

**Greenhouse Gas Emissions Assessment
425 S. Winchester Boulevard Project
City of San José, California**

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LIST OF ABBREVIATED TERMS

AB	Assembly Bill
CARB	California Air Resource Board
CCR	California Code of Regulations
CalEEMod	California Emissions Estimator Model
CEQA	California Environmental Quality Act
CALGreen	California Green Building Standards
CPUC	California Public Utilities Commission
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CCSP	Climate Change Scoping Plan
cy	cubic yard
EPA	Environmental Protection Agency
FAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH ₄	Methane
MMTCO ₂ e	million metric tons of carbon dioxide equivalent
MTCO ₂ e	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF ₃	nitrogen trifluoride
N ₂ O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
Sf	square foot
SF ₆	sulfur hexafluoride
TAC	toxic air contaminants

1 INTRODUCTION

This section describes effects on climate change and greenhouse gas (GHG) emissions that would be caused by implementation of the project. The study area for climate change and the analysis of GHG emissions is broad because climate change is influenced by world-wide emissions and their global effects. However, the study area is also limited by the CEQA Guidelines [Section 15064(d)], which directs lead agencies to consider an “indirect physical change” only if that change is a reasonably foreseeable impact that may be caused by the project. This analysis limits discussion to those physical changes to the environment that are not speculative and are reasonably foreseeable.

1.1 PROJECT LOCATION

The proposed Project is located on 425 S. Winchester Boulevard on the northwest corner of Winchester Boulevard and Olin Avenue in western San José. **Figure 1** and **Figure 2** depict the Project site in a regional and local context.

Currently, the Project site is developed as an existing gas station that is still in operation. The existing gas station has a single-story building. There are currently four pumping stations in the center of the Project site and surface parking along the northern and western boundaries of the Project site. There is existing landscaping along the western, northern and eastern (Winchester Boulevard) frontages of the Project site.

1.2 PROJECT DESCRIPTION

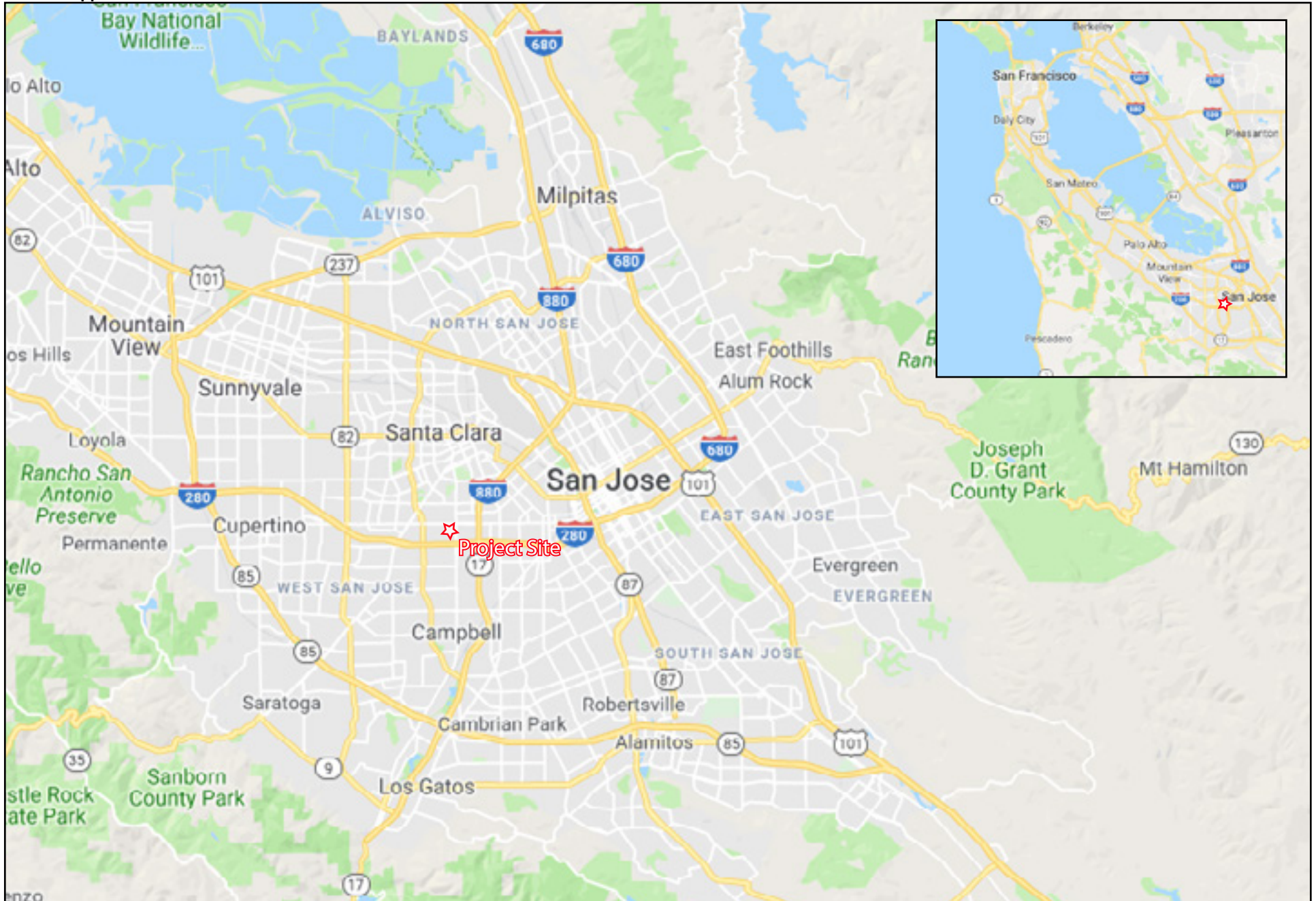
The Project site is located in an urban area with a mix of uses including commercial, office, and medium to high density residential uses. The proposed Project’s existing land use designation is Mixed Use Commercial (MUC) and existing zoning designation is Commercial General (CG). The Project site is within the City of San José Santana Row/Valley Fair Urban Village Plan area, which is characterized by a wide range of commercial, residential, retail, and restaurant uses. The commercial area is home to two large retail commercial centers, Westfield Valley Fair Mall and Santana Row. The Project site is located approximately 114 feet west of Santana Row, immediately across South Winchester Boulevard.

The proposed Project would include approximately 9,181 square feet of retail/commercial space, approximately 5,000 square feet of 2nd floor office space, and 27 dwelling units on an approximate 0.55–acre site. The mixed-use building would include approximately 7,662 square feet of private open space and approximately 1,232 square feet of open space common to the Project residents. See **Figure 3** for more details. Total on-site parking would include approximately 93 stalls. The proposed Project includes two levels of underground parking. Each underground parking level would have 55 stalls, total of 110 stalls, and five stalls would be on the surface level. Additionally, 24 bicycle racks would be located on the ground floor in a secured bike parking room with access from the lobby. The proposed building would be LEED certified as required by City Council policy. The Project would achieve LEED NC v4 certification through the USGBC.

Currently, one driveway allows access to the Project site from Winchester Boulevard and another driveway allows access to the Project site from Olin Avenue. For vehicles exiting the Project site onto Winchester Boulevard, vehicles must make a right turn to exit onto Winchester Boulevard. There is existing utility access (water, sewer, electricity, gas) to the Project site and no native habitat exists on the site.

In addition, the proposed Project is located adjacent to major bus Routes, therefore the residents of the proposed Project and the employment opportunities would have direct accessibility to local transit, furthering the City's General Plan goals to support a healthy community, reduce traffic congestion and decrease greenhouse gas emissions and energy consumption.

Construction is anticipated to begin in early Spring 2021 and last approximately 19 months until Fall of 2022. Construction methods would include demolition of the existing gas station and associated uses, site preparation, grading, paving, building construction, and architectural coating. Construction of the Project would be required to be consistent with the City's Best Management Practices and California Building Code.



Source: Google Earth, 2019

Figure 1: Regional Location

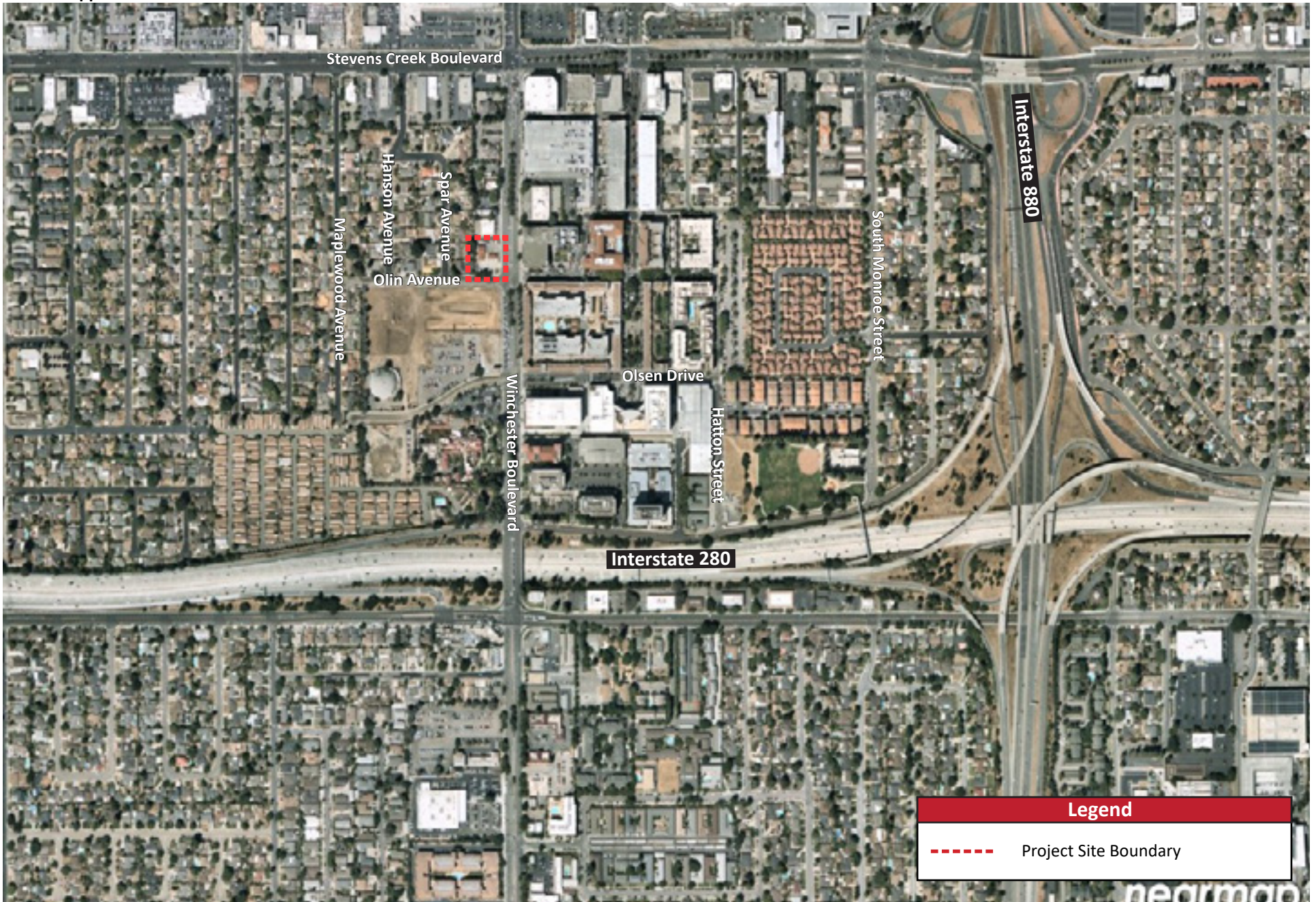
425 S. Winchester Blvd. Project



Not to scale

Kimley»Horn

Expect More. Experience Better.



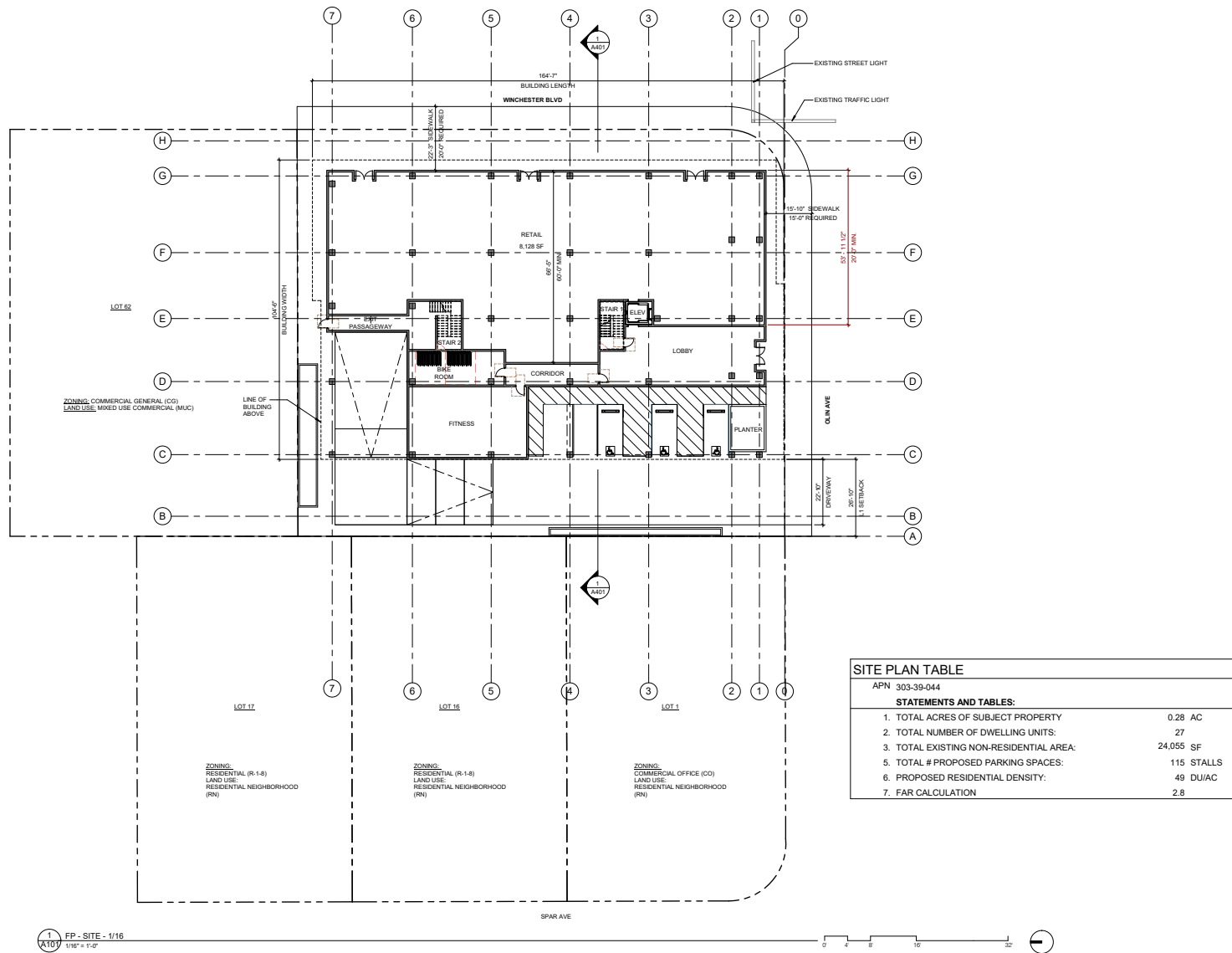
Source: Nearmap, 2019

Figure 2: Project Vicinity Map

425 S. Winchester Blvd. Project



Not to scale



Source: C2K Architecture, 2019

Figure 3: Project Site Plan

425 S. Winchester Blvd. Project



Not to scale

2 ENVIRONMENTAL SETTING

2.1 GREENHOUSE GASES AND CLIMATE CHANGE

Certain gases in the earth's atmosphere classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (Intergovernmental Panel on Climate Change, 2013). [Table 1: Description of Greenhouse Gases](#), describes the primary GHGs attributed to global climate change, including their physical properties.

Table 1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO ₂)	CO ₂ is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO ₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO ₂ is variable because it is readily exchanged in the atmosphere. CO ₂ is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N ₂ O)	N ₂ O is largely attributable to agricultural practices and soil management. Primary human-related sources of N ₂ O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N ₂ O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. The Global Warming Potential of N ₂ O is 298.
Methane (CH ₄)	CH ₄ , a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, approximately 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH ₄ include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH ₄ is approximately 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays approximately 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF ₆)	SF ₆ is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF ₆ is 23,900.
Hydrochlorofluorocarbons (HCFCs)	HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF ₃)	NF ₃ was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.
Source: Compiled from U.S. EPA, <i>Overview of Greenhouse Gases</i> , April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, <i>Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016</i> , 2018; Intergovernmental Panel on Climate Change, <i>Climate Change 2007: The Physical Science Basis</i> , 2007; National Research Council, <i>Advancing the Science of Climate Change</i> , 2010; U.S. EPA, <i>Methane and Nitrous Oxide Emission from Natural Sources</i> , April 2010.	

3 REGULATORY SETTING

3.1 FEDERAL

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007. The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would 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 (NHTSA) 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.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued 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 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, an Executive Memorandum was issued 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 per mile of CO₂ 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. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

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 CO₂ 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 to 23 percent over the 2010 baseline.

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 and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

In 2018, President Trump and the EPA have stated their intent to halt various Federal regulatory activities to reduce GHG emissions, including the phase two program. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of Federal decisions and potential responses from California and other states are speculative at this time.

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan (CPP). These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO₂ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: one fossil-fuel-fired electric utility steam-generating unit and two stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO₂ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the CPP pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the EPA Administrator to review the CPP to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783 Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth issued on March 28, 2017, orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of CO₂, N₂O, and CH₄.

3.2 STATE OF CALIFORNIA

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO₂e in the world and produced 440 million gross metric tons of CO₂e in 2015. In the state, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major legislation related to GHG emissions reduction.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual"). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the state's Climate Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).

- Adopting and implementing measures pursuant to existing state laws and policies, including California’s clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of California’s long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO₂e (MMTCO₂e) to 545 MMTCO₂e. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32’s goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated state-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB, 2017). The Second Update sets forth CARB’s strategy for achieving the state’s 2030 GHG target as established in Senate Bill (SB) 32 (discussed below). The Second Update was approved by CARB’s Governing Board on December 14, 2017.

Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan (CARB, 2017b). The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other Federal actions.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008). Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and

creates specified incentives for the implementation of the strategies. The applicable sustainable community strategy in the Bay Area is Plan Bay Area 2040.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards). AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO₂e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards). SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO₂ per megawatt-hour.

SB 1078 and SBX1-2 (Renewable Electricity Standards). SB 1078 required California to generate 20 percent of its electricity from renewable energy by 2017. This goal was accelerated with SB 107, which changed the due date to 2010 instead of 2017. On November 17, 2008, Executive Order S-14-08 established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SB X1-2 codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015). Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 45 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

AB 398 (Market-Based Compliance Mechanisms). Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air contaminants and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon

allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

SB 150 (Regional Transportation Plans). Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases). Signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the state's tone and guide the actions of state agencies.

Executive Order S-3-05. Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07 Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009

Executive Order S-13-08. Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08. Issued on November 17, 2008, Executive Order S-14-08 expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the state come from renewable energy by 2020. CARB adopted the Renewable Electricity Standard

on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09. Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15. Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO₂e (MMTCO₂e). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the state's climate adaptation plan to be updated every three years and for the state to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

Executive Order B-55-18. Issued on September 10, 2018, Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The executive order requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The executive order also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat, even with rapid population growth.

Title 20 Appliance Efficiency Regulations The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards. California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and will take effect on January 1, 2020. Under the 2019 standards, residential

dwellings will be required to use approximately 53 percent less energy and nonresidential buildings will be required to use approximately 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code. The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as CALGreen, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and nonresidential buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the 2016 CALGreen Code, went into effect January 1, 2017. Updates to the 2016 CALGreen Code will take effect on January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards will continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The new 2019 CALGreen standards require residential buildings are required to be solar ready through solar panels (refer to Section 110.10 in the 2019 Building Energy Efficiency Standards for more details).

3.3 REGIONAL

Bay Area Air Quality Management District Thresholds

The BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various nongovernmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

Under CEQA, the BAAQMD is a commenting responsible agency on air quality within its jurisdiction or impacting its jurisdiction. The BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

In May 2010, the BAAQMD adopted its updated California Environmental Quality Act (CEQA) Air Quality Guidelines as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. The BAAQMD CEQA Guidelines include methodologies and thresholds for addressing project and program level air quality and GHG emissions. The Guidelines were called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds. The court also issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. Notably, the court's ruling was based solely on BAAQMD's failure to comply with CEQA. The court did not reach any issues relating to the validity of the scientific reasoning underlying the recommended significance thresholds.

In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds. CBIA sought review by the California Supreme Court on three issues, including the appellate court's decision to uphold the BAAQMD's adoption of the thresholds, and the Court granted review on just one: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the California Supreme Court confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. The BAAQMD published a new version of the Guidelines dated May 2017, which includes revisions made to address the Supreme Court's opinion. The BAAQMD is currently working to revise any outdated information in the Guidelines as part of its update to the CEQA Guidelines and thresholds of significance.

Clean Air Plan

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM10 standard). The 2017 Clean Air Plan: Spare the Air, Cool the Climate was adopted on April 19, 2019, by the BAAQMD.

The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how the BAAQMD will continue progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

The 2017 Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

3.4 LOCAL

City of San José Municipal Code

The City's Municipal Code includes the following regulations that would reduce GHG emissions from future development:

- Green Building Regulations for Private Development (Chapter 17.84)
- Water Efficient Landscape Standards for New and Rehabilitated Landscaping (Chapter 15.10)
- Transportation Demand Programs for employers with more than 100 employees (Chapter 11.105)
- Construction and Demolition Diversion Deposit Program (Chapter 9.10)
- Wood Burning Ordinance (Chapter 9.10)

City of San José General Plan

The General Plan includes a GHG Reduction Strategy that is designed to help the City sustain its natural resources, grow efficiently, and meet California legal requirements for GHG emissions reduction. Multiple

policies and actions in the General Plan have GHG implications including those targeting land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The policies also include a monitoring component that allows for adaptation and adjustment of City programs and initiatives related to sustainability and associated reductions in GHG emissions. The GHG Reduction Strategy is intended to meet the mandates as outlined in the CEQA Guidelines and the recent standards for “qualified plans” as set forth by BAAQMD.

The GHG Reduction Strategy was re-adopted by the San José City Council in December 2015. The environmental impacts of the GHG Reduction Strategy were analyzed in the General Plan FPEIR and a 2015 Supplement to the General Plan FPEIR. The City’s projected emissions and the GHG Reduction Strategy are consistent with the measures necessary to meet state-wide 2020 goals established by AB 32 and addressed in the Climate Change Scoping Plan. Measures have not been identified that would ensure GHG emissions would be consistent with state-wide 2050 goals; however, the City adopted overriding considerations for identified future impacts associated with buildout of the City’s General Plan.

The General Plan includes the following GHG reduction policies, which are applicable to the project. These policies are also described within the City’s GHG Reduction Strategy.

Goal MS – 2: Maximize the use of green building practices in new and existing development to maximize energy efficiency and conservation and to maximize the use of renewable energy sources.

Policy MS-2.3: Encourage consideration of solar orientation, including building placement, landscaping, design, and construction techniques for new construction to minimize energy consumption.

Policy MS-2.11: Require new development to incorporate green building practices, including those required by the Green Building Ordinance. Specifically, target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g. design to maximize cross ventilation and interior daylight) and through site design techniques (e.g. orienting buildings on sites to maximize the effectiveness of passive solar design).

Goal MS – 14: Promote job and housing growth in area served by public transport and that have community amenities within a 20-minute walking distance.

Policy MS-14.4: Implement the City’s Green Building Policies so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption.

Goal CD-2: Create integrated public and private areas and used that work together to support businesses and to promote pedestrian activity and multi-modal transportation.

- Policy CD-2.10:** Recognize that finite land area exists for development and that density supports retail vitality and transit ridership. Use land regulations to require compact, low-impact development that efficiently uses land planned for growth, particularly for residential development which tends to have a long life-span. Strongly discourage small-lot and single-family detached residential product types in growth areas.
- Policy CD-2.11:** Within the Downtown and Urban Village Overlay areas, consistent with the minimum density requirements of the pertaining Land Use/Transportation Diagram designation, avoid the construction of surface parking lots except as an interim use, so that long-term development of the site will result in a cohesive urban form. In these areas, whenever possible, use structured parking, rather than surface parking, to fulfill parking requirements. Encourage the incorporation of alternative uses, such as parks, above parking structures.
- Goal CD – 3:** Maintain a network of publicly accessible streets and pathways that are safe and convenient for walking and bicycling and minimizing automobile use; that encourage social interaction; and that increase pedestrian activity, multi-modal transit use, environmental sustainability, economic growth, and public health.
- Policy CD-3.2:** Prioritize pedestrian and bicycle connections to transit, community facilities (including schools), commercial areas, and other areas serving daily needs. Ensure that the design of new facilities can accommodate significant anticipated future increases in bicycle and pedestrian activity.
- Goal CD – 5:** Create great public places where the built environment creates attractive and vibrant spaces, provides a safe and healthful setting, fosters interaction among community members, and improves quality of life.
- Policy CD-5.1:** Design areas to promote pedestrian and bicycle movements and to facilitate interaction between community members and to strengthen the sense of community.
- Goal LU 5:** Locate viable neighborhood-serving commercial uses throughout the City in order to stimulate economic development, create complete neighborhoods, and minimize vehicle miles travelled.
- Policy LU-5.4:** Require new commercial development to facilitate pedestrian and bicycle access through techniques such as minimizing building separation from public sidewalks; providing safe, accessible, convenient, and pleasant pedestrian connections; and including secure and convenient bike storage.
- Goal TR – 2:** Improve walking and bicycling facilities to be more convenient, comfortable, and safe, so that they become primary transportation modes in San José.
- Policy TR-2.18:** Provide bicycle storage facilities as identified in the Bicycle Master Plan.
- Goal TR – 3:** Maximize use of existing and future public transport services to increase ridership and decrease the use of private automobiles.

Policy TR-3.3:

As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute toward transit ridership. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities.

4 SIGNIFICANCE CRITERIA AND METHODOLOGY

4.1 THRESHOLDS AND SIGNIFICANT CRITERIA

Based upon the criteria derived from State CEQA Guidelines Appendix G, a project normally would have a significant effect on the environment if it would:

- GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

- GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Bay Area Air Quality Management District's (BAAQMD's) approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute considerably to a significant cumulative impact. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an Air District permit to operate. If annual emissions of operational-related GHGs exceed these levels, the proposed Project would result in a cumulatively considerable contribution to a cumulatively significant impact to global climate change. BAAQMD is currently working to provide updated threshold guidance to address updated GHG regulations such as SB 32 and case law that has found efficiency metric thresholds based on state-wide data must be supported by substantial evidence that the threshold is appropriate for a specific location and specific project type.

BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, the BAAQMD recommends quantification and disclosure of construction GHG emissions. The BAAQMD also recommends that the Lead Agency should make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals, as required by the Public Resources Code, Section 21082.2. The Lead Agency is encouraged to incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.

However, as discussed above in the regulatory section, the City of San José has a GHG threshold of 2.6 MTCO_{2e}/sp/yr in 2030 and 1.9 MTCO_{2e}/sp/yr in 2050 for operational GHG emissions. The City of San José does not have construction-related GHG emission thresholds.

4.2 METHODOLOGY

The Project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Details of the modeling assumptions and emission factors are provided in [Appendix A: Greenhouse Gas Emissions Data](#). For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. The Project's construction-related GHG emissions were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The Project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles.

The Project's operations-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

Details of the modeling assumptions and emission factors are provided in [Appendix A](#), and a summary of adjustments is provided below.

CalEEMod default emission factors incorporate compliance with some, but not all, applicable rules and regulations regarding energy efficiency and vehicle fuel efficiency, and other GHG reduction policies, as described in the CalEEMod User's Guide (CAPCOA, 2016). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I motor vehicle emission standards
- Low Carbon Fuel Standard (LCFS)
- 2016 title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors:

- Pavley II (LEV III) Advanced Clean Cars Program (extends to model year 2025)
- Renewable Portfolio Standards (RPS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)
- 2019 Title 24 Energy Efficiency Standards (effective January 1, 2020)

5 POTENTIAL IMPACTS AND MITIGATION

5.1 GREENHOUSE GAS EMISSIONS

Impact GHG-1 Would the Project generate greenhouse gas emissions, either directly or indirectly, that could have a significant impact on the environment?

Short-Term Construction Greenhouse Gas Emissions

Construction of the Project would result in direct emissions of CO₂, N₂O, and CH₄ from the operation of construction equipment and the transport of materials and construction workers to and from the Project site. BAAQMD does not have a threshold for construction GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to long-term cumulative GHG emissions impacts of the proposed Project. However, the BAAQMD advises that construction GHG should be disclosed and a determination on the significance of construction GHG emissions in relation to meeting AB 32 GHG reduction goals should be made. Total GHG emissions generated during all phases of construction were combined and are presented in [Table 2: Construction Greenhouse Gas Emissions](#). The CalEEMod outputs are contained within the Appendix A, Air Quality and GHG Data.

Table 2: Construction Greenhouse Gas Emissions

Year	MTCO ₂ e ¹
2021	378
2022	257
Total	635
<i>Amortized</i>	21

MTCO₂e = metric tons of carbon dioxide equivalent.
 1. Due to Rounding, Total MTCO₂e may be marginally different from CalEEMod output.
 Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.

As shown in [Table 2](#), Project construction-related activities would generate approximately 635 MTCO₂e of GHG emissions over the course of construction. One-time, short-term construction GHG emissions are typically summed and amortized over the Project’s lifetime (assumed to be 30 years).¹ It is reasonable to look at a 30-year time frame for buildings since this is a typical interval before a new building requires the first major renovation.² The amortized Project emissions would be approximately 21 MTCO₂e per year. Once construction is complete, the generation of construction-related GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions would occur over the Project’s life. GHG emissions would result from direct emissions such as Project generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power over the life of the Project, the energy required to

¹The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (South Coast Air Quality Management District, *Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #13*, August 26, 2009).

² International Energy Agency, *Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings*, March 2008.

convey water to, and wastewater from the project site, the emissions associated with solid waste generated from the Project site, and any fugitive refrigerants from air conditioning or refrigerators. [Table 3: Operational Greenhouse Gas Emissions](#), summarizes the total GHG emissions associated with the Project.

Table 3: Operational Greenhouse Gas Emissions

Category	MTCO ₂ e ¹
Area Source	1.42
Energy	51.57
Mobile	247.66
Waste	6.38
Water and Wastewater	5.13
Total Project²	312.16
Population ³	133
Project MTCO₂e/SP/year⁴	2.35
Threshold	2.6 MTCO₂e/SP/year
Exceeds Threshold?	No
1. Emissions were calculated using CalEEMod version 2016.3.2. 2. Emissions may not total due to rounding. 3. Includes 47 employees and 86 residents. 4. metric tons of carbon dioxide equivalent per service person per year. Source: CalEEMod version 2016.3.2. Refer to Appendix A for model outputs.	

Below is a description of the primary sources of operational emissions:

Area Sources. Area source emissions occur from hearths (i.e. natural gas fireplaces), architectural coatings, landscaping equipment, and consumer products. Landscaping is anticipated to occur throughout the Project site. Additionally, the primary emissions from architectural coatings are volatile organic compounds, which are relatively insignificant as direct GHG emissions. The Project would result in 1.42 MTCO₂e/yr (refer to [Table 3](#)).

Energy Consumption. Energy consumption consists of emissions from project consumption of electricity and natural gas. The Project would result in approximately 61 MTCO₂e/yr from energy consumption (refer to [Table 3](#)).

Mobile Sources. Mobiles sources from the Project were calculated with CalEEMod based on the trip generation from the Project Traffic Study. As shown in [Table 3](#), the mobile source emissions from the Project would be approximately 348 MTCO₂e/yr.

Solid Waste. Solid waste releases GHG emissions in the form of methane when these materials decompose. The Project would result in approximately 13 MTCO₂e/yr from solid waste (refer to [Table 3](#)).

Water and Wastewater. GHG emissions from water demand would occur from electricity consumption associated with water conveyance and treatment. Existing water efficiency regulations require the project

to limit the use of turf. The Project would result in approximately 6 MTCO₂e/yr from water and wastewater conveyance and treatment (refer to [Table 3](#)).

[Table 3](#), shows that operational emissions from the proposed Project would generate approximately 312 MTCO₂e per year. However, the City of San José threshold for operational GHG emissions is 2.6 MTCO₂e/sp/yr for 2030. The Project would generate approximately 47 employees and 86 residents for a total of 133 people.³ This would result in 2.35 MTCO₂e/sp/yr. Therefore, the Project is below the 2030 threshold.

It should be noted that the operational emissions incorporate adjustments for Project energy consumption based on the 2019 Title 24 Part 6 (Building Energy Efficiency Standards). The standards also require updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements that would cut residential energy use by more than 50 percent (with solar) and nonresidential energy use by 30 percent. The standards also encourage demand responsive technologies including battery storage and heat pump water heaters and improve the building's thermal envelope through high performance attics, walls and windows to improve comfort and energy savings (California Energy Commission, March 2018). The Project would also comply with the appliance energy efficiency standards in Title 20 of the California Code of Regulations. The Title 20 standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances. The Project would be constructed according to the standards for high-efficiency water fixtures for indoor plumbing and water efficient irrigation systems required in 2019 Title 24, Part 11 (CALGreen).

At the State and global level, improvements in technology, policy, and social behavior can also influence and reduce operational emissions generated by a project. The state is currently on a pathway to achieving the Renewable Portfolio Standards goal of 33 percent renewables by 2020 and 60 percent renewables by 2030 per SB 100. Despite these goals, the majority of the Project's emissions would still be from mobile and energy sources. Future mobile source emissions are greatly dependent on changes in vehicle technology, fuels, and social behavior, which can be influenced by policies to varying degrees. Taking known future policies into account, CARB estimates that over 90 percent of future vehicles in Santa Clara County would still run on gasoline even with increased electric vehicle mode share (California Air Resources Board, 2017). This is assumed to also be applicable to the San José vehicle fleet, absent data that may suggest otherwise. Due to these external factors, average emissions from transportation in 2050 would mostly still generate GHG emissions, but the quantity is uncertain in light of potential changes in technology and policy over the next 30 years.

The majority of Project emissions (approximately 96 percent) would occur from mobile and energy sources. As noted above, energy and mobile sources are targeted by statewide measures such as low carbon fuels, cleaner vehicles, strategies to promote sustainable communities and improved transportation choices that result in reducing VMT, continued implementation of the Renewable Portfolio Standard (the target is now set at 60 percent renewables by 2030), and extension of the Cap and Trade program (requires reductions from industrial sources, energy generation, and fossil fuels). The Cap and

³ the California Department of Finance estimates 3.21 residents per household in San José. The project proposes an additional 27 residential units, which would result in an increase of approximately 86 residents. The City calculates one job per 300 SF of retail/commercial/office space. (City of San José Envision 2040, 2011) ((9,181 SF retail/commercial + 5,000 SF office) / 300 SF = 47.27 jobs)

Trade program covers approximately 85 percent of California’s GHG emissions as of January 2015. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) commenced in 2013 and will decline approximately three percent each year, achieving GHG emission reductions throughout the program's duration. The passage of AB 398 in July 2017 extended the duration of the Cap and Trade program from 2020 to 2030. With continued implementation of various statewide measures, the Project’s operational energy and mobile source emissions would continue to decline in the future.

Project emissions are shown in Table 3: Operational Greenhouse Gas Emissions. Impacts are less than significant. Project-related GHG emissions would not result in a cumulatively considerable contribution to the significant cumulative impact of climate change.

Mitigation Measures: None required.

Level of Significance: Less than significant impact.

5.2 GREENHOUSE GAS REDUCTION PLAN COMPLIANCE

Impact GHG-2: Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions?

City of San José

As discussed above in the Local Regulatory Section, the City of San José does not have a stand-alone Climate Action Plan but the General Plan policies and actions to reduce the generation of GHG emissions within the City. The Project would be consistent with and rely on these goals, policies, and actions. Therefore, the Project would result in a less than significant cumulative impact to global climate change.

The proposed Project involves the demolition of an existing gas station and construction of a six-story, 154,100-square foot building with one level of below-grade parking. It is expected that the proposed Project would contribute marginally to regional GHG emissions, both through construction and operational emissions. Consistency with the Land Use/Transportation Diagram in the General Plan (General Plan Goals/Policies IP-1, LU-10), along with conformance to the City's Green Building Measures (General Plan Goals MS-1, MS-14) would ensure that the project is in compliance with the City's GHG Reduction Strategy. The GHG Reduction Strategy lists mandatory criteria that development projects must satisfy in order to be consistent with City goals and policies. The proposed Project is consistent with the General Plan land use designation for the site. Approximately 24 bicycle parking spaces would be provided.

The Project would be subject to compliance with all building codes in effect at the time of construction, which include energy conservation measures mandated by California Building Standards Code Title 24 – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction (e.g., high- efficiency lighting, high-efficiency heating, ventilating, and air-conditioning (HVAC) systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2016 standards improved upon the 2013 standards for new construction of, and additions and alterations to, residential, commercial, and industrial buildings. The 2016 standards went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and will take effect on January 1, 2020. Under the 2019 standards, residential dwellings will be required to use approximately 53 percent less energy and nonresidential buildings will be required to use approximately 30 percent less energy than buildings under the 2016 standards.

Additionally, the Project would be required to follow the Green Building Regulations for Private Development (Chapter 17.84) of the City of San José Municipal Code. The Project would comply with SB X7-7, which requires California to achieve a 20 percent reduction in urban per capita water use by 2020. As well as implement best management practices for water conservation to achieve the City's water conservation goals.

The Project demonstrates consistency with the General Plan goals, measures, and emission reduction targets, and would not conflict with any applicable plan, policy, or regulation of an agency adopted to

reduce GHG emissions, including Title 24, AB 32, and SB 32. Therefore, Project impacts would be less than significant.

CARB Scoping Plan

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan provides a range of GHG reduction actions that include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program.

The latest CARB Climate Change Scoping Plan (2017) outlines the state’s strategy to reduce state’s GHG emissions to return to 40 percent below 1990 levels by 2030 pursuant to SB 32. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

The 2017 Scoping Plan Update identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the First Update to the Climate Change Scoping Plan (2013). Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions would be adopted as required to achieve statewide GHG emissions targets.

As shown in Table 4: Project Consistency with Applicable CARB Scoping Plan Measures the Project is consistent with most of the strategies, while others are not applicable to the Project.

Table 4: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	Consistent. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period.
	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	Consistent. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the Project would be required to comply with the Pavley emissions standards.
		2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	Consistent. The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with the site would comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	Consistent. This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the Project would utilize low carbon transportation fuels as required under this measure.
	Regional Transportation-Related Greenhouse Gas Targets	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	Consistent. The project would provide development in the region that is consistent with the growth projections in the Regional Transportation Plan/Sustainable Communities Strategy (SCS) (Plan Bay Area 2040).

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	Goods Movement	Goods Movement Action Plan January 2007	Not applicable. The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	Consistent. This measure applies to medium and heavy-duty vehicles that operate in the state. The Project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the Project would be required to comply with the requirements of this regulation.
	High Speed Rail	Funded under SB 862	Not applicable. This is a statewide measure that cannot be implemented by a Project Applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	Consistent. The Project would not conflict with implementation of this measure. The Project would comply with the latest energy efficiency standards. Additionally, the Project would achieve LEED NC v4 certification through the USGBC.
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	Consistent. The Project would obtain electricity from the electric utility company, PG&E. PG&E obtained 33 percent of its power supply from renewable sources in 2016. Therefore, the utility would provide power when needed on site that is composed of a greater percentage of renewable sources.
SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)			
Million Solar Roofs Program	Tax incentive program	Consistent. This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. Homeowners within the project would be able to take advantage of	

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
			incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. Additionally, the Project would achieve LEED NC v4 certification through the USGBC. The Project would also comply with the City's Water-Efficient Landscape Ordinance (Chapter 15.11 of the San José Municipal Code).
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	Consistent. The State goal is to increase the use of green building practices. The Project would implement required green building strategies through existing regulation that requires the Project to comply with various CalGreen requirements. Additionally, the Project would achieve LEED NC v4 certification through the USGBC.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	Not applicable. The Project does not include industrial land uses.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	Consistent. The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CALGreen code. The City has consistently achieved its state recycling mandates.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap and Trade Offset Projects	Not applicable. The Project site is an existing gas station located in an urban area. No forested lands exist on-site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	Not applicable. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The Project is not expected to use large systems subject to the refrigerant management regulations adopted by CARB.

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	Not applicable. The Project site is an infill site. No grazing, feedlot or other agricultural activities that generate manure currently exist on-site or are proposed to be implemented by the Project.
Source: California Air Resources Board (CARB), <i>California's 2017 Climate Change Scoping Plan</i> , 2017b and CARB, <i>Climate Change Scoping Plan</i> , December 2008.			

As noted above, the Project would emit approximately 312 MTCO₂e per year, directly from on-site activities and indirectly from off-site motor vehicles. Also, as demonstrated in [Table 4](#), the Project would not conflict with the CARB Scoping Plan. GHG emissions caused by long-term operation of the proposed would be less than significant.

Appendix B, Local Action, of the 2017 CARB Scoping Plan lists potential actions that support the State’s climate goals. However, the Scoping Plan notes that the applicability and performance of the actions may vary across the regions. The document is organized into two categories (A) examples of plan-level GHG reduction actions that could be implemented by local governments and (B) examples of on-site project design features, mitigation measures, that could be required of individual projects under CEQA, if feasible, when the local jurisdiction is the lead agency.

The Project would implement a number of the Standard Permit Conditions during construction. For example, a few of the construction measures include enforcing idling time restrictions on construction vehicles, use of added exhaust muffling and filtering devices, replant vegetation in disturbed areas as quickly as possible, and posting a publicly visible sign with the telephone number and person at the lead agency to contact regarding dust complaints. The Project includes mitigation that would require construction vehicles to operate Tier 4 engines or equivalent. As indicated above, GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new non-residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes is derived from natural gas combustion. Therefore, energy saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The Project would be required to comply with existing regulations, including applicable measures from the City’s General Plan, or would be directly affected by the outcomes (vehicle trips and energy consumption would be less carbon intensive due to statewide compliance with future low carbon fuel standard amendments and increasingly stringent Renewable Portfolio Standards). As such, the Project would not conflict with any other state-level regulations pertaining to GHGs.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the Project would comply with all applicable measures are enacted that State lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050.

Plan Bay Area

The Project would be consistent with the overall goals of Plan Bay Area 2040 to provide housing, healthy and safe communities, and climate protection with an overall goal to reduce VMT. As noted above, the Project would develop the Project site with housing, commercial, and offices uses consistent with the General Plan. The Project would add some additional employment, trips related to employees that work directly at the Project site. Thus, implementation of the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and this impact would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

5.3 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

Cumulative Setting

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

Cumulative Impacts and Mitigation Measures

It is generally the case that an individual project of the Project's size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of Project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As shown in [Table 2](#) and [Table 3](#), the Project's GHG emissions would be less than significant. The Project would not conflict with any GHG reduction plan. Therefore, the Project's cumulative contribution of GHG emissions would be less than significant and the Project's cumulative GHG impacts would also be less than cumulatively considerable.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

6 REFERENCES

1. Bay Area Air Quality Management District, *2017 CEQA Air Quality Guidelines*, 2017.
2. Bay Area Air Quality Management District, *Final 2017 Clean Air Plan*, 2017.
3. California Air Pollution Control Officers Association, *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, 2008.
4. California Air Pollution Control Officers Association (CAPCOA). 2016. *CalEEMod User's Guide*.
5. California Air Resources Board, *Climate Change Proposed Scoping Plan*. 2008.
6. California Air Resources Board, *California Greenhouse Gas Inventory for 2000-2010 — by Category Defined in the Scoping Plan*, 2013.
7. California Air Resources Board, *California Greenhouse Gas Emissions Inventory – 2017 Edition*, 2017.
8. California Air Resources Board, *California's 2017 Climate Change Scoping Plan*, 2017.
9. City of San José, *General Plan*, 2018.
10. City of San José, *Municipal Code*, 2019.
11. Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007.
12. Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013.
13. Intergovernmental Panel on Climate Change (IPCC), *Climate Change*. 2014. Synthesis Report: Approved Summary for Policymakers.
14. Kimley-Horn & Associates, *425 Winchester Boulevard Development Transportation Analysis*, October 2019.
15. National Research Council, *Advancing the Science of Climate Change*, 2010.
16. U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, 2010.
17. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018.
18. U.S. EPA, *Overview of Greenhouse Gases*, 2018.

Appendix A

Greenhouse Gas Emissions Data

425 Winchester Project - Santa Clara County, Annual

425 Winchester Project
Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	4.74	1000sqft	0.11	4,737.00	0
Enclosed Parking with Elevator	115.00	Space	1.03	46,000.00	0
Other Non-Asphalt Surfaces	6.86	1000sqft	0.16	6,857.00	0
Apartments Mid Rise	27.00	Dwelling Unit	0.71	27,000.00	77
Strip Mall	8.13	1000sqft	0.19	8,128.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	171	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted per PG&E 2019 CRSR

Land Use - Per Project site plans

Construction Phase - Anticipated construction schedule

Off-road Equipment - Anticipated construction equipment

Demolition - Includes building demolition, existing pavement

Appendix C

Grading - 25,000 cy for two floor underground garage

Vehicle Trips - Adjusted trip rate per TIA

Woodstoves - No woodburning per BAAQMD Reg 6, rule 3

Construction Off-road Equipment Mitigation - Per BAAQMD basic control measures

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - Per AB939

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	3.00	30.00
tblConstructionPhase	NumDays	6.00	40.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	220.00	280.00
tblConstructionPhase	NumDays	10.00	66.00
tblFireplaces	NumberGas	4.05	8.64
tblFireplaces	NumberWood	4.59	0.00
tblGrading	MaterialExported	0.00	25,000.00
tblLandUse	LandUseSquareFeet	4,740.00	4,737.00
tblLandUse	LandUseSquareFeet	6,860.00	6,857.00
tblLandUse	LandUseSquareFeet	8,130.00	8,128.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	171
tblVehicleTrips	ST_TR	6.39	6.32
tblVehicleTrips	ST_TR	2.46	14.00
tblVehicleTrips	ST_TR	42.04	32.54
tblVehicleTrips	SU_TR	5.86	6.32
tblVehicleTrips	SU_TR	1.05	14.00
tblVehicleTrips	SU_TR	20.43	32.54
tblVehicleTrips	WD_TR	6.65	6.32
tblVehicleTrips	WD_TR	11.03	14.00

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tblVehicleTrips	WD_TR	44.32	32.54
tblWoodstoves	NumberCatalytic	0.54	0.00
tblWoodstoves	NumberNoncatalytic	0.54	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2221	2.3492	1.5880	4.2100e-003	0.2254	0.0905	0.3159	0.0873	0.0851	0.1724	0.0000	376.6071	376.6071	0.0621	0.0000	378.1601
2022	0.4585	1.4917	1.4774	3.0000e-003	0.0435	0.0664	0.1098	0.0118	0.0637	0.0755	0.0000	255.7359	255.7359	0.0386	0.0000	256.7000
Maximum	0.4585	2.3492	1.5880	4.2100e-003	0.2254	0.0905	0.3159	0.0873	0.0851	0.1724	0.0000	376.6071	376.6071	0.0621	0.0000	378.1601

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0950	0.8491	1.6997	4.2100e-003	0.1256	0.0162	0.1418	0.0454	0.0161	0.0615	0.0000	376.6068	376.6068	0.0621	0.0000	378.1598
2022	0.3783	0.6074	1.5841	3.0000e-003	0.0413	0.0202	0.0615	0.0112	0.0202	0.0314	0.0000	255.7357	255.7357	0.0386	0.0000	256.6997
Maximum	0.3783	0.8491	1.6997	4.2100e-003	0.1256	0.0202	0.1418	0.0454	0.0202	0.0615	0.0000	376.6068	376.6068	0.0621	0.0000	378.1598

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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
Percent Reduction	30.45	62.08	-7.13	0.00	37.92	76.80	52.25	42.89	75.61	62.53	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)
1	3-1-2021	5-31-2021	0.8862	0.2479
2	6-1-2021	8-31-2021	0.7975	0.3277
3	9-1-2021	11-30-2021	0.6437	0.2673
4	12-1-2021	2-28-2022	0.6009	0.2581
5	3-1-2022	5-31-2022	0.5940	0.2594
6	6-1-2022	8-31-2022	0.8101	0.4433
7	9-1-2022	9-30-2022	0.1629	0.1146
		Highest	0.8862	0.4433

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	0.1922	3.2500e-003	0.2022	2.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	1.4085	1.4085	3.4000e-004	2.0000e-005	1.4229
Energy	1.7800e-003	0.0155	8.5600e-003	1.0000e-004		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	60.4585	60.4585	7.6000e-003	1.8300e-003	61.1928
Mobile	0.1007	0.3676	1.0956	3.7900e-003	0.3570	2.9900e-003	0.3600	0.0956	2.7800e-003	0.0983	0.0000	347.3002	347.3002	0.0115	0.0000	347.5870
Waste						0.0000	0.0000		0.0000	0.0000	5.1499	0.0000	5.1499	0.3044	0.0000	12.7586
Water						0.0000	0.0000		0.0000	0.0000	1.0164	1.8861	2.9025	0.1047	2.5300e-003	6.2747
Total	0.2946	0.3864	1.3064	3.9100e-003	0.3570	5.4100e-003	0.3624	0.0956	5.2000e-003	0.1008	6.1663	411.0533	417.2196	0.4285	4.3800e-003	429.2361

Mitigated Operational

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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					
Area	0.1922	3.2500e-003	0.2022	2.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	1.4085	1.4085	3.4000e-004	2.0000e-005	1.4229
Energy	1.3800e-003	0.0120	6.5000e-003	8.0000e-005		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	50.9421	50.9421	6.5800e-003	1.5600e-003	51.5708
Mobile	0.0913	0.3154	0.8538	2.7000e-003	0.2449	2.2000e-003	0.2471	0.0656	2.0500e-003	0.0676	0.0000	247.4339	247.4339	8.9000e-003	0.0000	247.6564
Waste						0.0000	0.0000		0.0000	0.0000	2.5749	0.0000	2.5749	0.1522	0.0000	6.3793
Water						0.0000	0.0000		0.0000	0.0000	0.8131	1.6172	2.4303	0.0838	2.0300e-003	5.1297
Total	0.2849	0.3306	1.0624	2.8000e-003	0.2449	4.3500e-003	0.2493	0.0656	4.2000e-003	0.0698	3.3881	301.4017	304.7898	0.2518	3.6100e-003	312.1591

	ROG	NOx	CO	SO2	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	3.30	14.42	18.67	28.39	31.40	19.59	31.22	31.39	19.23	30.78	45.05	26.68	26.95	41.24	17.58	27.28

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	3/26/2021	5	20	
2	Site Preparation	Site Preparation	3/27/2021	5/7/2021	5	30	
3	Grading	Grading	5/8/2021	7/2/2021	5	40	
4	Paving	Paving	7/3/2021	8/13/2021	5	30	
5	Building Construction	Building Construction	8/14/2021	9/9/2022	5	280	
6	Architectural Coating	Architectural Coating	7/1/2022	9/30/2022	5	66	

Acres of Grading (Site Preparation Phase): 45

Acres of Grading (Grading Phase): 20

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Acres of Paving: 1.19

Residential Indoor: 54,675; Residential Outdoor: 18,225; Non-Residential Indoor: 19,298; Non-Residential Outdoor: 6,433; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	123.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	3,125.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	46.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Use Cleaner Engines for Construction Equipment
- Replace Ground Cover
- Water Exposed Area
- Water Unpaved Roads
- Reduce Vehicle Speed on Unpaved Roads
- Clean Paved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0133	0.0000	0.0133	2.0100e-003	0.0000	2.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.1970	0.1449	2.4000e-004		0.0104	0.0104		9.7100e-003	9.7100e-003	0.0000	21.0713	21.0713	5.3900e-003	0.0000	21.2060
Total	0.0199	0.1970	0.1449	2.4000e-004	0.0133	0.0104	0.0237	2.0100e-003	9.7100e-003	0.0117	0.0000	21.0713	21.0713	5.3900e-003	0.0000	21.2060

Unmitigated Construction Off-Site

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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					
Hauling	4.8000e-004	0.0165	3.5800e-003	5.0000e-005	1.0400e-003	5.0000e-005	1.0900e-003	2.9000e-004	5.0000e-005	3.4000e-004	0.0000	4.6312	4.6312	2.1000e-004	0.0000	4.6364
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.8000e-004	2.9700e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.8535	0.8535	2.0000e-005	0.0000	0.8540
Total	8.8000e-004	0.0167	6.5500e-003	6.0000e-005	2.0700e-003	6.0000e-005	2.1300e-003	5.6000e-004	6.0000e-005	6.2000e-004	0.0000	5.4847	5.4847	2.3000e-004	0.0000	5.4904

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.6900e-003	0.0000	5.6900e-003	8.6000e-004	0.0000	8.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0713	21.0713	5.3900e-003	0.0000	21.2060
Total	2.8100e-003	0.0122	0.1472	2.4000e-004	5.6900e-003	3.7000e-004	6.0600e-003	8.6000e-004	3.7000e-004	1.2300e-003	0.0000	21.0713	21.0713	5.3900e-003	0.0000	21.2060

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	4.8000e-004	0.0165	3.5800e-003	5.0000e-005	1.0000e-003	5.0000e-005	1.0500e-003	2.8000e-004	5.0000e-005	3.2000e-004	0.0000	4.6312	4.6312	2.1000e-004	0.0000	4.6364

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Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.8000e-004	2.9700e-003	1.0000e-005	9.8000e-004	1.0000e-005	9.8000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8535	0.8535	2.0000e-005	0.0000	0.8540
Total	8.8000e-004	0.0167	6.5500e-003	6.0000e-005	1.9800e-003	6.0000e-005	2.0300e-003	5.4000e-004	6.0000e-005	5.9000e-004	0.0000	5.4847	5.4847	2.3000e-004	0.0000	5.4904

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0239	0.0000	0.0239	2.5800e-003	0.0000	2.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0232	0.2743	0.1612	3.7000e-004		0.0105	0.0105		9.6900e-003	9.6900e-003	0.0000	32.2897	32.2897	0.0104	0.0000	32.5507
Total	0.0232	0.2743	0.1612	3.7000e-004	0.0239	0.0105	0.0344	2.5800e-003	9.6900e-003	0.0123	0.0000	32.2897	32.2897	0.0104	0.0000	32.5507

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.6000e-004	2.7500e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7879	0.7879	2.0000e-005	0.0000	0.7883
Total	3.7000e-004	2.6000e-004	2.7500e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7879	0.7879	2.0000e-005	0.0000	0.7883

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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					0.0102	0.0000	0.0102	1.1000e-003	0.0000	1.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5100e-003	0.0196	0.1779	3.7000e-004		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	32.2896	32.2896	0.0104	0.0000	32.5507
Total	4.5100e-003	0.0196	0.1779	3.7000e-004	0.0102	6.0000e-004	0.0108	1.1000e-003	6.0000e-004	1.7000e-003	0.0000	32.2896	32.2896	0.0104	0.0000	32.5507

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.6000e-004	2.7500e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7879	0.7879	2.0000e-005	0.0000	0.7883
Total	3.7000e-004	2.6000e-004	2.7500e-003	1.0000e-005	9.0000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7879	0.7879	2.0000e-005	0.0000	0.7883

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					0.1325	0.0000	0.1325	0.0676	0.0000	0.0676	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0365	0.4043	0.1952	4.1000e-004		0.0183	0.0183		0.0169	0.0169	0.0000	36.2078	36.2078	0.0117	0.0000	36.5005
Total	0.0365	0.4043	0.1952	4.1000e-004	0.1325	0.0183	0.1508	0.0676	0.0169	0.0844	0.0000	36.2078	36.2078	0.0117	0.0000	36.5005

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0123	0.4179	0.0911	1.2100e-003	0.0265	1.3000e-003	0.0278	7.2800e-003	1.2500e-003	8.5300e-003	0.0000	117.6614	117.6614	5.3400e-003	0.0000	117.7949
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	6.2000e-004	4.3000e-004	4.5800e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3131	1.3131	3.0000e-005	0.0000	1.3138
Total	0.0129	0.4183	0.0956	1.2200e-003	0.0281	1.3100e-003	0.0294	7.7000e-003	1.2600e-003	8.9600e-003	0.0000	118.9745	118.9745	5.3700e-003	0.0000	119.1087

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					0.0566	0.0000	0.0566	0.0289	0.0000	0.0289	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0400e-003	0.0219	0.2181	4.1000e-004		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	36.2077	36.2077	0.0117	0.0000	36.5005

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Total	5.0400e-003	0.0219	0.2181	4.1000e-004	0.0566	6.7000e-004	0.0573	0.0289	6.7000e-004	0.0296	0.0000	36.2077	36.2077	0.0117	0.0000	36.5005
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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	0.0123	0.4179	0.0911	1.2100e-003	0.0253	1.3000e-003	0.0266	6.9900e-003	1.2500e-003	8.2400e-003	0.0000	117.6614	117.6614	5.3400e-003	0.0000	117.7949
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	6.2000e-004	4.3000e-004	4.5800e-003	1.0000e-005	1.5000e-003	1.0000e-005	1.5100e-003	4.0000e-004	1.0000e-005	4.1000e-004	0.0000	1.3131	1.3131	3.0000e-005	0.0000	1.3138
Total	0.0129	0.4183	0.0956	1.2200e-003	0.0268	1.3100e-003	0.0281	7.3900e-003	1.2600e-003	8.6500e-003	0.0000	118.9745	118.9745	5.3700e-003	0.0000	119.1087

3.5 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	0.0160	0.1597	0.1766	2.7000e-004		8.7400e-003	8.7400e-003		8.0600e-003	8.0600e-003	0.0000	23.2572	23.2572	7.3700e-003	0.0000	23.4415
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0160	0.1597	0.1766	2.7000e-004		8.7400e-003	8.7400e-003		8.0600e-003	8.0600e-003	0.0000	23.2572	23.2572	7.3700e-003	0.0000	23.4415

Unmitigated Construction Off-Site

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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					
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	6.9000e-004	4.8000e-004	5.1500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.8000e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4772	1.4772	3.0000e-005	0.0000	1.4781
Total	6.9000e-004	4.8000e-004	5.1500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.8000e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4772	1.4772	3.0000e-005	0.0000	1.4781

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1600e-003	0.0137	0.1946	2.7000e-004		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	23.2572	23.2572	7.3700e-003	0.0000	23.4414
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.1600e-003	0.0137	0.1946	2.7000e-004		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	23.2572	23.2572	7.3700e-003	0.0000	23.4414

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					

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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	6.9000e-004	4.8000e-004	5.1500e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4772	1.4772	3.0000e-005	0.0000	1.4781
Total	6.9000e-004	4.8000e-004	5.1500e-003	2.0000e-005	1.6900e-003	1.0000e-005	1.7000e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4772	1.4772	3.0000e-005	0.0000	1.4781

3.6 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	0.1023	0.8014	0.7282	1.2500e-003		0.0409	0.0409		0.0392	0.0392	0.0000	103.8244	103.8244	0.0204	0.0000	104.3350
Total	0.1023	0.8014	0.7282	1.2500e-003		0.0409	0.0409		0.0392	0.0392	0.0000	103.8244	103.8244	0.0204	0.0000	104.3350

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2800e-003	0.0719	0.0192	1.9000e-004	4.6100e-003	1.6000e-004	4.7600e-003	1.3300e-003	1.5000e-004	1.4800e-003	0.0000	18.1321	18.1321	7.9000e-004	0.0000	18.1518
Worker	7.0900e-003	4.9100e-003	0.0526	1.7000e-004	0.0182	1.1000e-004	0.0184	4.8500e-003	1.1000e-004	4.9600e-003	0.0000	15.1005	15.1005	3.4000e-004	0.0000	15.1091
Total	9.3700e-003	0.0768	0.0718	3.6000e-004	0.0229	2.7000e-004	0.0231	6.1800e-003	2.6000e-004	6.4400e-003	0.0000	33.2325	33.2325	1.1300e-003	0.0000	33.2609

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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	0.0553	0.2693	0.7801	1.2500e-003		0.0124	0.0124		0.0124	0.0124	0.0000	103.8243	103.8243	0.0204	0.0000	104.3349
Total	0.0553	0.2693	0.7801	1.2500e-003		0.0124	0.0124		0.0124	0.0124	0.0000	103.8243	103.8243	0.0204	0.0000	104.3349

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2800e-003	0.0719	0.0192	1.9000e-004	4.4100e-003	1.6000e-004	4.5700e-003	1.2800e-003	1.5000e-004	1.4400e-003	0.0000	18.1321	18.1321	7.9000e-004	0.0000	18.1518
Worker	7.0900e-003	4.9100e-003	0.0526	1.7000e-004	0.0173	1.1000e-004	0.0174	4.6200e-003	1.1000e-004	4.7200e-003	0.0000	15.1005	15.1005	3.4000e-004	0.0000	15.1091
Total	9.3700e-003	0.0768	0.0718	3.6000e-004	0.0217	2.7000e-004	0.0220	5.9000e-003	2.6000e-004	6.1600e-003	0.0000	33.2325	33.2325	1.1300e-003	0.0000	33.2609

3.6 Building Construction - 2022

Unmitigated Construction On-Site

Appendix C

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1670	1.3144	1.2918	2.2500e-003		0.0632	0.0632		0.0606	0.0606	0.0000	186.9121	186.9121	0.0361	0.0000	187.8136
Total	0.1670	1.3144	1.2918	2.2500e-003		0.0632	0.0632		0.0606	0.0606	0.0000	186.9121	186.9121	0.0361	0.0000	187.8136

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8300e-003	0.1224	0.0325	3.4000e-004	8.2900e-003	2.5000e-004	8.5400e-003	2.4000e-003	2.4000e-004	2.6400e-003	0.0000	32.3255	32.3255	1.3600e-003	0.0000	32.3594
Worker	0.0119	7.9200e-003	0.0871	2.9000e-004	0.0328	2.0000e-004	0.0330	8.7300e-003	1.9000e-004	8.9200e-003	0.0000	26.1935	26.1935	5.5000e-004	0.0000	26.2074
Total	0.0157	0.1303	0.1195	6.3000e-004	0.0411	4.5000e-004	0.0416	0.0111	4.3000e-004	0.0116	0.0000	58.5190	58.5190	1.9100e-003	0.0000	58.5668

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	0.0926	0.4723	1.3979	2.2500e-003		0.0196	0.0196		0.0196	0.0196	0.0000	186.9119	186.9119	0.0361	0.0000	187.8134

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Total	0.0926	0.4723	1.3979	2.2500e-003		0.0196	0.0196		0.0196	0.0196	0.0000	186.9119	186.9119	0.0361	0.0000	187.8134
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Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8300e-003	0.1224	0.0325	3.4000e-004	7.9400e-003	2.5000e-004	8.1900e-003	2.3100e-003	2.4000e-004	2.5500e-003	0.0000	32.3255	32.3255	1.3600e-003	0.0000	32.3594
Worker	0.0119	7.9200e-003	0.0871	2.9000e-004	0.0311	2.0000e-004	0.0313	8.3100e-003	1.9000e-004	8.5000e-003	0.0000	26.1935	26.1935	5.5000e-004	0.0000	26.2074
Total	0.0157	0.1303	0.1195	6.3000e-004	0.0391	4.5000e-004	0.0395	0.0106	4.3000e-004	0.0111	0.0000	58.5190	58.5190	1.9100e-003	0.0000	58.5668

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2682					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7500e-003	0.0465	0.0599	1.0000e-004		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.4257	8.4257	5.5000e-004	0.0000	8.4395
Total	0.2749	0.0465	0.0599	1.0000e-004		2.7000e-003	2.7000e-003		2.7000e-003	2.7000e-003	0.0000	8.4257	8.4257	5.5000e-004	0.0000	8.4395

Unmitigated Construction Off-Site

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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					
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	8.5000e-004	5.7000e-004	6.2400e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8791	1.8791	4.0000e-005	0.0000	1.8801
Total	8.5000e-004	5.7000e-004	6.2400e-003	2.0000e-005	2.3600e-003	1.0000e-005	2.3700e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8791	1.8791	4.0000e-005	0.0000	1.8801

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	0.2682					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.8000e-004	4.2500e-003	0.0605	1.0000e-004		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	8.4257	8.4257	5.5000e-004	0.0000	8.4394
Total	0.2692	4.2500e-003	0.0605	1.0000e-004		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	8.4257	8.4257	5.5000e-004	0.0000	8.4394

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					

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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	8.5000e-004	5.7000e-004	6.2400e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2500e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.8791	1.8791	4.0000e-005	0.0000	1.8801
Total	8.5000e-004	5.7000e-004	6.2400e-003	2.0000e-005	2.2300e-003	1.0000e-005	2.2500e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.8791	1.8791	4.0000e-005	0.0000	1.8801

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.0913	0.3154	0.8538	2.7000e-003	0.2449	2.2000e-003	0.2471	0.0656	2.0500e-003	0.0676	0.0000	247.4339	247.4339	8.9000e-003	0.0000	247.6564
Unmitigated	0.1007	0.3676	1.0956	3.7900e-003	0.3570	2.9900e-003	0.3600	0.0956	2.7800e-003	0.0983	0.0000	347.3002	347.3002	0.0115	0.0000	347.5870

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	170.64	170.64	170.64	394,111	270,360
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	66.36	66.36	66.36	158,584	108,789
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Strip Mall	264.55	264.55	264.55	407,416	279,487

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Total	501.55	501.55	501.55	960,111	658,636
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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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Enclosed Parking with Elevator	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
General Office Building	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Other Non-Asphalt Surfaces	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Strip Mall	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

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

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Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	37.2440	37.2440	6.3200e-003	1.3100e-003	37.7914
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	42.8445	42.8445	7.2700e-003	1.5000e-003	43.4742
NaturalGas Mitigated	1.3800e-003	0.0120	6.5000e-003	8.0000e-005		9.6000e-004	9.6000e-004		9.6000e-004	9.6000e-004	0.0000	13.6981	13.6981	2.6000e-004	2.5000e-004	13.7795
NaturalGas Unmitigated	1.7800e-003	0.0155	8.5600e-003	1.0000e-004		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	17.6140	17.6140	3.4000e-004	3.2000e-004	17.7186

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					
Apartments Mid Rise	233265	1.2600e-003	0.0108	4.5700e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4479	12.4479	2.4000e-004	2.3000e-004	12.5219
Enclosed Parking with Elevator	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
General Office Building	77544.7	4.2000e-004	3.8000e-003	3.1900e-003	2.0000e-005		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	4.1381	4.1381	8.0000e-005	8.0000e-005	4.1627
Other Non-Asphalt Surfaces	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
Strip Mall	19263.4	1.0000e-004	9.4000e-004	7.9000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0280	1.0280	2.0000e-005	2.0000e-005	1.0341
Total		1.7800e-003	0.0155	8.5500e-003	1.0000e-004		1.2300e-003	1.2300e-003		1.2300e-003	1.2300e-003	0.0000	17.6140	17.6140	3.4000e-004	3.3000e-004	17.7186

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					
Apartments Mid Rise	188841	1.0200e-003	8.7000e-003	3.7000e-003	6.0000e-005		7.0000e-004	7.0000e-004		7.0000e-004	7.0000e-004	0.0000	10.0773	10.0773	1.9000e-004	1.8000e-004	10.1372

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Enclosed Parking with Elevator	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	0.0000
General Office Building	54366.5	2.9000e-004	2.6700e-003	2.2400e-003	2.0000e-005	2.0000e-004	2.0000e-004	2.0000e-004	2.0000e-004	2.0000e-004	0.0000	2.9012	2.9012	6.0000e-005	5.0000e-005	2.9185
Other Non-Asphalt Surfaces	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	0.0000
Strip Mall	13484.4	7.0000e-005	6.6000e-004	5.6000e-004	0.0000	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	5.0000e-005	0.0000	0.7196	0.7196	1.0000e-005	1.0000e-005	0.7239
Total		1.3800e-003	0.0120	6.5000e-003	8.0000e-005	9.5000e-004	9.5000e-004	9.5000e-004	9.5000e-004	9.5000e-004	0.0000	13.6981	13.6981	2.6000e-004	2.4000e-004	13.7795

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	111465	8.6457	1.4700e-003	3.0000e-004	8.7728
Enclosed Parking with Elevator	269560	20.9082	3.5500e-003	7.3000e-004	21.2155
General Office Building	84460.7	6.5511	1.1100e-003	2.3000e-004	6.6474
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	86888.3	6.7394	1.1400e-003	2.4000e-004	6.8385
Total		42.8445	7.2700e-003	1.5000e-003	43.4742

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			

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Apartments Mid Rise	108770	8.4366	1.4300e-003	3.0000e-004	8.5606
Enclosed Parking with Elevator	215464	16.7123	2.8300e-003	5.9000e-004	16.9579
General Office Building	75777.8	5.8777	1.0000e-003	2.1000e-004	5.9640
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	80158.3	6.2174	1.0500e-003	2.2000e-004	6.3088
Total		37.2440	6.3100e-003	1.3200e-003	37.7914

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1922	3.2500e-003	0.2022	2.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	1.4085	1.4085	3.4000e-004	2.0000e-005	1.4229
Unmitigated	0.1922	3.2500e-003	0.2022	2.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	1.4085	1.4085	3.4000e-004	2.0000e-005	1.4229

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
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SubCategory	tons/yr								MT/yr							
Architectural Coating	0.0268					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Consumer Products	0.1591					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Hearth	1.1000e-004	9.3000e-004	4.0000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0786	1.0786	2.0000e-005	2.0000e-005	1.0850
Landscaping	6.1600e-003	2.3200e-003	0.2018	1.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	0.3299	0.3299	3.2000e-004	0.0000	0.3379
Total	0.1922	3.2500e-003	0.2022	2.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	1.4085	1.4085	3.4000e-004	2.0000e-005	1.4229

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	0.0268						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1591						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.1000e-004	9.3000e-004	4.0000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0786	1.0786	2.0000e-005	2.0000e-005	1.0850
Landscaping	6.1600e-003	2.3200e-003	0.2018	1.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	0.3299	0.3299	3.2000e-004	0.0000	0.3379
Total	0.1922	3.2500e-003	0.2022	2.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	1.4085	1.4085	3.4000e-004	2.0000e-005	1.4229

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.4303	0.0838	2.0300e-003	5.1297
Unmitigated	2.9025	0.1047	2.5300e-003	6.2747

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.75916 / 1.10903	1.5975	0.0575	1.3900e-003	3.4492
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.842458 / 0.516345	0.7610	0.0275	6.7000e-004	1.6477
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.60221 / 0.369096	0.5440	0.0197	4.8000e-004	1.1778
Total		2.9025	0.1047	2.5400e-003	6.2747

Mitigated

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	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	1.40733 / 1.10903	1.3382	0.0460	1.1100e-003	2.8204
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	0.673966 / 0.516345	0.6369	0.0220	5.3000e-004	1.3466
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.481768 / 0.369096	0.4552	0.0158	3.8000e-004	0.9626
Total		2.4303	0.0838	2.0200e-003	5.1297

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.5749	0.1522	0.0000	6.3793
Unmitigated	5.1499	0.3044	0.0000	12.7586

Appendix C

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	12.42	2.5212	0.1490	0.0000	6.2460
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	4.41	0.8952	0.0529	0.0000	2.2178
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.54	1.7335	0.1025	0.0000	4.2948
Total		5.1499	0.3044	0.0000	12.7586

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	6.21	1.2606	0.0745	0.0000	3.1230
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.205	0.4476	0.0265	0.0000	1.1089
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	4.27	0.8668	0.0512	0.0000	2.1474

Appendix C

Total		2.5749	0.1522	0.0000	6.3793
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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
