0191	4.6000e-004	0.0196	0.0000	60.4997	60.4997	1.6500e-003	0.0000	60.5409
Total	0.0339	0.1706	0.2481	1.0800e-003	0.0822	7.9000e-004	0.0830	0.0221	7.4000e-004	0.0228	0.0000	100.6003	100.6003	4.5600e-003	0.0000	100.7143

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	0.0267	0.1821	1.4230	2.2000e-003		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	188.8559	188.8559	0.0452	0.0000	189.9870
Total	0.0267	0.1821	1.4230	2.2000e-003		5.0000e-004	5.0000e-004		5.0000e-004	5.0000e-004	0.0000	188.8559	188.8559	0.0452	0.0000	189.9870

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3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4500e-003	0.1503	0.0402	4.1000e-004	0.0103	2.9000e-004	0.0106	2.9700e-003	2.8000e-004	3.2400e-003	0.0000	40.1006	40.1006	2.9100e-003	0.0000	40.1734
Worker	0.0295	0.0203	0.2079	6.7000e-004	0.0719	5.0000e-004	0.0724	0.0191	4.6000e-004	0.0196	0.0000	60.4997	60.4997	1.6500e-003	0.0000	60.5409
Total	0.0339	0.1706	0.2481	1.0800e-003	0.0822	7.9000e-004	0.0830	0.0221	7.4000e-004	0.0228	0.0000	100.6003	100.6003	4.5600e-003	0.0000	100.7143

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2400e-003	0.0430	0.0553	9.0000e-005		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003	0.0000	7.7874	7.7874	5.1000e-004	0.0000	7.8001
Total	0.8734	0.0430	0.0553	9.0000e-005		2.4900e-003	2.4900e-003		2.4900e-003	2.4900e-003	0.0000	7.7874	7.7874	5.1000e-004	0.0000	7.8001

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3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	1.5200e-003	0.0156	5.0000e-005	5.3800e-003	4.0000e-005	5.4200e-003	1.4300e-003	3.0000e-005	1.4600e-003	0.0000	4.5282	4.5282	1.2000e-004	0.0000	4.5313
Total	2.2100e-003	1.5200e-003	0.0156	5.0000e-005	5.3800e-003	4.0000e-005	5.4200e-003	1.4300e-003	3.0000e-005	1.4600e-003	0.0000	4.5282	4.5282	1.2000e-004	0.0000	4.5313

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	0.8671					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1000e-004	3.9300e-003	0.0559	9.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	7.7874	7.7874	5.1000e-004	0.0000	7.8001
Total	0.8680	3.9300e-003	0.0559	9.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	7.7874	7.7874	5.1000e-004	0.0000	7.8001

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3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	1.5200e-003	0.0156	5.0000e-005	5.3800e-003	4.0000e-005	5.4200e-003	1.4300e-003	3.0000e-005	1.4600e-003	0.0000	4.5282	4.5282	1.2000e-004	0.0000	4.5313
Total	2.2100e-003	1.5200e-003	0.0156	5.0000e-005	5.3800e-003	4.0000e-005	5.4200e-003	1.4300e-003	3.0000e-005	1.4600e-003	0.0000	4.5282	4.5282	1.2000e-004	0.0000	4.5313

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0919	0.4008	1.0474	3.5800e-003	0.3143	3.0200e-003	0.3173	0.0842	2.8200e-003	0.0870	0.0000	330.7763	330.7763	0.0176	0.0000	331.2161
Unmitigated	0.0919	0.4008	1.0474	3.5800e-003	0.3143	3.0200e-003	0.3173	0.0842	2.8200e-003	0.0870	0.0000	330.7763	330.7763	0.0176	0.0000	331.2161

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	345.00	345.00	345.00	834,040	834,040
Parking Lot	0.00	0.00	0.00		
Total	345.00	345.00	345.00	834,040	834,040

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted Living)	7.48	7.48	7.48	41.60	18.80	39.60	86	11	3
Parking Lot	9.50	7.30	7.30	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
Congregate Care (Assisted Living)	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122
Parking Lot	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

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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	116.9264	116.9264	4.8400e-003	1.0200e-003	117.3512
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	116.9264	116.9264	4.8400e-003	1.0200e-003	117.3512
NaturalGas Mitigated	5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7068	54.7068	1.0500e-003	1.0000e-003	55.0319
NaturalGas Unmitigated	5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7068	54.7068	1.0500e-003	1.0000e-003	55.0319

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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					
Congregate Care (Assisted Living)	1.02517e+006	5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7068	54.7068	1.0500e-003	1.0000e-003	55.0319
Parking Lot	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		5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7068	54.7068	1.0500e-003	1.0000e-003	55.0319

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					
Congregate Care (Assisted Living)	1.02517e+006	5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7068	54.7068	1.0500e-003	1.0000e-003	55.0319
Parking Lot	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		5.5300e-003	0.0472	0.0201	3.0000e-004		3.8200e-003	3.8200e-003		3.8200e-003	3.8200e-003	0.0000	54.7068	54.7068	1.0500e-003	1.0000e-003	55.0319

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	552680	115.0323	4.7600e-003	1.0000e-003	115.4502
Parking Lot	9100	1.8940	8.0000e-005	2.0000e-005	1.9009
Total		116.9264	4.8400e-003	1.0200e-003	117.3512

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	552680	115.0323	4.7600e-003	1.0000e-003	115.4502
Parking Lot	9100	1.8940	8.0000e-005	2.0000e-005	1.9009
Total		116.9264	4.8400e-003	1.0200e-003	117.3512

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.6584	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154
Unmitigated	0.6584	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154

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	0.0867					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5406					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	0.0310	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154
Total	0.6584	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154

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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	0.0867					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5406					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	0.0310	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154
Total	0.6584	0.0118	1.0264	5.0000e-005		5.6700e-003	5.6700e-003		5.6700e-003	5.6700e-003	0.0000	1.6749	1.6749	1.6200e-003	0.0000	1.7154

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	40.3275	0.2945	7.2400e-003	49.8497
Unmitigated	40.3275	0.2945	7.2400e-003	49.8497

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	8.99126 / 5.6684	40.3275	0.2945	7.2400e-003	49.8497
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		40.3275	0.2945	7.2400e-003	49.8497

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	8.99126 / 5.6684	40.3275	0.2945	7.2400e-003	49.8497
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		40.3275	0.2945	7.2400e-003	49.8497

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.5606	1.5106	0.0000	63.3254
Unmitigated	25.5606	1.5106	0.0000	63.3254

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	125.92	25.5606	1.5106	0.0000	63.3254
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		25.5606	1.5106	0.0000	63.3254

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	125.92	25.5606	1.5106	0.0000	63.3254
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		25.5606	1.5106	0.0000	63.3254

9.0 Operational Offroad

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

Fire Pumps and Emergency Generators

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

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

Equipment Type	Number
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11.0 Vegetation
