Greenhouse Gas Emissions Assessment

St. Mary's Double Roundabouts Project
Town of Moraga

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LIST OF ABBREVIATED TERMS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
BAAQMD	Bay Area Air Quality Management District
CAP	Climate Action Plan
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_2e	carbon dioxide equivalent
CFC	Chlorofluorocarbon
CPP	Clean Power Plan
CCSP	Climate Change Scoping Plan
cy	cubic yard
EPA	Environmental Protection Agency
FCAA	Federal Clean Air Act
FR	Federal Register
GHG	greenhouse gas
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LCFS	Low Carbon Fuel Standard
CH_4	Methane
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
$MTCO_2e$	million tons of carbon dioxide equivalent
NHTSA	National Highway Traffic Safety Administration
NF_3	nitrogen trifluoride
N_2O	nitrous oxide
PFC	Perfluorocarbon
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
Sf	square foot
SF_6	sulfur hexafluoride
TAC	toxic air contaminants

1 INTRODUCTION

This report documents the results of a Greenhouse Gas Emissions Assessment completed for the St. Mary's Road Double Roundabouts Project. The purpose of this Greenhouse Gas Emissions Assessment is to evaluate the Project's potential construction and operational emissions and determine the Project's level of impact on the environment.

1.1 PROJECT LOCATION

St. Mary's Road is a major north-south arterial that connects the Town of Moraga to the City of Lafayette in California. Figure 1: Regional Vicinity and Figure 2: Site Vicinity, depict the Project site in a regional and local context. St. Mary's Road is located just north of St. Mary's College campus and passes through grass-covered hills, intermixed with forested areas and riparian corridors. Trails and open space surround the project area, including the Lafayette/Moraga Regional Trail. The Lafayette/Moraga Regional Trail runs alongside St. Mary's Road, just to the north of it with riparian corridors between the trail and St. Mary's Road.

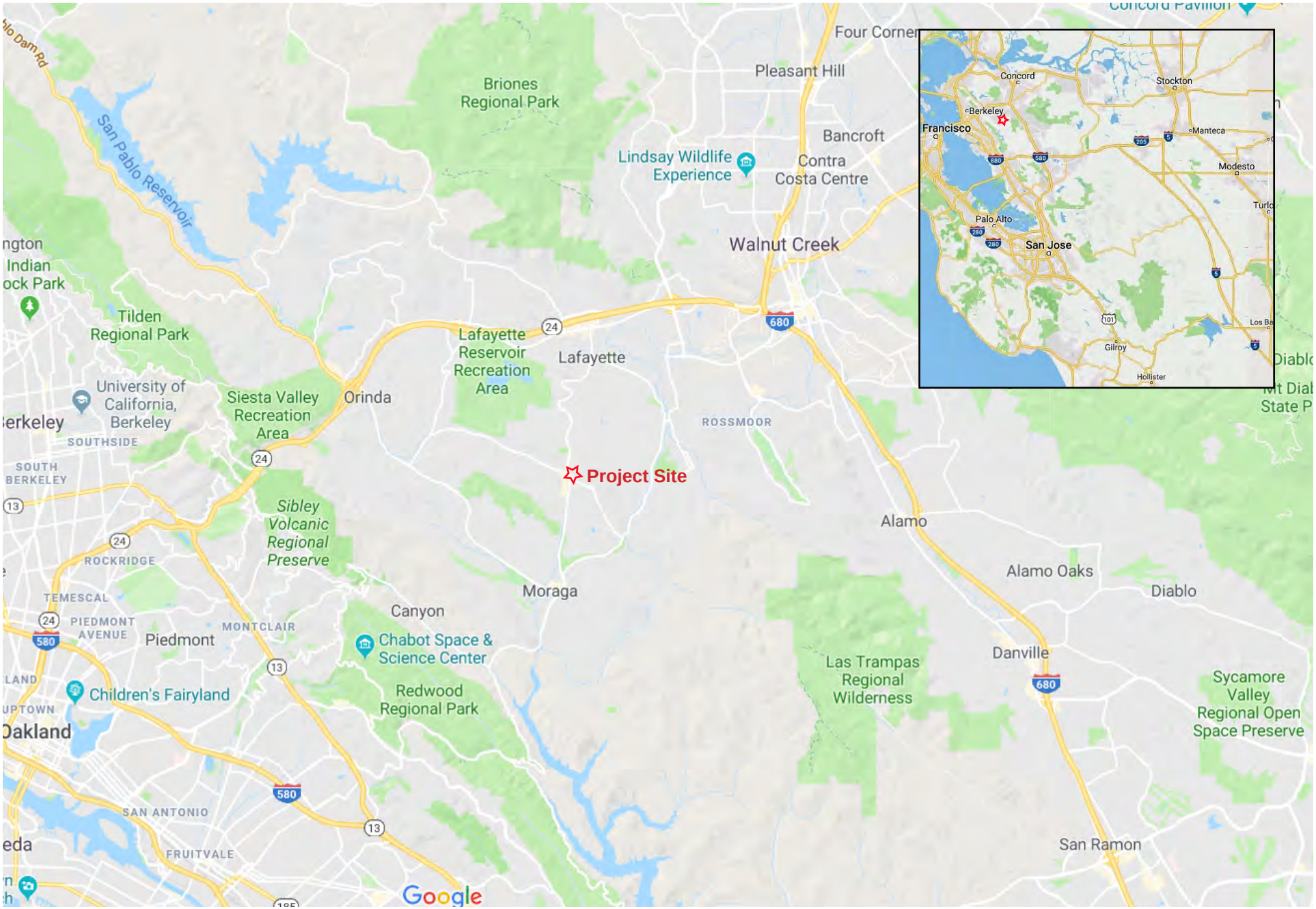
St. Mary's Road, through the project area, is currently a two-lane divided road with an unsignalized intersection at St. Mary's Road and Rheem Boulevard. St. Mary's Road, through the project area, splits off into Bollinger Canyon Road to the south, and continues onto St. Mary's Road to the north. Existing residential development is located to the east and west of the project area. North of St. Mary's Road is an open space area and south is a Pat Vincent Memorial Field and St. Mary's College.

1.2 PROJECT DESCRIPTION

The site plan for the Project is depicted on Figure 3: Site Plan. As proposed, the Project would provide improvements to the two intersections of St. Mary's Road / Rheem Boulevard and St. Mary's Road / Bollinger Canyon Road. The St. Mary's Double Roundabouts Project would improve traffic operations and pedestrian and bicycle access and safety. The Project would construct two roundabouts on St. Mary's Road at the Rheem Boulevard and Bollinger Canyon Road intersections, install green infrastructure, and create safer pedestrian and bicycle crossings. The purpose of the proposed Project is to provide congestion relief at the St. Mary's Road and Rheem Boulevard and to improve stopping sight distance and visibility at the Rheem Boulevard and Bollinger Canyon Road intersections. The Project is proposed to alleviate the current congestion, reduce intersection delays and queues, improve multimodal safety and to better accommodate pedestrian and bicycle traffic.

The travel lanes would be 12 feet wide. The proposed roundabout on St. Mary's Road/Rheem Boulevard would be 120 feet in diameter while the St. Mary's Road/Bollinger Canyon roundabout would be approximately 80 feet in diameter. Both roundabouts would have single-lane entries on all intersection approaches.

Construction is anticipated to begin in Summer 2021 and last approximately 12 months. St. Mary's Road would remain open during construction; however, there may be temporary lane closures on St. Mary's Road, Rheem Boulevard, and Bollinger Canyon Road during non-commute times, and there may be one-way traffic control at night during stage construction switchovers. Construction methods would include grading and paving.



Source: Google Maps, 2019

Figure 1: Regional Vicinity

St Mary's Double Roundabouts Project

Not to scale

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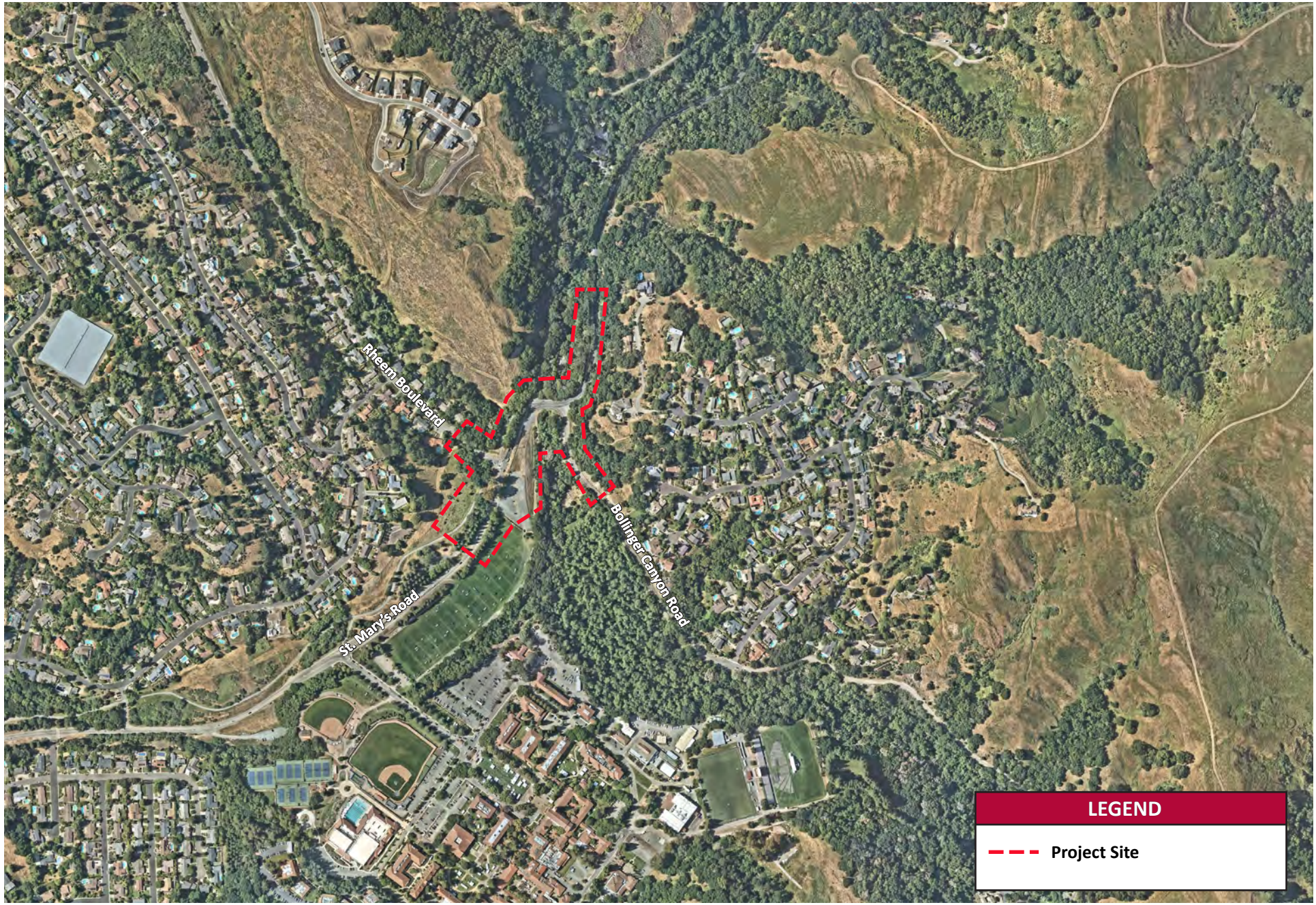
Expect More. Experience Better.



Source: NearMap, 2019

Figure 2: Site Vicinity

St Mary's Double Roundabouts Project

Not to scale

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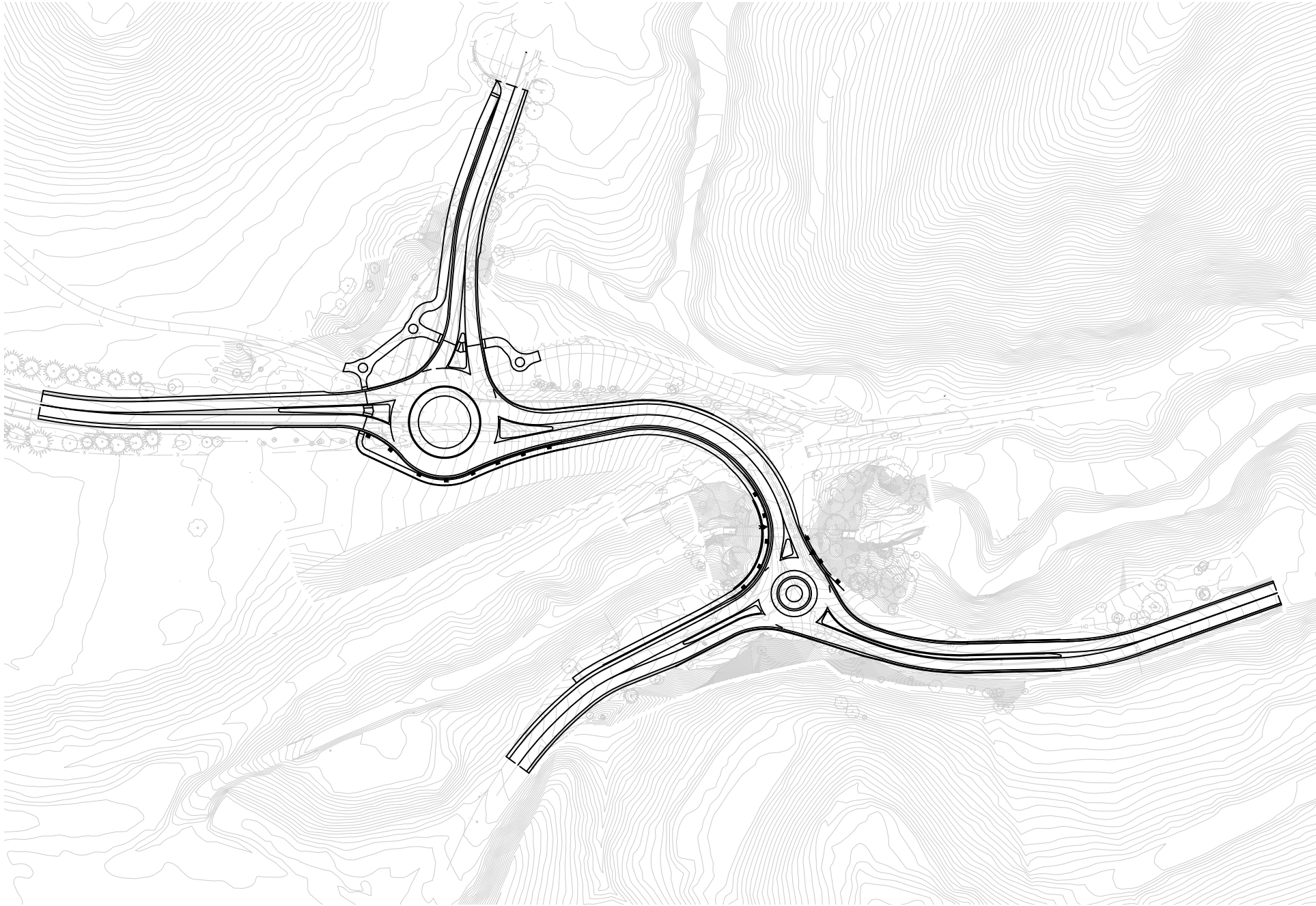

Source: Kimley-Horn, 2019

Figure 3: Site Plan

St Mary's Double Roundabouts Project

Not to scale

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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 (CO_2), methane (CH_4), and nitrous oxide (N_2O). 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 (SF_6), and nitrogen trifluoride (NF_3); 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 CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO_2 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 CO_2 emissions remains stored in the atmosphere[1]. Table 1: Description of Greenhouse Gases, describes the primary GHGs attributed to global climate change, including their physical properties.

[1] Intergovernmental Panel on Climate Change, *Carbon and Other Biogeochemical Cycles. In: 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. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

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_2O)	N_2O is largely attributable to agricultural practices and soil management. Primary human-related sources of N_2O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N_2O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years. The Global Warming Potential of N_2O 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.
Hydrofluoro-carbons (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.
Chlorofluoro-carbons (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.
Hydrochlorofluoro-carbons (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, *Overview of Greenhouse Gases*, April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018; Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007; National Research Council, Advancing the Science of Climate Change, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, 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 (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) 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 CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were

achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. 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 CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 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 CO_2 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, the President and the EPA stated their intent to halt various federal regulatory activities to reduce GHG emission, 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 currently speculative.

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 CO_2 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 CO_2 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 CO_2, N_2O, and CH_4.

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 CO_2 equivalents (CO_2e) in the world and produced 459 million gross metric tons of CO_2e in 2013. In California, 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 Assembly Bill (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 provisions of the 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")[2]. 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[3]. 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.

[2] CARB defines business-as-usual (BAU) in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB's definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

[3] The Climate Action Team, led by the secretary of the California Environmental Protection Agency, is a group of State agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the State's Climate Adaptation Strategy.

- 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 CO_2e ($MMTCO_2e$) to 545 $MMTCO_2e$. 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 (CARB, 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 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 CO_2e 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 CO_2 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 CO_2e ($MMTCO_2e$). 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 PM_{10} 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

Town of Moraga Climate Action Plan

The Town of Moraga's Climate Action Plan (CAP) was first published in October 2014. The CAP identifies policies that will achieve a GHG reduction target of 15 percent below 2005 levels by the year 2020. The goal is to bring community-wide emissions down to 79,854 $MTCO_2e$. The CAP provides goals and associated measures, also referred to as reduction measures, in the sectors of energy use, transportation, land use, water, solid waste, and off-road equipment. In 2012, the Town also created a Climate Action Plan Task Force, a citizen's committee tasked with assisting the Town to develop feasible GHG reduction goals and the CAP.

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:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The BAAQMD's 2017 CEQA Air Quality Guidelines provide significance thresholds for project GHG emissions that are used by the City of Cupertino. If the BAAQMD thresholds are exceeded, a potentially significant impact could result. These thresholds are substantiated in the Options and Justification Report (dated October 2009) prepared by the BAAQMD. These recommendations represent the best available science on the subject of what constitutes a significant GHG effect on climate change for this project. BAAQMD's recommended thresholds are as follows:

- Compliance with a Qualified Climate Action Plan or
- Meet one of the following thresholds:
  - 1,100 MT CO_2e/year (yr); or
  - 4.6 MTCO_2e/service population (sp)/yr (residents and employees)

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, as a roadway, would not generate operations-related GHG emissions.

5 POTENTIAL IMPACTS AND MITIGATION

5.1 GREENHOUSE GAS EMISSIONS

Threshold 5.1 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

The proposed Project would result in direct GHG emissions from construction-related activities. The approximate daily GHG emissions generated by construction equipment utilized to build the proposed Project are included in Table 2: Construction-Related Greenhouse Gas Emission.

Table 2: Construction-Related Greenhouse Gas Emission

Category	$MTCO_2e$
Total Construction Emissions	239
30-Year Amortized Construction	8

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 239 $MTCO_2e$ of GHG emissions over the course of construction. Construction GHG emissions are typically summed and amortized over the Project's lifetime (assumed to be 30 years), then added to the operational emissions.[4] The amortized Project emissions would be 8 $MTCO_2e$ per year. Once construction is complete, the generation of construction-related GHG emissions would cease.

Long-Term Operational Greenhouse Gas Emissions

The proposed Project includes two roundabouts and pedestrian and bicycle facilities improvements. The Project would not generate any new automobile, bicycle, or pedestrian traffic and the effects to existing vehicle distribution and travel speeds would be nominal. The Project would not increase roadway capacity and would alleviate current congestion, reduce intersection delays and queues, improve multimodal safety, and better accommodate pedestrian and bicycle traffic. The proposed Project does not include any new traffic and no buildings are proposed to be constructed. Therefore, the Project would not generate any new operational emissions. Impacts would be less than significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

[4] The 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).

5.2 GREENHOUSE GAS REDUCTION PLAN COMPLIANCE

Threshold 5.2 Would the Project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions?

In 2014, the Town of Moraga adopted a Climate Action Plan (CAP) to improve energy efficiency and reduce GHG emissions. As discussed above the CAP identifies policies that will achieve a GHG reduction target of 15 percent below 2005 levels by the year 2020. The goal is to bring community-wide emissions down to 79,854 MTCO2e. The CAP provides goals and associated measures, also referred to as reduction measures, in the sectors of energy use, transportation, land use, water, solid waste, and off-road equipment. In 2012, the Town also created a Climate Action Plan Task Force, a citizen's committee tasked with assisting the Town to develop feasible GHG reduction goals and the CAP.

Concerning Executive Order S-3-05's 2050 goals, it is presently not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed. Nevertheless, it can be anticipated that Project operations would be subject to compliance with all applicable measures that State lawmakers have enacted and that would lead to an 80 percent reduction below 1990 levels by 2050.

The proposed Project demonstrates consistency with the General Plan, CAP goals and measures. The design concept and scope of the Project is consistent with the project description in the CIP and is intended to meet the traffic needs in the area based on local land use plans. The Project 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.

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 proposed 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 proposed Project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. The Project proposes two roundabouts and would not increase roadway capacity. The Project would alleviate current congestion, reduce intersection delays and queues, improve multimodal safety, and better accommodate

pedestrian and bicycle traffic. The Project would not generate increased emissions for new vehicle traffic and would potentially improve emissions from reduced idling and delay. 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 Resources Board, *Climate Change Proposed Scoping Plan*. 2008.
5. California Air Resources Board, *California Greenhouse Gas Inventory for 2000-2010 — by Category Defined in the Scoping Plan*, 2013.
6. California Air Resources Board, *California Greenhouse Gas Emissions Inventory – 2017 Edition*, 2017.
7. California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* 2017.
8. Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, 2007.
9. 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.
10. National Research Council, *Advancing the Science of Climate Change*, 2010.
11. Town of Moraga, *Climate Action Plan,* 2014.
12. U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018.
13. U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, 2010.
14. U.S. EPA, *Overview of Greenhouse Gases*, 2018.

Appendix A

Greenhouse Gas Emissions Data

St. Mary's Roundabout - Contra Costa County, Annual

St. Mary's Roundabout

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	2.20	Acre	2.20	95,832.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Anticipated construction schedule

Off-road Equipment -

Off-road Equipment - equipment use

Off-road Equipment -

Demolition -

Grading -

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

Vehicle Trips -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	3.00	33.00
tblConstructionPhase	NumDays	6.00	80.00
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	NumDays	10.00	80.00
tblConstructionPhase	NumDays	10.00	36.00
tblConstructionPhase	PhaseEndDate	9/28/2021	7/15/2021
tblConstructionPhase	PhaseEndDate	10/1/2021	8/31/2021
tblConstructionPhase	PhaseEndDate	10/11/2021	12/21/2021
tblConstructionPhase	PhaseEndDate	8/15/2022	10/11/2021
tblConstructionPhase	PhaseEndDate	8/29/2022	4/12/2022
tblConstructionPhase	PhaseEndDate	9/12/2022	6/1/2022
tblConstructionPhase	PhaseStartDate	9/1/2021	6/1/2021
tblConstructionPhase	PhaseStartDate	9/29/2021	7/16/2021
tblConstructionPhase	PhaseStartDate	10/2/2021	9/1/2021
tblConstructionPhase	PhaseStartDate	8/16/2022	12/22/2021
tblConstructionPhase	PhaseStartDate	8/30/2022	4/13/2022
tblGrading	MaterialExported	0.00	1,096.00
tblGrading	MaterialImported	0.00	1,495.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1404	1.5452	0.8855	1.9500e-003	0.3242	0.0680	0.3922	0.1442	0.0628	0.2070	0.0000	172.6651	172.6651	0.0467	0.0000	173.8324
2022	0.0621	0.3626	0.4681	7.4000e-004	5.4200e-003	0.0191	0.0245	1.4400e-003	0.0177	0.0191	0.0000	64.8521	64.8521	0.0181	0.0000	65.3043
Maximum	**0.1404**	**1.5452**	**0.8855**	**1.9500e-003**	**0.3242**	**0.0680**	**0.3922**	**0.1442**	**0.0628**	**0.2070**	**0.0000**	**172.6651**	**172.6651**	**0.0467**	**0.0000**	**173.8324**

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	0.1404	1.5452	0.8855	1.9500e-003	0.1441	0.0680	0.2121	0.0632	0.0628	0.1259	0.0000	172.6649	172.6649	0.0467	0.0000	173.8322
2022	0.0621	0.3626	0.4681	7.4000e-004	5.1400e-003	0.0191	0.0242	1.3700e-003	0.0177	0.0191	0.0000	64.8520	64.8520	0.0181	0.0000	65.3042
Maximum	**0.1404**	**1.5452**	**0.8855**	**1.9500e-003**	**0.1441**	**0.0680**	**0.2121**	**0.0632**	**0.0628**	**0.1259**	**0.0000**	**172.6649**	**172.6649**	**0.0467**	**0.0000**	**173.8322**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**54.72**	**0.01**	**43.29**	**55.70**	**0.00**	**35.88**	**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	9-1-2021	11-30-2021	0.7181	0.7181
2	12-1-2021	2-28-2022	0.4278	0.4278
3	3-1-2022	5-31-2022	0.2084	0.2084
4	6-1-2022	8-31-2022	0.0010	0.0010
		Highest	0.7181	0.7181

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	8.2000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2000e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

Mitigated Operational

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

Area	8.2000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.2000e-003**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

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

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	6/1/2021	7/15/2021	5	33	
2	Site Preparation	Site Preparation	7/16/2021	8/31/2021	5	33	
3	Grading	Grading	9/1/2021	12/21/2021	5	80	
4	Building Construction	Building Construction	10/12/2021	10/11/2021	5	0	
5	Paving	Paving	12/22/2021	4/12/2022	5	80	
6	Architectural Coating	Architectural Coating	4/13/2022	6/1/2022	5	36	

Acres of Grading (Site Preparation Phase): 49.5

Acres of Grading (Grading Phase): 40

Acres of Paving: 2.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 5,750

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
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
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
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	234.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	256.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	40.00	16.00	0.00	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

Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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					0.0254	0.0000	0.0254	3.8400e-003	0.0000	3.8400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0329	0.3250	0.2391	4.0000e-004		0.0172	0.0172		0.0160	0.0160	0.0000	34.7677	34.7677	8.8900e-003	0.0000	34.9900
Total	**0.0329**	**0.3250**	**0.2391**	**4.0000e-004**	**0.0254**	**0.0172**	**0.0425**	**3.8400e-003**	**0.0160**	**0.0199**	**0.0000**	**34.7677**	**34.7677**	**8.8900e-003**	**0.0000**	**34.9900**

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	9.1000e-004	0.0313	6.2100e-003	9.0000e-005	1.9800e-003	1.0000e-004	2.0800e-003	5.4000e-004	9.0000e-005	6.4000e-004	0.0000	8.7624	8.7624	3.8000e-004	0.0000	8.7720

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	6.6000e-004	4.6000e-004	4.9100e-003	2.0000e-005	1.7000e-003	1.0000e-005	1.7100e-003	4.5000e-004	1.0000e-005	4.6000e-004	0.0000	1.4396	1.4396	3.0000e-005	0.0000	1.4404
Total	**1.5700e-003**	**0.0318**	**0.0111**	**1.1000e-004**	**3.6800e-003**	**1.1000e-004**	**3.7900e-003**	**9.9000e-004**	**1.0000e-004**	**1.1000e-003**	**0.0000**	**10.2020**	**10.2020**	**4.1000e-004**	**0.0000**	**10.2124**

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					0.0108	0.0000	0.0108	1.6400e-003	0.0000	1.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0329	0.3250	0.2391	4.0000e-004		0.0172	0.0172		0.0160	0.0160	0.0000	34.7677	34.7677	8.8900e-003	0.0000	34.9899
Total	**0.0329**	**0.3250**	**0.2391**	**4.0000e-004**	**0.0108**	**0.0172**	**0.0280**	**1.6400e-003**	**0.0160**	**0.0177**	**0.0000**	**34.7677**	**34.7677**	**8.8900e-003**	**0.0000**	**34.9899**

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	9.1000e-004	0.0313	6.2100e-003	9.0000e-005	1.8900e-003	1.0000e-004	1.9900e-003	5.2000e-004	9.0000e-005	6.2000e-004	0.0000	8.7624	8.7624	3.8000e-004	0.0000	8.7720
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	6.6000e-004	4.6000e-004	4.9100e-003	2.0000e-005	1.6100e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4396	1.4396	3.0000e-005	0.0000	1.4404
Total	**1.5700e-003**	**0.0318**	**0.0111**	**1.1000e-004**	**3.5000e-003**	**1.1000e-004**	**3.6100e-003**	**9.5000e-004**	**1.0000e-004**	**1.0600e-003**	**0.0000**	**10.2020**	**10.2020**	**4.1000e-004**	**0.0000**	**10.2124**

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					0.0263	0.0000	0.0263	2.8300e-003	0.0000	2.8300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0255	0.3017	0.1774	4.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	35.5186	35.5186	0.0115	0.0000	35.8058
Total	**0.0255**	**0.3017**	**0.1774**	**4.0000e-004**	**0.0263**	**0.0116**	**0.0378**	**2.8300e-003**	**0.0107**	**0.0135**	**0.0000**	**35.5186**	**35.5186**	**0.0115**	**0.0000**	**35.8058**

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	9.9000e-004	0.0343	6.7900e-003	1.0000e-004	2.1700e-003	1.1000e-004	2.2800e-003	6.0000e-004	1.0000e-004	7.0000e-004	0.0000	9.5863	9.5863	4.2000e-004	0.0000	9.5968
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	4.1000e-004	2.9000e-004	3.0200e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8859	0.8859	2.0000e-005	0.0000	0.8864
Total	**1.4000e-003**	**0.0346**	**9.8100e-003**	**1.1000e-004**	**3.2200e-003**	**1.2000e-004**	**3.3300e-003**	**8.8000e-004**	**1.1000e-004**	**9.8000e-004**	**0.0000**	**10.4721**	**10.4721**	**4.4000e-004**	**0.0000**	**10.4832**

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					0.0112	0.0000	0.0112	1.2100e-003	0.0000	1.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0255	0.3017	0.1774	4.0000e-004		0.0116	0.0116		0.0107	0.0107	0.0000	35.5186	35.5186	0.0115	0.0000	35.8058
Total	**0.0255**	**0.3017**	**0.1774**	**4.0000e-004**	**0.0112**	**0.0116**	**0.0228**	**1.2100e-003**	**0.0107**	**0.0119**	**0.0000**	**35.5186**	**35.5186**	**0.0115**	**0.0000**	**35.8058**

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	9.9000e-004	0.0343	6.7900e-003	1.0000e-004	2.0700e-003	1.1000e-004	2.1800e-003	5.7000e-004	1.0000e-004	6.8000e-004	0.0000	9.5863	9.5863	4.2000e-004	0.0000	9.5968
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	4.1000e-004	2.9000e-004	3.0200e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8859	0.8859	2.0000e-005	0.0000	0.8864
Total	**1.4000e-003**	**0.0346**	**9.8100e-003**	**1.1000e-004**	**3.0600e-003**	**1.2000e-004**	**3.1800e-003**	**8.4000e-004**	**1.1000e-004**	**9.5000e-004**	**0.0000**	**10.4721**	**10.4721**	**4.4000e-004**	**0.0000**	**10.4832**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2621	0.0000	0.2621	0.1347	0.0000	0.1347	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0731	0.8085	0.3904	8.2000e-004		0.0366	0.0366		0.0337	0.0337	0.0000	72.4155	72.4155	0.0234	0.0000	73.0011
Total	**0.0731**	**0.8085**	**0.3904**	**8.2000e-004**	**0.2621**	**0.0366**	**0.2987**	**0.1347**	**0.0337**	**0.1684**	**0.0000**	**72.4155**	**72.4155**	**0.0234**	**0.0000**	**73.0011**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	8.7000e-004	9.1600e-003	3.0000e-005	3.1700e-003	2.0000e-005	3.1900e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.6845	2.6845	6.0000e-005	0.0000	2.6860
Total	**1.2400e-003**	**8.7000e-004**	**9.1600e-003**	**3.0000e-005**	**3.1700e-003**	**2.0000e-005**	**3.1900e-003**	**8.4000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.6845**	**2.6845**	**6.0000e-005**	**0.0000**	**2.6860**

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					0.1120	0.0000	0.1120	0.0576	0.0000	0.0576	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0731	0.8085	0.3904	8.2000e-004		0.0366	0.0366		0.0337	0.0337	0.0000	72.4154	72.4154	0.0234	0.0000	73.0010
Total	**0.0731**	**0.8085**	**0.3904**	**8.2000e-004**	**0.1120**	**0.0366**	**0.1487**	**0.0576**	**0.0337**	**0.0913**	**0.0000**	**72.4154**	**72.4154**	**0.0234**	**0.0000**	**73.0010**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	8.7000e-004	9.1600e-003	3.0000e-005	3.0100e-003	2.0000e-005	3.0300e-003	8.0000e-004	2.0000e-005	8.2000e-004	0.0000	2.6845	2.6845	6.0000e-005	0.0000	2.6860
Total	**1.2400e-003**	**8.7000e-004**	**9.1600e-003**	**3.0000e-005**	**3.0100e-003**	**2.0000e-005**	**3.0300e-003**	**8.0000e-004**	**2.0000e-005**	**8.2000e-004**	**0.0000**	**2.6845**	**2.6845**	**6.0000e-005**	**0.0000**	**2.6860**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

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

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Mitigated Construction Off-Site

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

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 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	4.2500e-003	0.0426	0.0471	7.0000e-005		2.3300e-003	2.3300e-003		2.1500e-003	2.1500e-003	0.0000	6.2019	6.2019	1.9700e-003	0.0000	6.2511
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5400e-003**	**0.0426**	**0.0471**	**7.0000e-005**		**2.3300e-003**	**2.3300e-003**		**2.1500e-003**	**2.1500e-003**	**0.0000**	**6.2019**	**6.2019**	**1.9700e-003**	**0.0000**	**6.2511**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.3000e-004	1.3700e-003	0.0000	4.8000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4027	0.4027	1.0000e-005	0.0000	0.4029
Total	**1.9000e-004**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.8000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4027**	**0.4027**	**1.0000e-005**	**0.0000**	**0.4029**

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	4.2500e-003	0.0426	0.0471	7.0000e-005		2.3300e-003	2.3300e-003		2.1500e-003	2.1500e-003	0.0000	6.2019	6.2019	1.9700e-003	0.0000	6.2511
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.5400e-003**	**0.0426**	**0.0471**	**7.0000e-005**		**2.3300e-003**	**2.3300e-003**		**2.1500e-003**	**2.1500e-003**	**0.0000**	**6.2019**	**6.2019**	**1.9700e-003**	**0.0000**	**6.2511**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.3000e-004	1.3700e-003	0.0000	4.5000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.4027	0.4027	1.0000e-005	0.0000	0.4029
Total	**1.9000e-004**	**1.3000e-004**	**1.3700e-003**	**0.0000**	**4.5000e-004**	**0.0000**	**4.5000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.4027**	**0.4027**	**1.0000e-005**	**0.0000**	**0.4029**

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Off-Road	0.0339	0.3360	0.4211	6.4000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	55.8361	55.8361	0.0177	0.0000	56.2786
Paving	2.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0365**	**0.3360**	**0.4211**	**6.4000e-004**		**0.0176**	**0.0176**		**0.0162**	**0.0162**	**0.0000**	**55.8361**	**55.8361**	**0.0177**	**0.0000**	**56.2786**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5500e-003	1.0500e-003	0.0114	4.0000e-005	4.2800e-003	3.0000e-005	4.3100e-003	1.1400e-003	3.0000e-005	1.1600e-003	0.0000	3.4895	3.4895	7.0000e-005	0.0000	3.4914
Total	**1.5500e-003**	**1.0500e-003**	**0.0114**	**4.0000e-005**	**4.2800e-003**	**3.0000e-005**	**4.3100e-003**	**1.1400e-003**	**3.0000e-005**	**1.1600e-003**	**0.0000**	**3.4895**	**3.4895**	**7.0000e-005**	**0.0000**	**3.4914**

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	0.0339	0.3360	0.4211	6.4000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	55.8361	55.8361	0.0177	0.0000	56.2785
Paving	2.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0365**	**0.3360**	**0.4211**	**6.4000e-004**		**0.0176**	**0.0176**		**0.0162**	**0.0162**	**0.0000**	**55.8361**	**55.8361**	**0.0177**	**0.0000**	**56.2785**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5500e-003	1.0500e-003	0.0114	4.0000e-005	4.0600e-003	3.0000e-005	4.0900e-003	1.0800e-003	3.0000e-005	1.1100e-003	0.0000	3.4895	3.4895	7.0000e-005	0.0000	3.4914
Total	**1.5500e-003**	**1.0500e-003**	**0.0114**	**4.0000e-005**	**4.0600e-003**	**3.0000e-005**	**4.0900e-003**	**1.0800e-003**	**3.0000e-005**	**1.1100e-003**	**0.0000**	**3.4895**	**3.4895**	**7.0000e-005**	**0.0000**	**3.4914**

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	0.0200					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0254	0.0326	5.0000e-005		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	4.5959	4.5959	3.0000e-004	0.0000	4.6033
Total	**0.0237**	**0.0254**	**0.0326**	**5.0000e-005**		**1.4700e-003**	**1.4700e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**4.5959**	**4.5959**	**3.0000e-004**	**0.0000**	**4.6033**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.8000e-004	3.0300e-003	1.0000e-005	1.1400e-003	1.0000e-005	1.1500e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	0.9305	0.9305	2.0000e-005	0.0000	0.9310
Total	**4.1000e-004**	**2.8000e-004**	**3.0300e-003**	**1.0000e-005**	**1.1400e-003**	**1.0000e-005**	**1.1500e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**0.9305**	**0.9305**	**2.0000e-005**	**0.0000**	**0.9310**

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	0.0200					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6800e-003	0.0254	0.0326	5.0000e-005		1.4700e-003	1.4700e-003		1.4700e-003	1.4700e-003	0.0000	4.5959	4.5959	3.0000e-004	0.0000	4.6033
Total	**0.0237**	**0.0254**	**0.0326**	**5.0000e-005**		**1.4700e-003**	**1.4700e-003**		**1.4700e-003**	**1.4700e-003**	**0.0000**	**4.5959**	**4.5959**	**3.0000e-004**	**0.0000**	**4.6033**

Mitigated Construction Off-Site

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.8000e-004	3.0300e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9305	0.9305	2.0000e-005	0.0000	0.9310
Total	**4.1000e-004**	**2.8000e-004**	**3.0300e-003**	**1.0000e-005**	**1.0800e-003**	**1.0000e-005**	**1.0900e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9305**	**0.9305**	**2.0000e-005**	**0.0000**	**0.9310**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles	Trip %	Trip Purpose %

Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.586711	0.038259	0.185486	0.120728	0.016377	0.005053	0.010699	0.024311	0.001622	0.001773	0.005406	0.002738	0.000835

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Land Use	kBTU/yr	tons/yr										MT/yr					
Other 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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.2000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	8.2000e-003	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.0000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**8.1900e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.0000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.1900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	**8.1900e-003**	**0.0000**	**2.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0000**	**4.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

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

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation