

# Greenhouse Gas Emissions Assessment

---

## Block 21 Mixed-Use Project

San Mateo, California

### Prepared For:

David J. Powers & Associates, Inc.  
1736 Franklin Street, Suite 300  
Oakland, CA 94612

### Prepared By:



55 Hanover Land, Suite A  
Chico, California 95973

**December 2021**

**CONTENTS**

1.0 INTRODUCTION ..... 1

    1.1 Project Location ..... 1

    1.2 Project Description ..... 2

2.0 Greenhouse Gas emissions ..... 4

    2.1 Greenhouse Gas Setting ..... 4

        2.1.1 Sources of Greenhouse Gas Emissions ..... 5

    2.2 Regulatory Framework ..... 6

        2.2.1 State ..... 6

        2.2.2 Local ..... 8

    2.3 Greenhouse Gas Emissions Impact Assessment ..... 10

        2.3.1 Thresholds of Significance ..... 10

        2.3.2 Methodology ..... 13

        2.3.3 Impact Analysis ..... 13

3.0 REFERENCES ..... 25

**LIST OF TABLES**

Table 3-1. Greenhouse Gases ..... 5

Table 3-2. Construction-Related Greenhouse Gas Emissions ..... 21

Table 3-3. Operational-Related Greenhouse Gas Emissions ..... 23

**LIST OF ATTACHMENTS**

Attachment A – CalEEMod Output File for Greenhouse Gas Emissions

**LIST OF ACRONYMS AND ABBREVIATIONS**

<b>Term</b>	<b>Description</b>
°F	Degrees Fahrenheit
µg/m <sup>3</sup>	Micrograms per cubic meter; ppm = parts per million
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AEP	Association of Environmental Planners
AQMD	Air Quality Management District
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board

**LIST OF ACRONYMS AND ABBREVIATIONS**

CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH <sub>4</sub>	Methane
BAAQMD	Bay Area Air Quality Management District
CEQA	California Environmental Quality Act
City	City of San Mateo
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
County	San Mateo County
EO	Executive Order
GHG	Greenhouse gas
GWP	Global warming potential
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers'
MTCO <sub>2</sub> e	Metric Tons of Carbon Dioxide Equivalents
N <sub>2</sub> O	Nitrous oxide
Project	Block 21 Mixed-Use Project
RTP	Regional Transportation Plan
SB	Senate Bill
SCS	Sustainable Communities Strategy
SFBAAB	San Francisco Bay Area Air Basin
SR	State Route
TDM	Transportation Demand Management
USEPA	U.S. Environmental Protection Agency
VMT	Vehicle Miles Traveled

## **1.0 INTRODUCTION**

This report documents the results of a Greenhouse Gas (GHG) Emissions Assessment completed for the Block 21 Mixed-Use Project (Project), which includes the demolition of all the existing buildings onsite, which include commercial, restaurant, residential and auto-related uses, and the construction of a new six-story 271,328 square foot mixed-use office/residential building and associated features in the City of San Mateo (City), California. This assessment is based on the methodology recommended by the City of San Mateo and the Bay Area Air Quality Management District (BAAQMD) for project-level review and was prepared with consideration of the emissions reduction actions proposed by the Project. The purpose of this assessment is to estimate Project-generated GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

### **1.1 Project Location**

The approximate 1.51-acre Project Site constitutes the block bounded by East 3<sup>rd</sup> Avenue to the northwest, South Delaware Street to the northeast, East 4<sup>th</sup> Avenue to the southeast, and South Claremont Street to the southwest. The Project Site is surrounded by a mix of commercial, residential, and food service uses. More specifically, the Project Site is bounded by restaurant uses along East 3<sup>rd</sup> Avenue to the north and northwest; a restaurant, retail commercial, and gas station uses along South Delaware Street to the east and northeast; a restaurant and gas station fronting East 4<sup>th</sup> Avenue to the south and southeast; and a newly constructed mixed-use building across South Claremont Street (the 406 E. 3<sup>rd</sup> Avenue Project is currently under construction across South Claremont Street from the Proposed Project Site). Structures adjacent to the Project site range between one and three stories. There are existing single-family neighborhoods located to the north and east, and the Downtown San Mateo Caltrain Station is located less than ¼ mile northwest of the Project Site. At this location, Caltrain provides for local, limited and Baby Bullet service.

The Project Site consists of eleven parcels made up of a variety of uses, including automotive and food services, general retail, and single-family residences. There is a cluster of trees in the center of the Project site, and street trees are located along all four sides of the block. The Project Site has a General Plan Designation of Downtown Retail Core Support, which is intended to provide a range of retail, service, office, and residential uses. High-density office and high-density residential uses are encouraged above the ground floor in the downtown area. This land use designation permits high-density multi-family residential buildings with densities ranging from 36 to 50 units per acre and a maximum building height of 55 feet. The Project Site is zoned, Central Business District Support (CBD/S). The purpose of the CBD/S district is to encourage commercial uses that support downtown uses and serves adjacent single-family residential neighborhoods. Regional and community commercial uses are unconditionally permitted in CBD/S district. Residential uses are conditionally permitted within this zoning district when there are multiple-family dwellings that are part of a mixed-use development.

## 1.2 Project Description

The Project proposes the demolition of all the existing building space currently onsite (totaling approximately 32,871 square feet in size) and associated surface parking lots to make way for the construction of a 271,328 square foot, six-story mixed use building (approximately 72"10" feet in height) with two levels of below-grade parking accommodating 407 onsite parking spaces. The proposed office space, totaling 180,950 square feet, would be contained in the lower five floors of the six-story building, though the office components on the 4<sup>th</sup> and 5<sup>th</sup> floors would be relatively small. The proposed residences, which are proposed to number 111 rental units (53 studio and 58 1-bedroom units), would be concentrated on the 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> floors. The Project proposes to include Below Market Units (BMR) in accordance with the City of San Mateo BMR Ordinance (15 percent Very Low-Income).

Primary entries to the building would be provided on East 3rd Avenue and on the corner of East 4th Avenue and South Delaware Street. These entries would include larger lobbies and would be oriented toward downtown to draw pedestrians specifically coming to and from the core of downtown and the train station to the north. Signage proposed as part of the building would likely be a metal material to complement the building materials. Street trees, along with pedestrian amenities would be provided along the Project frontages to enhance the streetscape.

The below-grade parking garage would contain 407 onsite parking spaces (355 spaces to serve the office uses and 56 to serve the residential uses) within two subterranean levels and would also include bicycle parking, in accordance with City standards, as well as building storage and electrical equipment rooms. The first parking level ("Level B1") would provide 203 parking spaces and the second parking level ("Level B2") would be accessible to vehicles from Level B1 by a centrally located ramp and would provide 148 parking spaces. 129 long-term bicycle parking spaces would be provided within rooms located on the ground floor and Level B1, and 15 short-term spaces would be provided via bicycle racks located along the Project's East 3<sup>rd</sup> Avenue frontage. In total, the parking garage would be approximately 128,692 square feet in size. The parking for the proposed office uses is provided at ratio of 1.94 spaces per 1,000 square feet in accordance with the anticipated parking demand as demonstrated by recently approved office projects in the Project Area. The Project proposes to make the office parking contained in the garage available for public use during the evenings and weekends. The parking could function similarly to public garages in downtown and other buildings in downtown that offer private parking for public use.

Pedestrian access to the Project Site would be provided via new sidewalks constructed along the Project frontage that would range between approximately 14 and 25 feet in width. Office employees would enter the building through either the office lobby in the eastern corner, the office elevator lobby in the western corner, or via a stairwell located in the northern corner of the building (changing rooms and showers would be provided for office commuters). Residents would primarily access the building via the residential lobby located in the southern corner of the Project Site, or via the northern stairwell. Employees and residents traveling from the underground parking garage could access the office and residential floors via elevators and stairwells.

Bicycle access to the Project Site would be provided via existing bicycle routes located along South Delaware Street, South Claremont Street, and East 3<sup>rd</sup> Avenue from the east. A new protected bike lane

would be constructed by the Project along the site's East 3<sup>rd</sup> Avenue and South Delaware Street frontage. As previously stated, 129 long-term bicycle parking spaces would be provided within rooms located on the ground floor and Level B1, and 15 short-term spaces would be provided via bicycle racks located along the Project's East 3<sup>rd</sup> Avenue frontage. Changing rooms and showers would be provided for office commuters.

The Project would be designed for energy efficiency and water conservation in accordance with the 2019 California Green Building Standards Code (CALGreen). This includes mandatory installation of electric vehicle charging stations, low-flow plumbing fixtures, and low-water use landscaping. In addition, photovoltaic panels would be installed on the rooftop, Energy Star appliances would be provided in the units, and windows would utilize low-emissivity glass. The Project would conform to the City's Reach Code (Municipal Code Chapter 23.24), which requires new residential buildings to be all-electric with a higher energy efficiency than what is required by CALGreen standards.

The Project proposes to include a Transportation Demand Management (TDM) Plan to decrease in the number of automobile trips generated and parking demand compared to typical projects of this use and size similar to the TDM Plans prepared for the nearby 405 E. 4<sup>th</sup> Avenue and 406 E. 3<sup>rd</sup> Avenue projects. Measures would include a ride-matching services, bike sharing, and Caltrain Go Passes. The Project also includes unbundled parking for the proposed residential uses. The Project is anticipated to instigate approximately 2,141 average daily automobile trips.

Construction of the Project is estimated to last approximately 15 months, with demolition anticipated to begin in May 2022. Demolition would require the exporting of approximately 5,000 tons of debris. Horizontal and vertical construction is anticipated to start in July 2022. Construction activities associated with the proposed project include site clearing and demolition, utility connections, building construction, frontage improvements, and landscaping. The Project would import approximately zero cubic yards (cy) of soil and export 62,000 cy of soil.

## 2.0 GREENHOUSE GAS EMISSIONS

### 2.1 Greenhouse Gas Setting

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 back 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. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO<sub>2</sub>, methane (CH<sub>4</sub>), and N<sub>2</sub>O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of 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. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH<sub>4</sub> traps over 25 times more heat per molecule than CO<sub>2</sub>, and N<sub>2</sub>O absorbs 298 times more heat per molecule than CO<sub>2</sub> (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO<sub>2</sub>e), which weight each gas by its global warming potential. Expressing GHG emissions in CO<sub>2</sub>e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO<sub>2</sub> were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 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 any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO<sub>2</sub> is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO<sub>2</sub>

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<sub>2</sub> emissions remains stored in the atmosphere (IPCC 2013).

<b>Greenhouse Gas</b>	<b>Description</b>
CO <sub>2</sub>	Carbon dioxide is a colorless, odorless gas. CO <sub>2</sub> is emitted in a number of ways, both naturally and through human activities. The largest source of CO <sub>2</sub> emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO <sub>2</sub> emissions. The atmospheric lifetime of CO <sub>2</sub> is variable because it is so readily exchanged in the atmosphere. <sup>1</sup>
CH <sub>4</sub>	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH <sub>4</sub> to the atmosphere. Natural sources of CH <sub>4</sub> include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH <sub>4</sub> is about 12 years. <sup>2</sup>
N <sub>2</sub> O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N <sub>2</sub> O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N <sub>2</sub> O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N <sub>2</sub> O is approximately 120 years. <sup>3</sup>

Sources: <sup>1</sup>USEPA 2016a, <sup>2</sup>USEPA 2016b, <sup>3</sup>USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

### **2.1.1 Sources of Greenhouse Gas Emissions**

In 2021, CARB released the 2021 edition of the California GHG inventory covering calendar year 2019 emissions. In 2019, California emitted 418.2 million gross metric tons of CO<sub>2</sub>e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for approximately 40 percent of total GHG emissions in the State. When emissions from extracting, refining and moving transportation fuels in California are included, transportation is responsible for over 50 percent of statewide emissions in 2019. Continuing the downward trend from 2018, transportation emissions decreased 3.5 million metric tons of CO<sub>2</sub>e in 2019, only being outpaced by electricity, which reduced emissions by 4.3 million metric tons of CO<sub>2</sub>e in 2019.



Emissions from the electricity sector account for 14 percent of the inventory and have shown a substantial decrease in 2019 due to increases in renewables. California's industrial sector accounts for the second largest source of the State's GHG emissions in 2019, accounting for 21 percent (CARB 2021).

## **2.2 Regulatory Framework**

### **2.2.1 State**

#### **2.2.1.1 Executive Orders S-3-05 and B-30-15**

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the State. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

On April 20, 2015 Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the European Union, which adopted the same target in October 2014. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

#### **2.2.1.2 Assembly Bill 32 Climate Change Scoping Plan and Updates**

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the State, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

### **2.2.1.3 Senate Bill 32 and Assembly Bill 197 of 2016**

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

### **2.2.1.4 Senate Bill 100 of 2018**

In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

### **2.2.1.5 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings**

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The 2019 standards are a major step toward meeting Zero Net Energy. The most significant efficiency improvement to the residential Standards include the introduction of photovoltaic into the perspective package, improvements for attics, walls, water heating and lighting. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards.

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CalGreen Building Standard (CalGreen) and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CalGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update. CalGreen contains voluntary "Tier 1" and "Tier 2" standards that are not mandatory statewide but could be required by a City or County. These are 'reach' standards that can be adopted by local jurisdictions and may be incorporated as mandatory standards in future code cycles.

## **2.2.2 Local**

### **2.2.2.1 Bay Area Air Quality Management District**

To provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, BAAQMD CEQA Guidelines include guidance on assessing GHGs and climate change impacts as required under CEQA Section 15183.5(b). The BAAQMD CEQA Guidelines establish thresholds of significance which align with the GHG reduction goals of AB 32 Scoping Plan, which as previously stated seeks to reduce statewide GHG emissions to 1990 levels by the end of the year 2020. The BAAQMD CEQA Guidelines constitute the qualified GHG reduction strategy for the San Francisco Bay Area Air Basin (SFBAAB).

The BAAQMD project-level operational threshold of significance for GHG emissions are as follows:

- The project generation of 1,100 metric tons of CO<sub>2</sub>e per year during operations (bright-line numeric threshold) for 2020;
- **or** the project generation of 4.6 metric tons of CO<sub>2</sub>e per service population (employees + patrons + residents) per year during operations (efficiency-based threshold) for 2020;
- **or** compliance with a Qualified GHG Reduction Strategy (BAAQMD 2017a).

Note that the bright-line threshold and service population thresholds are 2020 targets, but the Project would obviously be constructed in years after 2020. As previously stated, the latest Scoping Plan Update addresses the post-2020 GHG reduction target established by SB 32 and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. Thus, the BAAQMD bright-line threshold and service population thresholds established for the year 2020 are reduced 40 percent in order to be consistent with the post-2020 GHG reduction goals of SB 32 as follows:

- The project generation of 660 metric tons of CO<sub>2</sub>e per year during operations (bright-line numeric threshold) for 2030;
- **or** the project generation of 2.6 metric tons of CO<sub>2</sub>e per service population (employees + residents) per year during operations (efficiency-based threshold) for 2030.
- **or** compliance with a Qualified GHG Reduction Strategy.

### **2.2.2.2 Association of Bay Area Governments (ABAG) Final Plan Bay Area 2050**

The ABAG Plan Bay Area 2050 is the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) for the San Francisco Bay Area. Plan Bay Area 2050 estimates a 22 percent reduction of automotive GHG emissions by 2035 compared to 2005. The region's applicable GHG per capita emissions target, mandated by CARB, is a 19 percent reduction for 2035, compared to 2005. Plan Bay Area 2050 establishes means of establishing GHG reduction goals through transportation improvements, including a clean vehicle feebate and targeted transportation alternatives. According to ABAG, the San Francisco Bay

Area will exceed the mandated GHG reduction target of 19 percent for 2035 by implementing Plan Bay Area.

### **2.2.2.3 BAAQMD 2017 Clean Air Plan**

The 2017 Clean Air Plan (BAAQMD 2017b) provides a regional strategy with the goal of protecting public health and protecting the climate. The 2017 Clean Air Plan is consistent with the California GHG reduction goals. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a “post-carbon economy” without fossil fuel combustion, as needed to achieve ambitious greenhouse gas 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 numerous control measures designed to reduce GHG emissions from stationary and transportation sources. The plan lays the framework for reducing Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

### **2.2.2.4 The City of San Mateo (City) Climate Action Plan**

The City adopted an updated community-wide Climate Action Plan (CAP) in April 2020, which updates and consolidated the various City’s GHG reduction efforts based on the vision of San Mateo residents, businesses, and local government. The CAP provides the framework for San Mateo to reduce its community-wide GHG emissions in a manner consistent with state reduction targets and goals for 2030 and 2050. The CAP was prepared consistent with the California Environmental Quality Act (CEQA) Guidelines for Plans for the Reduction of Greenhouse Gas Emissions (CCR 15183.5). This allows the 2020 CAP to support (and possibly streamline) environmental review of GHG emissions related to future development projects within the City. The 2020 CAP is a direct update to the 2015 CAP. The 2020 CAP analyzes San Mateo’s progress to date in meeting its GHG reduction targets and contains new information to achieve more significant and longer-term GHG reductions.

A CAP is a comprehensive strategy for a community to reduce emissions of GHGs, which, according to scientific consensus, are primarily responsible for causing climate change. The CAP identifies a strategy, reduction measures, and implementation actions the City will use to achieve targets consistent with state recommendations of 4.3 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e) per person by 2030 and 1.2 MTCO<sub>2</sub>e per person by 2050. The City CAP includes five key pieces:

1. An inventory of the annual GHG emissions attributable to San Mateo based on the types of activities occurring within the community and guidance from various protocols and agencies.
2. A forecast of what GHG emissions are likely to look like in 2030 and 2050 based on expected population and economic growth as predicted in the City’s General Plan; with the consideration of major CO<sub>2</sub>e emission reduction policies.
3. A reduction target, which identifies goals for reducing GHG emissions by 2030 and 2050.

4. Reduction strategies, which describe the actions the community intends to take to achieve the reduction target. Each strategy identifies the amount of GHGs that will be reduced once the strategy is implemented. The CAP also estimates benefits of existing programs.
5. An implementation and monitoring program to track progress toward the reduction target and the status of the reduction strategies. A CAP consistency checklist for future development projects is included in the implementation program.

### **2.2.2.5 City CAP Consistency Checklist**

As part of the CAP, the City developed a CAP consistency checklist for land use projects. The checklist is a streamlined tool that identifies the CAP's mandatory requirements and provides an opportunity for project applicants to demonstrate project consistency with GHG reduction measures and actions in the CAP. The checklist identifies a general development class and the strategies which must be implemented for the Project to be compliant with the CAP. The checklist is also an opportunity to identify additional Project characteristics that support the GHG reduction targets and programs in the CAP. If a project does not comply with the applicable mandatory GHG reduction measures, mitigation measures must be implemented to require compliance.

## **2.3 Greenhouse Gas Emissions Impact Assessment**

### **2.3.1 Thresholds of Significance**

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to GHG emissions if it would:

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

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 CCR 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b)

provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that “[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence” (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA’s requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project’s incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a “water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions.” Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The local air quality agency regulating the SFBAAB is the BAAQMD, the regional air pollution control officer for the basin. As previously stated, BAAQMD CEQA Guidelines include guidance on assessing GHGs and climate change impacts as required under CEQA Section 15183.5(b) and establish thresholds of significance for impacts related to GHG emissions. The City has determined, in its discretion, that the BAAQMD recommended GHG significance thresholds are based on substantial evidence to “attribute an appropriate share of GHG reductions necessary to reach statewide reduction goals to new land use development projects in the BAAQMD’s jurisdiction that are evaluated pursuant to CEQA” (BAAQMD 2017a). Therefore, the City uses the BAAQMD CEQA Guidelines to determine the level of impact from the project contributions of GHG emissions.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions; however, the air district recommends the quantification and disclosure of construction-generated GHG emissions. As explained above, the BAAQMD project-level operational threshold of significance for 2020 GHG emissions is:

- The project generation of 1,100 MTCO<sub>2</sub>e per year during operations (bright-line numeric threshold) for 2020;
- **or** the project generation of 4.6 MTCO<sub>2</sub>e per service population (employees + residents) per year during operations (efficiency-based threshold) for 2020;
- **or** compliance with a Qualified GHG Reduction Strategy.

Note that the bright-line threshold and service population thresholds are 2020 targets, but the Project would obviously be constructed in years after 2020. As previously stated, the latest Scoping Plan Update addresses the post-2020 GHG reduction target established by SB 32 and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. Therefore, although the BAAQMD does not promulgate post-2020 thresholds the following thresholds are utilized in this analysis for post-2020 Project emissions:

- The Project generation of 660 MTCO<sub>2</sub>e per year during operations (bright-line numeric threshold) for 2030;
- **or** the Project generation of 2.6 MTCO<sub>2</sub>e per service population (employees + residents) per year during operations (efficiency-based threshold) for 2030.
- **or** compliance with a Qualified GHG Reduction Strategy.

For the purposes of this assessment, the Project is evaluated for compliance with the City CAP, as well as the BAAQMD bright-line threshold of 660 MTCO<sub>2</sub>e per year during operations. In the instance that the bright-line threshold is exceeded, the Project would be compared to the service population metric of 2.6, which was calculated for 2030 based on the 1990 inventory and the projected 2030 statewide population and employment levels (AEP 2016).

As previously described, statewide goals for GHG reductions in the years beyond 2020 were codified into state law with the passage of SB 32. The California Cap-and-Trade Program is the centerpiece of the current Scoping Plan as it allows the State to put a firm limit on overall carbon emissions. Under Cap-and-Trade, an overall limit on GHG emissions from capped sectors is established and facilities subject to the cap would be able to trade permits to emit GHG emissions. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. The program also covers fuel suppliers (natural gas and propane fuel providers as well as transportation fuel providers). Accordingly, GHG emissions associated with the Project's electricity and natural gas usage are covered by the Cap-and-Trade Program, as are GHG emission associated with the combustion of transportation fuels in the state, whether refined in-state or imported. Therefore, while Project design can contribute to reducing potential GHG emissions from the Proposed Project, achievement of future GHG efficiency standards is also dependent, and primarily driven, on regulatory controls applied to all sectors

of the California economy. Thus, the ability of this Project—and all land use development—to achieve GHG reduction goals beyond 2020 is partially out of the control of the Project and its proponents and is being addressed by the State of California.

The 2020 City CAP is the most recent update after the 2015 CAP and is written to align with the goals of SB 32. The CAP addresses estimate emissions beyond 2020, as informed by the post-2020 GHG reduction targets of SB 32 and EO S-3-05. Specifically, the City set emission reduction goals of 15 percent below 2005 emissions levels by 2020, 4.3 MTCO<sub>2</sub>e per person by 2030, and 1.2 MTCO<sub>2</sub>e per person by 2050. Therefore, Project compliance with the CAP adequately establishes Project compliance with statewide GHG reduction goals for the year 2030 associated with SB 32, and with statewide GHG reduction goals for the years beyond 2030.

Additionally, the Project is compared to ABAG's Plan Bay Area, the RTP/SCS for the San Francisco Bay Area, which establishes an overall GHG target for the Project region consistent with the post-2020 GHG reduction goals of SB 32. The Project is also compared to the BAAQMD 2017 Clean Air Plan, which defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious 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 emissions reduction targets.

### **2.3.2 Methodology**

GHG emissions-related impacts were assessed in accordance with methodologies recommended by the BAAQMD and the City of San Mateo. Where GHG emission quantification was required, emissions were modeled using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions were calculated using CalEEMod model defaults for San Mateo County. Operational GHG emissions were based on CalEEMod model defaults for San Mateo County, the Project Site plans, and traffic trip generation rates identified by David J. Powers and Associates (2021). For the purposes of this analysis, projected operational emissions associated with proposed operations are compared to the existing baseline, which includes a variety of uses including automotive and food services, general retail, and single-family residences totaling 32,871 square feet.

### **2.3.3 Impact Analysis**

#### ***2.3.3.1 Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases***

##### City of San Mateo Climate Action Plan

The City CAP (2020) is the most recent update to the prior 2015 City CAP. The CAP is a strategic planning document that identifies sources of GHG emissions within the city's boundaries, presents current and future emissions estimates, identifies a GHG reduction target for future years, and presents strategic programs, policies, and projects to reduce emissions from the energy, transportation, land use, water use,



and waste sectors. The CAP includes GHG reduction measures in the form of GHG reduction programs, policies, projects, and strategies. The BAAQMD Qualified Greenhouse Gas Emissions Reduction Program criteria, in conjunction with the BAAQMD's CEQA Guidelines (2017a), guided the development of the emissions reduction program developed by the City. All three guidelines comply with the requirements of statewide GHG-reduction targets and achieve the goals of the Scoping Plan.

A Qualified Greenhouse Gas Emissions Reduction Program adopted by a local jurisdiction should include the elements below, as described in CEQA Guidelines Section 15183.5. The BAAQMD's CEQA Guidelines outline the methodology to determine whether a GHG reduction program meets these requirements.

- Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable.
- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.
- Specify measures or a group of measures, including performance standards, which substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.
- Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels.
- Be adopted in a public process following environmental review.

The City CAP meets BAAQMD guidelines as follows:

- The CAP quantifies citywide GHG emissions, both existing and projected over the specified time period. The CAP projects emissions for the years 2020, 2030, and 2050 based on growth assumptions from the California Department of Finance and ABAG and were approved by City staff. Relative to 2017 emissions, San Mateo's GHG emissions are expected to rise by more than 23 percent by 2050 if no action is taken.
- The CAP establishes a level, based on substantial evidence, below which the contribution of emissions from activities covered by the plan would not be cumulatively considerable.
- The CAP policy provisions reduce emissions to 15 percent below 2005 emissions levels by 2020.
- The CAP policy provisions reduce emissions to 4.3 MTCO<sub>2</sub>e per person by 2030.
- The CAP policy provisions reduce emissions to 1.2 MTCO<sub>2</sub>e per person by 2050.
- The CAP identifies and analyzes the emissions resulting from specific actions or categories of actions anticipated within the City.
- The CAP specifies measures or a group of measures, including performance standards.
- The CAP establishes a mechanism to monitor its progress toward achieving the level and to require amendment if the plan is not achieving specific levels.

The reduction measures contained in the CAP build on inventory results and key opportunities prioritized by City staff, members of the San Mateo Sustainability Commission, and members of the public. The CAP strategies consist of measures and actions that identify the steps the City will take to support reductions

in GHG emissions. The City will achieve these reductions in GHG emissions through a mix of voluntary programs and new strategic standards. All standards presented in the CAP respond to the needs of development, avoiding unnecessary regulation, streamlining new development, and achieving more efficient use of resources.

The CAP specifically states, "A project-specific environmental document that relies on this CAP for its cumulative impact analysis must identify specific GHG reduction measures applicable to the project and demonstrate the project's incorporation of the measures. Project applicants and City staff will identify specific measures applicable to each project during project review. If applicable measures are not otherwise binding and enforceable, they must be incorporated as mitigation measures for the project."

A specific project proposal is considered consistent with the City CAP if it complies with the "required" GHG reduction measures in the adopted CAP. The required GHG reduction measures applicable to the Proposed Project, which the Project would comply with, include the following:

**Reduction Measure RE 2:** *All new developments with residential units: The project includes an on-site renewable energy system that meets or exceeds the minimum requirements of the California State Building Code:* The Project is required, per California state law, to meet the minimum requirements of the 2019 California State Building Code for Project approval. In addition, Section 23.24.030 of the City Municipal Code states "New residential buildings four stories or more shall provide a minimum of a 3-kilowatt photovoltaic system". The proposed building included in the Project would be required to comply with this provision of the Municipal Code. As described in Section 1.2, *Project Description*, above, photovoltaic panels are proposed to be installed on the rooftop.

**Reduction Measure EE 3:** *All new developments with residential units: The project includes trees that provide shade to residences:* Landscaping along the Project frontage would include street trees and raised and ground-level planter areas for low evergreen hedges and grasses or accent plants, respectively. As required by the Municipal Code landscaping requirements (Section 27.62.100), the Project Site Plan includes 27 street trees and several potted trees throughout the 4<sup>th</sup> floor commercial roof deck and rooftop residential common area in its landscape design, which will provide shade upon maturity.

**Reduction Measure CF 1(a):** *All new development with dedicated offstreet parking: The project includes parking spaces with installed EV chargers or are pre-wired for EV chargers, consistent with state and any local regulations:* The Project is required, per Section 23.70.040 of the Municipal Code and Green Building Code Section 4.106.4.2, to comply with the requirement that 15 percent of the total number of parking spaces on a building site shall be electric vehicle charging spaces (EV spaces) or spaces capable of supporting future electric vehicle supply equipment (EVSE). The Project proposes that 15.6 percent (63 parking spaces) of the 407 total parking spaces on the site be EV spaces.

**Reduction Measure CF 1(b):** *All new development with dedicated offstreet parking: The project includes parking spaces with installed EV chargers that are accessible by members of the public beyond those who live and/or work at the project:* As stated for reduction measure CF 1(a) above,

15.6 percent (63 parking spaces) of the 407 total parking spaces on the site be EV spaces, which is beyond the 15 percent requirement. The Project proposes to make the office parking contained in the garage available for public use during the evenings and weekends. The parking could function similarly to public garages in downtown and other buildings in downtown that offer private parking for public use.

**Reduction Measure ST 6:** *New developments of at least six multifamily units and/or 10,000 square feet of nonresidential space- Implement TDM strategies to comply with the appropriate trip reduction target identified in applicable area plans and San Mateo Citywide TDM Plan:* Transportation Demand Management (TDM) is a combination of services, incentives, facilities, and actions that reduce single-occupant vehicle trips to help relieve traffic congestion, parking demand, and air pollutants, including GHG emissions. The purpose of TDM is to promote more efficient utilization of existing transportation facilities, and to ensure that new developments are designed to maximize the potential for sustainable transportation usage. The Project proposes to include a TDM Plan to decrease in the number of automobile trips generated and parking demand compared to typical projects of this use and size similar to the TDM Plans prepared for the nearby 405 E. 4<sup>th</sup> Avenue and 406 E. 3<sup>rd</sup> Avenue projects. Measures would include a ride matching services, bike sharing, and Caltrain Go Passes. The Project also includes unbundled parking for the proposed residential uses.

Additionally, the Project Site is located less than ¼ mile from a Caltrain station to the northwest. At this location, Caltrain provides for local, limited and Baby Bullet service. This accessibility to mass transit would result in fewer vehicle trips and vehicle miles traveled (VMT) compared to the statewide average and encourage walking and non-automotive forms of transportation, thus resulting in the reduction of, transportation-related emissions. Further, the Project is also located within easy access to numerous restaurants, a market, and other services in the vicinity of the Project Site. These services are conveniently located for future residents of the Proposed Project, which will further reduce the number of vehicle trips. Additionally, the Project Site would be located within an area surrounded by other offsite nonresidential and residential uses. The Project also includes plentiful bike storage, which would encourage residents to bike rather than drive, when feasible.

**Reduction Measure BE 1:** *All new development: The project does not have natural gas connections and does not have any natural gas appliances or other equipment installed.* The Project does not proposed to include natural gas connections, natural gas appliances, or other natural gas equipment in the Project design.

**Reduction Measure ST 7:** *All new development: Be located along El Camino Real, within one-half mile of any Caltrain station, or in the Rail Corridor Transit Oriented Development or Hillsdale Station Area Plan areas:* The Project Site would be located less than 0.25 mile from the nearest Caltrain stop, located at South Railroad Avenue.

**Reduction Measure SW 1:** *All developments with multifamily units or nonresidential space: Provide an area of sufficient space to store and allow access to a compost bin.* The Project will include composting facilities for the residences.

Based on a review of the Project Plans, the following applicable City CAP reduction measure requirements are not proposed by the Project:

**Reduction Measure RE 2:** *All new developments with residential units: The project includes an on-site energy storage system, such as a battery.*

**Reduction Measure WW 3:** *All new development: Include a greywater system.*

All development in the City, including the Project, is required to adhere to all applicable City-adopted policy provisions, including those contained in the adopted CAP. The Project applicant must complete a checklist to confirm consistency with the CAP to the satisfaction of City staff. The City ensures all provisions of the CAP are incorporated into projects and their permits through development review and applications of conditions of approval as applicable. In the case of the Project Site, it is noted that there is a lack of infrastructure for greywater in downtown San Mateo. The Proposed Project would not produce enough greywater internally to feasibly require the Project to construct the needed infrastructure in downtown San Mateo. Therefore, the implementation of Reduction Measure WW 3 is considered infeasible for the Project until such time that the infrastructure for greywater exists in downtown San Mateo. Additionally, while the Project's proposed onsite renewable energy system would generate energy, the amount of energy generated would not be large enough to feasible justify the installation of an on-site energy storage system. Therefore, the implementation of Reduction Measure RE 2 is considered infeasible for the Project.

All of the applicable and feasible provisions of the City CAP are incorporated into the Proposed Project.

### BAAQMD Plan 2017 Clean Air Plan

The 2017 Clean Air Plan (BAAQMD 2017b) provides a regional strategy to protect public health and protect the climate. The 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious 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 emissions reduction targets. The 2017 Clean Air Plan includes a wide range of control measures designed to reduce emissions of CH<sub>4</sub> and other 'super GHGs' in the near term, and to decrease emissions of CO<sub>2</sub> by reducing fossil-fuel combustion.

The 2017 Clean Air Plan includes a diverse range of control measures designed to decrease GHG emissions. Consistency of the Proposed Project with 2017 Clean Air Plan is demonstrated by assessing whether the Project supports all of the Project-applicable Clean Air Plan control measures for GHG emissions. The GHG-related control strategies of the Clean Air Plan include *Mobile Source Measures*, *Transportation Control Measures* and *Energy and Climate Measures*.

Note, the *Land Use and Local Impact Measures* of the 2017 Clean Air Plan address the exposure of sensitive receptors to toxic air contaminants and is thereby not applicable to this impact discussion of GHG emissions. Additionally, the *Stationary Source Measures* in the Clean Air Plan such as those implemented to control emissions from metal melting facilities, cement kilns, refineries, and glass furnaces are not applicable to the Proposed Project.

### ***Transportation and Mobile Source Control Measures***

The BAAQMD identifies transportation and mobile source control measures as part of the Clean Air Plan to reduce emissions from these sources. The transportation control measures are designed to reduce emissions from motor vehicles by reducing vehicle trips and VMT in addition to vehicle idling and traffic congestion. The Proposed Project is consistent with the Clean Air Plan's transportation and mobile source control measures in that it is the redevelopment of an existing urban environment. The Project is considered "infill development" as it proposes to redevelop a build-out property and enhance the physical design of the urban environment. Under Public Resources Code (PRC) section 21061.3, an "infill site" is defined as a site that "has been previously developed for qualified urban uses." In turn, a "qualified urban use" is defined, pursuant to PRC section 21072, as "a residential, commercial, or public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses." Additionally, the Project Site is located in an "urbanized area," which is defined under PRC section 21071 as "an incorporated city" that meets the criteria of having a population of at least 100,000 persons.

The Proposed Project would be located in close proximity to a Caltrain station, which is located less than 0.25 mile to the northwest of the site. At this location, Caltrain provides for local, limited and Baby Bullet service. There are three bus stops in close proximity to the Project Site, one on East 2<sup>nd</sup> Avenue, one on East 4<sup>th</sup> Avenue and one on South Delaware Street. The public transit accessibility would result in fewer vehicle trips and VMT compared to the statewide average and encourage walking and non-automotive forms of transportation, thus resulting in the reduction of, or no increase in, transportation-related emissions. The Project would also provide bike storage for residents.

Pedestrian access to the Project Site would be provided via new sidewalks constructed along the Project frontage that would range between approximately 14 and 25 feet in width. Bicycle access to the Project Site would be provided via existing bicycle routes located along South Delaware Street, South Claremont Street, and East 3<sup>rd</sup> Avenue from the east. A new protected bike lane would be constructed by the Project along the site's East 3<sup>rd</sup> Avenue and South Delaware Street frontage. The Proposed Project would also provide convenient accessibility to nearby retail shops, restaurants, a market, and more. These places of commerce and employment are conveniently located for the future residents of the Proposed Project to access via walking, biking, or a short vehicle trip, which will further reduce VMT. Additionally, the Project would include on-site office jobs within an area built with large numbers of residential uses, notably to the south of the Project. There are also existing single-family neighborhoods located to the north and east.

These aspects of the Project would result in the generation of a reduced amount of GHG emissions. According to the U.S. Environmental Protection Agency (USEPA), redevelopments (namely at brownfield sites such as the Project Site) produce 32 to 57 percent less emissions per capita relative to conventional developments (USEPA 2011); this is because the number of daily vehicle trips and daily VMT associated with the redevelopment tend to be lower compared with development on vacant land. As a result, the Proposed Project would not conflict with the identified transportation and mobile source control measures of the Clean Air Plan.

### ***Land Use and Local Impact Measures***

The BAAQMD Clean Air Plan includes *Land Use and Local Impact Measures* to ensure that planned growth is focused in a way that protects the people and environment from exposure of emissions associated with stationary and mobile sources and to promote mixed-use, compact development to reduce motor vehicle travel. The *Land Use and Local Impact Measures* identified by the BAAQMD are not specifically applicable to the Proposed Project as they relate to actions the BAAQMD will take to reduce impacts from goods movement and health risks in affected communities at the plan level. The measures also detail new regulatory actions the BAAQMD will undertake related to land use, including updates to the CEQA Air Quality Guidelines, and indirect source review.

However, the Proposed Project would be a redevelopment infill Project in support of these measures. For instance, the Project can be identified for its "location efficiency." Location efficiency describes the location of the Project relative to the type of urban landscape its proposed to fit within, such as an "urban area," "compact infill," or "suburban center." The Project site represents an urban/compact infill location within an area of the city developed with residential and commercial uses. The Project site is served by existing public transportation as previously described; it is within an active urban center surrounded with many existing offsite office, commercial, and residential buildings. The Project would locate additional residential land uses in close proximity to existing offsite office, commercial, and residential uses. Therefore, the Project would provide future Project residents with the potential work opportunities and commercial service options in close proximity to the site. Additionally, the Project would locate potential employment opportunities for residents already living in the vicinity. The location efficiency of the Project site would result in synergistic benefits that would reduce vehicle trips and VMT compared to the statewide average and would result in corresponding reduction of transportation related GHG emissions.

The Project would increase housing density in the vicinity over current conditions. Increased density reduces emissions associated with transportation as it reduces the distance people travel for work or services and provides a foundation for the implementation of other strategies to reduce GHG emissions.

### ***Energy and Climate Control Measures***

The Clean Air Plan also includes Energy and Climate Control Measures, which are designed to reduce ambient concentrations of emissions of CO<sub>2</sub>. Implementation of these measures is intended to promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the "urban heat island" effect by increasing reflectivity of roofs and parking lots, promote the planting of (low volatile organic compound-emitting) trees to reduce biogenic emissions, lower air temperatures, provide shade, and absorb air pollutants. The measures include voluntary approaches to reduce the heat-island effect by increasing shade in urban and suburban areas through the planting of trees. The Proposed Project would increase landscaping throughout the Project Site and would include trees to meet the landscaping requirements of the Municipal Code, which would help reduce the urban heat-island effect. In addition, the Proposed Project would include EV charging in compliance with the City Municipal Code. Furthermore, the proposed buildings would be built to the 2019 Title 24 Building Energy Efficiency Standards. Per the 2019 Building Energy Efficiency Standards, 100 percent of electricity use during Project operation must be generated from renewable energy; eliminating operational CO<sub>2</sub>e emissions from the Project due to energy use.

The Project is consistent with the 2017 Clean Air Plan. The Proposed Project would conform to the Project-applicable control measures in the Clean Air Plan and would not disrupt or hinder the implementation of any other control measures.

### ABAG Final Plan Bay Area 2050

ABAG's Plan Bay Area is the RTP/SCS for the San Francisco Bay Area. Plan Bay Area establishes GHG emissions goals for automobiles and light-duty trucks, a potent source of GHG emissions attributable to land use development. As previously described, ABAG was tasked by CARB to achieve a 19 percent reduction of passenger car and light truck automotive GHG emissions by 2035 compared to 2005. Plan Bay Area 2050 establishes an overall mechanism to achieve these GHG targets for the Project region consistent with the target date of SB 32. According to ABAG, the San Francisco Bay Area will exceed the mandated GHG reduction target of 19 percent for 2035 by implementing Plan Bay Area.

The RTP/SCS contains thousands of individual transportation projects, including highway improvements, railway electrification, bicycle lanes, new transit hubs, and replacement bridges. These future investments seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal Clean Air Act requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently.

Plan Bay Area 2050's core strategy is "focused growth" in existing communities along the existing transportation network. This strategy allows the best "bang for the buck" in achieving key regional economic, environmental, and equity goals: it builds upon existing community characteristics, efficiently leverages existing infrastructure, and mitigates impacts on areas with less development. Plan Bay Area 2050's Growth Geographies identify a mix of locally identified Priority Development Areas, areas near high quality transit and areas of high opportunity as communities poised to accommodate additional growth. Priority Development Areas are defined as areas generally near existing job centers or frequent transit that are locally identified (i.e., identified by towns, cities or counties) for housing and job growth. Meanwhile, Plan Bay Area 2050 identifies areas outside of the existing urban footprint or in areas that are at a very high risk of wildfire as areas where additional construction should be deprioritized.

The Project Site is located in an area identified as the "San Mateo Downtown Priority Development Area" in Plan Bay Area 2050 (ABAG 2020). Therefore, Plan Bay Area 2050 considers the Project location to be included in an area near high-quality transit and within a communities poised to accommodate additional growth, and therefore encourages urban growth in the Project Area. Furthermore, the Project is proposed within a built environment (infill development). The Project will increase density and land use diversity in the vicinity over current conditions. Increased density, measured in terms of persons, jobs, or building square footage, as well as increased land use diversity, potentially reduces emissions associated with transportation as it reduces the distance people travel for work or services and provides a foundation for the implementation of other strategies such as enhanced transit services. The Project would increase the

site density from 32,871 total square feet of commercial and residential space to 271,328 total square feet of mixed-use residential-office building space.

For these reasons, the Project is consistent with Plan Bay Area. Based on the Project's proximity to public transportation, availability of bike storage space, proximity to retail stores, and TDM plan, it can be assumed that regional mobile emissions will decrease in line with the goals of Plan Bay Area with implementation of the Proposed Project. Implementing ABAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, and the Proposed Project will not obstruct the achievement of Plan Bay Area's emission reduction targets.

### **2.3.3.2 Generation of Greenhouse Gas Emissions**

#### Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

<b>Table 3-2. Construction-Related Greenhouse Gas Emissions</b>	
<b>Emissions Source</b>	<b>CO<sub>2</sub>e (Metric Tons/ Year)</b>
Construction Year 1	544
Construction Year 2	324
<b>Total Construction Emissions</b>	<b>868</b>

Source: CalEEMod version 2020.4.0. Refer to Attachment B for Model Data Outputs.

As shown in Table 3-2, Project construction would result in the generation of approximately 868 MTCO<sub>2</sub>e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. As previously stated, the BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. GHG emissions generated by the construction sector have been declining in recent years. For instance, construction equipment engine efficiency has continued to improve year after year. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower (hp) and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 hp and increasingly more stringent Tier 2 and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been manufactured to Tier 3 standards. Tier 3 engine standards reduce



precursor and subset GHG emissions such as nitrogen oxide by as much as 60 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which were phased in over the period of 2008-2015. The Tier 4 standards require that emissions of nitrogen oxide be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later will be manufactured to Tier 4 standards.

In addition, the California Energy Commission recently released the 2019 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). Both the 2016 and 2019 updates to the Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions, and alterations to existing buildings. For instance, effective January 1, 2017, owners/builders of construction projects have been required to divert (recycle) 65 percent of construction waste materials generated during the project construction phase. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills, which is a source of CH<sub>4</sub>, and reducing demand for natural resources.

### Project Operations

Operation of the Project would result in GHG emissions. Projected GHG emissions associated with proposed operations are quantified and compared to the existing baseline, which, as previously stated, includes automotive and food services, general retail, and single-family residences totaling 32,871 square feet of building space. Table 3-3 summarizes all the direct and indirect annual GHG emissions associated with the Project.

<b>Table 3-3. Operational-Related Greenhouse Gas Emissions</b>	
<b>Emission Source</b>	<b>CO<sub>2</sub>e (Metric Tons/ Year)</b>
<b>Proposed Project</b>	
Area Source	6
Energy	336
Mobile	525
Waste	110
Water	66
<b>Total</b>	<b>1,043</b>
<b>Existing Onsite Land Uses</b>	
Area Source	1
Energy	57
Mobile	541
Waste	22.5
Water	5
<b>Total</b>	<b>626.5</b>
<b>Difference</b>	
Area Source	+5
Energy	+279
Mobile	-16
Waste	+87.5
Water	+61
<b>Total</b>	<b>+416.5</b>
<i>BAAQMD Bright-Line Significance Threshold</i>	660
<b>Exceed BAAQMD Threshold?</b>	<b>No</b>

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Emission projections predominately based on CalEEMod model defaults for San Mateo County. Emissions projections account for baseline and Project trip generation rates identified by David J. Powers and Associates (2021).

As shown in Table 3-3, the increase in operational GHG emissions over the existing baseline would be 416.5 MTCO<sub>2</sub>e per year as a result of the Project. Therefore, the proposed Project would not surpass the BAAQMD bright-line numeric significance threshold of 660 MTCO<sub>2</sub>e annually.

### **2.3.3.3 Cumulative GHG Impacts**

Climate change is a global problem, and 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 (about one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

It is generally the case that an individual project of this 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 GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. As previously discussed, the Proposed Project would not conflict with the City CAP, the BAAQMD 2017 Clean Air Plan, or Plan Bay Area, the RTP/SCS for the Bay Area. As a result, the Project would not conflict with any GHG reduction plans. 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

### 3.0 REFERENCES

- ABAG. 2021. Bay Area 2050. [https://www.planbayarea.org/sites/default/files/documents/2021-05/Draft\\_Plan\\_Bay\\_Area\\_2050\\_May2021\\_0.pdf](https://www.planbayarea.org/sites/default/files/documents/2021-05/Draft_Plan_Bay_Area_2050_May2021_0.pdf)
- \_\_\_\_\_. 2020. Bay Area 2050 GIS Data Catalog. <https://opendata.mtc.ca.gov/datasets/MTC::priority-development-areas-plan-bay-area-2050/about>
- AEP. 2016. Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California.
- BAAQMD. 2017a. Bay Area Air Quality Management District CEQA Air Quality Guidelines.
- \_\_\_\_\_. 2017b. Bay Area Final 2017 Clean Air Plan.
- California Air Pollution Control Officers Association (CAPCOA). 2021. California Emissions Estimator Model (CalEEMod), version 2020.4.0.
- California Air Resources Board (CARB). 2021. California Greenhouse Gas Emission Inventory 2021 Edition. <https://ww2.arb.ca.gov/ghg-inventory-data>
- \_\_\_\_\_. 2008. Climate Change Scoping Plan Appendices (Appendix F).
- Crockett, Alexander G. 2011. Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World.
- David J. Powers and Associates. 2021. Block 21 Trip Gen Spreadsheet.
- Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2014 Synthesis Report: Approved Summary for Policymakers. <http://www.ipcc.ch/>.
- \_\_\_\_\_. 2013. 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. [http://www.climatechange2013.org/images/report/WG1AR5\\_ALL\\_FINAL.pdf](http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf).
- U.S. Environmental Protection Agency (USEPA). 2016a. Climate Change – Greenhouse Gas Emissions: Carbon Dioxide. <http://www.epa.gov/climatechange/emissions/co2.html>.
- \_\_\_\_\_. 2016b. Methane. <https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>.
- \_\_\_\_\_. 2016c. Nitrous Oxide. <https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html>.
- \_\_\_\_\_. 2011. Air and Water Quality Impacts of Brownfields Redevelopment. <https://www.epa.gov/sites/default/files/2015-09/documents/bfenviroimpacts042811.pdf>

## **LIST OF ATTACHMENTS**

---

Attachment A – CalEEMod Output File for Greenhouse Gas Emissions

CalEEMod Output Files – Greenhouse Gas Emissions

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Block 21 Mixed-Use - PROPOSED PROJECT**

**San Mateo County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	180.95	1000sqft	1.51	180,950.00	0
Unenclosed Parking with Elevator	407.00	Space	0.00	128,692.00	0
Apartments Mid Rise	111.00	Dwelling Unit	0.00	90,378.00	317

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	70
<b>Climate Zone</b>	5			<b>Operational Year</b>	2023
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

- Project Characteristics -
- Land Use - Project site = 1.51 acres
- Construction Phase - Construction duration = 15 months
- Demolition -
- Grading -
- Vehicle Trips - Daily traffic trip per Trip Generation spreadsheet provided by David J Powers
- Woodstoves - No wood burning devices
- Mobile Land Use Mitigation -
- Energy Mitigation -
- Water Mitigation -

## Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Energy Use - No Natural Gas per MM GHG-1. Electricity consumption increased accordingly.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	4.00	40.00
tblEnergyUse	NT24E	3,054.10	3,072.75
tblEnergyUse	NT24E	4.80	6.80
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	1.01	0.00
tblEnergyUse	T24E	90.83	109.48
tblEnergyUse	T24E	3.66	5.70
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	18.14	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	16.65	35.52
tblFireplaces	NumberWood	18.87	0.00
tblGrading	MaterialExported	0.00	31,000.00
tblGrading	MaterialExported	0.00	31,000.00
tblLandUse	LandUseSquareFeet	162,800.00	128,692.00
tblLandUse	LandUseSquareFeet	111,000.00	90,378.00
tblLandUse	LotAcreage	4.15	1.51
tblLandUse	LotAcreage	3.66	0.00
tblLandUse	LotAcreage	2.92	0.00
tblVehicleTrips	ST_TR	4.91	5.56
tblVehicleTrips	SU_TR	4.09	5.56
tblVehicleTrips	WD_TR	5.44	5.56
tblVehicleTrips	WD_TR	9.74	8.42
tblWoodstoves	NumberCatalytic	2.22	0.00



Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

tblWoodstoves	NumberNoncatalytic	2.22	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

**2.0 Emissions Summary**

---

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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					
2022	0.1734	2.2235	1.3376	5.4000e-003	0.4508	0.0675	0.5184	0.1718	0.0634	0.2352	0.0000	526.0965	526.0965	0.0719	0.0538	543.9281
2023	1.7566	1.1217	1.3193	3.5400e-003	0.1414	0.0408	0.1823	0.0383	0.0394	0.0777	0.0000	318.8007	318.8007	0.0324	0.0164	324.4940
<b>Maximum</b>	<b>1.7566</b>	<b>2.2235</b>	<b>1.3376</b>	<b>5.4000e-003</b>	<b>0.4508</b>	<b>0.0675</b>	<b>0.5184</b>	<b>0.1718</b>	<b>0.0634</b>	<b>0.2352</b>	<b>0.0000</b>	<b>526.0965</b>	<b>526.0965</b>	<b>0.0719</b>	<b>0.0538</b>	<b>543.9281</b>

**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					
2022	0.1734	2.2235	1.3376	5.4000e-003	0.4508	0.0675	0.5184	0.1718	0.0634	0.2352	0.0000	526.0963	526.0963	0.0719	0.0538	543.9279
2023	1.7566	1.1217	1.3193	3.5400e-003	0.1414	0.0408	0.1823	0.0383	0.0394	0.0777	0.0000	318.8006	318.8006	0.0324	0.0164	324.4938
<b>Maximum</b>	<b>1.7566</b>	<b>2.2235</b>	<b>1.3376</b>	<b>5.4000e-003</b>	<b>0.4508</b>	<b>0.0675</b>	<b>0.5184</b>	<b>0.1718</b>	<b>0.0634</b>	<b>0.2352</b>	<b>0.0000</b>	<b>526.0963</b>	<b>526.0963</b>	<b>0.0719</b>	<b>0.0538</b>	<b>543.9279</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	3-10-2022	6-9-2022	0.2964	0.2964
3	6-10-2022	9-9-2022	1.0856	1.0856
4	9-10-2022	12-9-2022	0.8470	0.8470
5	12-10-2022	3-9-2023	0.5621	0.5621
6	3-10-2023	6-9-2023	0.5547	0.5547
7	6-10-2023	9-9-2023	1.9017	1.9017
		Highest	1.9017	1.9017

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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	1.2544	0.0134	0.8314	7.0000e-005		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	5.7911	5.7911	1.4100e-003	8.0000e-005	5.8505
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	332.6106	332.6106	0.0538	6.5200e-003	335.8995
Mobile	0.7111	0.6926	6.8594	0.0143	1.5420	9.4900e-003	1.5515	0.4118	8.8100e-003	0.4206	0.0000	1,318.3283	1,318.3283	0.0881	0.0587	1,338.0092
Waste						0.0000	0.0000		0.0000	0.0000	44.5240	0.0000	44.5240	2.6313	0.0000	110.3064
Water						0.0000	0.0000		0.0000	0.0000	12.4976	27.5817	40.0793	1.2881	0.0309	81.4747
<b>Total</b>	<b>1.9655</b>	<b>0.7059</b>	<b>7.6908</b>	<b>0.0144</b>	<b>1.5420</b>	<b>0.0144</b>	<b>1.5564</b>	<b>0.4118</b>	<b>0.0137</b>	<b>0.4255</b>	<b>57.0216</b>	<b>1,684.3116</b>	<b>1,741.3332</b>	<b>4.0627</b>	<b>0.0961</b>	<b>1,871.5403</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2544	0.0134	0.8314	7.0000e-005		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	5.7911	5.7911	1.4100e-003	8.0000e-005	5.8505
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	332.6103	332.6103	0.0538	6.5200e-003	335.8992
Mobile	0.5014	0.3674	3.7056	5.5800e-003	0.5734	4.3400e-003	0.5777	0.1531	4.0200e-003	0.1571	0.0000	514.4173	514.4173	0.0557	0.0321	525.3867
Waste						0.0000	0.0000		0.0000	0.0000	44.5240	0.0000	44.5240	2.6313	0.0000	110.3064
Water						0.0000	0.0000		0.0000	0.0000	9.9981	23.1579	33.1559	1.0306	0.0247	66.2830
<b>Total</b>	<b>1.7559</b>	<b>0.3808</b>	<b>4.5370</b>	<b>5.6500e-003</b>	<b>0.5734</b>	<b>9.2300e-003</b>	<b>0.5826</b>	<b>0.1531</b>	<b>8.9100e-003</b>	<b>0.1620</b>	<b>54.5221</b>	<b>875.9766</b>	<b>930.4987</b>	<b>3.7729</b>	<b>0.0634</b>	<b>1,043.7259</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>10.67</b>	<b>46.05</b>	<b>41.01</b>	<b>60.71</b>	<b>62.82</b>	<b>35.81</b>	<b>62.57</b>	<b>62.82</b>	<b>34.96</b>	<b>61.92</b>	<b>4.38</b>	<b>47.99</b>	<b>46.56</b>	<b>7.13</b>	<b>33.99</b>	<b>44.23</b>

**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	5/1/2022	6/24/2022	5	40	
2	Site Preparation	Site Preparation	6/25/2022	8/19/2022	5	40	
3	Grading	Grading	8/20/2022	10/14/2022	5	40	

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

4	Building Construction	Building Construction	10/15/2022	7/21/2023	5	200
5	Paving	Paving	7/22/2023	8/4/2023	5	10
6	Architectural Coating	Architectural Coating	8/5/2023	8/18/2023	5	10

**Acres of Grading (Site Preparation Phase): 37.5**

**Acres of Grading (Grading Phase): 40**

**Acres of Paving: 0**

**Residential Indoor: 183,015; Residential Outdoor: 61,005; Non-Residential Indoor: 271,425; Non-Residential Outdoor: 90,475; Striped Parking Area: 7,722 (Architectural Coating – sqft)**

**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	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	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	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Paving	Rollers	1	7.00	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	494.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	3,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	3,875.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	192.00	63.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Demolition - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0535	0.0000	0.0535	8.1000e-003	0.0000	8.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0338	0.3324	0.2792	4.8000e-004		0.0168	0.0168		0.0157	0.0157	0.0000	42.1554	42.1554	0.0107	0.0000	42.4239
<b>Total</b>	<b>0.0338</b>	<b>0.3324</b>	<b>0.2792</b>	<b>4.8000e-004</b>	<b>0.0535</b>	<b>0.0168</b>	<b>0.0703</b>	<b>8.1000e-003</b>	<b>0.0157</b>	<b>0.0238</b>	<b>0.0000</b>	<b>42.1554</b>	<b>42.1554</b>	<b>0.0107</b>	<b>0.0000</b>	<b>42.4239</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Demolition - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2200e-003	0.0483	0.0136	1.7000e-004	4.1400e-003	3.7000e-004	4.5100e-003	1.1400e-003	3.5000e-004	1.4900e-003	0.0000	17.5948	17.5948	1.6600e-003	2.8300e-003	18.4796
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.1000e-004	5.3900e-003	2.0000e-005	2.0500e-003	1.0000e-005	2.0600e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.5714	1.5714	4.0000e-005	4.0000e-005	1.5847
<b>Total</b>	<b>1.8100e-003</b>	<b>0.0487</b>	<b>0.0190</b>	<b>1.9000e-004</b>	<b>6.1900e-003</b>	<b>3.8000e-004</b>	<b>6.5700e-003</b>	<b>1.6800e-003</b>	<b>3.6000e-004</b>	<b>2.0400e-003</b>	<b>0.0000</b>	<b>19.1661</b>	<b>19.1661</b>	<b>1.7000e-003</b>	<b>2.8700e-003</b>	<b>20.0643</b>

**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					0.0535	0.0000	0.0535	8.1000e-003	0.0000	8.1000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0338	0.3324	0.2792	4.8000e-004		0.0168	0.0168		0.0157	0.0157	0.0000	42.1553	42.1553	0.0107	0.0000	42.4239
<b>Total</b>	<b>0.0338</b>	<b>0.3324</b>	<b>0.2792</b>	<b>4.8000e-004</b>	<b>0.0535</b>	<b>0.0168</b>	<b>0.0703</b>	<b>8.1000e-003</b>	<b>0.0157</b>	<b>0.0238</b>	<b>0.0000</b>	<b>42.1553</b>	<b>42.1553</b>	<b>0.0107</b>	<b>0.0000</b>	<b>42.4239</b>



Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Demolition - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2200e-003	0.0483	0.0136	1.7000e-004	4.1400e-003	3.7000e-004	4.5100e-003	1.1400e-003	3.5000e-004	1.4900e-003	0.0000	17.5948	17.5948	1.6600e-003	2.8300e-003	18.4796
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.1000e-004	5.3900e-003	2.0000e-005	2.0500e-003	1.0000e-005	2.0600e-003	5.4000e-004	1.0000e-005	5.5000e-004	0.0000	1.5714	1.5714	4.0000e-005	4.0000e-005	1.5847
<b>Total</b>	<b>1.8100e-003</b>	<b>0.0487</b>	<b>0.0190</b>	<b>1.9000e-004</b>	<b>6.1900e-003</b>	<b>3.8000e-004</b>	<b>6.5700e-003</b>	<b>1.6800e-003</b>	<b>3.6000e-004</b>	<b>2.0400e-003</b>	<b>0.0000</b>	<b>19.1661</b>	<b>19.1661</b>	<b>1.7000e-003</b>	<b>2.8700e-003</b>	<b>20.0643</b>

**3.3 Site Preparation - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1270	0.0000	0.1270	0.0603	0.0000	0.0603	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0262	0.2926	0.1419	3.4000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	30.2306	30.2306	9.7800e-003	0.0000	30.4750
<b>Total</b>	<b>0.0262</b>	<b>0.2926</b>	<b>0.1419</b>	<b>3.4000e-004</b>	<b>0.1270</b>	<b>0.0125</b>	<b>0.1395</b>	<b>0.0603</b>	<b>0.0115</b>	<b>0.0718</b>	<b>0.0000</b>	<b>30.2306</b>	<b>30.2306</b>	<b>9.7800e-003</b>	<b>0.0000</b>	<b>30.4750</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Site Preparation - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5400e-003	0.3787	0.1068	1.3100e-003	0.0325	2.9000e-003	0.0354	8.9300e-003	2.7800e-003	0.0117	0.0000	138.0155	138.0155	0.0131	0.0222	144.9561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.5000e-004	3.3200e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	0.9670	0.9670	3.0000e-005	3.0000e-005	0.9752
<b>Total</b>	<b>9.9100e-003</b>	<b>0.3790</b>	<b>0.1101</b>	<b>1.3200e-003</b>	<b>0.0338</b>	<b>2.9100e-003</b>	<b>0.0367</b>	<b>9.2700e-003</b>	<b>2.7900e-003</b>	<b>0.0121</b>	<b>0.0000</b>	<b>138.9825</b>	<b>138.9825</b>	<b>0.0131</b>	<b>0.0222</b>	<b>145.9313</b>

**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					0.1270	0.0000	0.1270	0.0603	0.0000	0.0603	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0262	0.2926	0.1419	3.4000e-004		0.0125	0.0125		0.0115	0.0115	0.0000	30.2305	30.2305	9.7800e-003	0.0000	30.4749
<b>Total</b>	<b>0.0262</b>	<b>0.2926</b>	<b>0.1419</b>	<b>3.4000e-004</b>	<b>0.1270</b>	<b>0.0125</b>	<b>0.1395</b>	<b>0.0603</b>	<b>0.0115</b>	<b>0.0718</b>	<b>0.0000</b>	<b>30.2305</b>	<b>30.2305</b>	<b>9.7800e-003</b>	<b>0.0000</b>	<b>30.4749</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.3 Site Preparation - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5400e-003	0.3787	0.1068	1.3100e-003	0.0325	2.9000e-003	0.0354	8.9300e-003	2.7800e-003	0.0117	0.0000	138.0155	138.0155	0.0131	0.0222	144.9561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.5000e-004	3.3200e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	0.9670	0.9670	3.0000e-005	3.0000e-005	0.9752
<b>Total</b>	<b>9.9100e-003</b>	<b>0.3790</b>	<b>0.1101</b>	<b>1.3200e-003</b>	<b>0.0338</b>	<b>2.9100e-003</b>	<b>0.0367</b>	<b>9.2700e-003</b>	<b>2.7900e-003</b>	<b>0.0121</b>	<b>0.0000</b>	<b>138.9825</b>	<b>138.9825</b>	<b>0.0131</b>	<b>0.0222</b>	<b>145.9313</b>

**3.4 Grading - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1434	0.0000	0.1434	0.0688	0.0000	0.0688	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0308	0.3397	0.1844	4.1000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	36.2054	36.2054	0.0117	0.0000	36.4982
<b>Total</b>	<b>0.0308</b>	<b>0.3397</b>	<b>0.1844</b>	<b>4.1000e-004</b>	<b>0.1434</b>	<b>0.0149</b>	<b>0.1583</b>	<b>0.0688</b>	<b>0.0137</b>	<b>0.0824</b>	<b>0.0000</b>	<b>36.2054</b>	<b>36.2054</b>	<b>0.0117</b>	<b>0.0000</b>	<b>36.4982</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Grading - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5400e-003	0.3787	0.1068	1.3100e-003	0.0325	2.9000e-003	0.0354	8.9300e-003	2.7800e-003	0.0117	0.0000	138.0155	138.0155	0.0131	0.0222	144.9561
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	4.6000e-004	3.2000e-004	4.1500e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2087	1.2087	3.0000e-005	3.0000e-005	1.2190
<b>Total</b>	<b>0.0100</b>	<b>0.3790</b>	<b>0.1109</b>	<b>1.3200e-003</b>	<b>0.0341</b>	<b>2.9100e-003</b>	<b>0.0370</b>	<b>9.3500e-003</b>	<b>2.7900e-003</b>	<b>0.0121</b>	<b>0.0000</b>	<b>139.2242</b>	<b>139.2242</b>	<b>0.0131</b>	<b>0.0222</b>	<b>146.1751</b>

**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					0.1434	0.0000	0.1434	0.0688	0.0000	0.0688	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0308	0.3397	0.1844	4.1000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	36.2054	36.2054	0.0117	0.0000	36.4981
<b>Total</b>	<b>0.0308</b>	<b>0.3397</b>	<b>0.1844</b>	<b>4.1000e-004</b>	<b>0.1434</b>	<b>0.0149</b>	<b>0.1583</b>	<b>0.0688</b>	<b>0.0137</b>	<b>0.0824</b>	<b>0.0000</b>	<b>36.2054</b>	<b>36.2054</b>	<b>0.0117</b>	<b>0.0000</b>	<b>36.4981</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.4 Grading - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.5400e-003	0.3787	0.1068	1.3100e-003	0.0325	2.9000e-003	0.0354	8.9300e-003	2.7800e-003	0.0117	0.0000	138.0155	138.0155	0.0131	0.0222	144.9561
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	4.6000e-004	3.2000e-004	4.1500e-003	1.0000e-005	1.5700e-003	1.0000e-005	1.5800e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.2087	1.2087	3.0000e-005	3.0000e-005	1.2190
<b>Total</b>	<b>0.0100</b>	<b>0.3790</b>	<b>0.1109</b>	<b>1.3200e-003</b>	<b>0.0341</b>	<b>2.9100e-003</b>	<b>0.0370</b>	<b>9.3500e-003</b>	<b>2.7900e-003</b>	<b>0.0121</b>	<b>0.0000</b>	<b>139.2242</b>	<b>139.2242</b>	<b>0.0131</b>	<b>0.0222</b>	<b>146.1751</b>

**3.5 Building Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0453	0.3438	0.3500	6.1000e-004		0.0162	0.0162		0.0156	0.0156	0.0000	49.9337	49.9337	8.7000e-003	0.0000	50.1511
<b>Total</b>	<b>0.0453</b>	<b>0.3438</b>	<b>0.3500</b>	<b>6.1000e-004</b>		<b>0.0162</b>	<b>0.0162</b>		<b>0.0156</b>	<b>0.0156</b>	<b>0.0000</b>	<b>49.9337</b>	<b>49.9337</b>	<b>8.7000e-003</b>	<b>0.0000</b>	<b>50.1511</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4900e-003	0.1000	0.0326	3.8000e-004	0.0113	8.8000e-004	0.0122	3.2700e-003	8.4000e-004	4.1100e-003	0.0000	38.2882	38.2882	2.2700e-003	5.6500e-003	40.0280
Worker	0.0121	8.3700e-003	0.1095	3.5000e-004	0.0416	2.1000e-004	0.0418	0.0111	1.9000e-004	0.0113	0.0000	31.9105	31.9105	8.7000e-004	8.4000e-004	32.1813
<b>Total</b>	<b>0.0156</b>	<b>0.1083</b>	<b>0.1422</b>	<b>7.3000e-004</b>	<b>0.0529</b>	<b>1.0900e-003</b>	<b>0.0540</b>	<b>0.0143</b>	<b>1.0300e-003</b>	<b>0.0154</b>	<b>0.0000</b>	<b>70.1987</b>	<b>70.1987</b>	<b>3.1400e-003</b>	<b>6.4900e-003</b>	<b>72.2092</b>

**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	0.0453	0.3438	0.3500	6.1000e-004		0.0162	0.0162		0.0156	0.0156	0.0000	49.9336	49.9336	8.7000e-003	0.0000	50.1510
<b>Total</b>	<b>0.0453</b>	<b>0.3438</b>	<b>0.3500</b>	<b>6.1000e-004</b>		<b>0.0162</b>	<b>0.0162</b>		<b>0.0156</b>	<b>0.0156</b>	<b>0.0000</b>	<b>49.9336</b>	<b>49.9336</b>	<b>8.7000e-003</b>	<b>0.0000</b>	<b>50.1510</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.4900e-003	0.1000	0.0326	3.8000e-004	0.0113	8.8000e-004	0.0122	3.2700e-003	8.4000e-004	4.1100e-003	0.0000	38.2882	38.2882	2.2700e-003	5.6500e-003	40.0280
Worker	0.0121	8.3700e-003	0.1095	3.5000e-004	0.0416	2.1000e-004	0.0418	0.0111	1.9000e-004	0.0113	0.0000	31.9105	31.9105	8.7000e-004	8.4000e-004	32.1813
<b>Total</b>	<b>0.0156</b>	<b>0.1083</b>	<b>0.1422</b>	<b>7.3000e-004</b>	<b>0.0529</b>	<b>1.0900e-003</b>	<b>0.0540</b>	<b>0.0143</b>	<b>1.0300e-003</b>	<b>0.0154</b>	<b>0.0000</b>	<b>70.1987</b>	<b>70.1987</b>	<b>3.1400e-003</b>	<b>6.4900e-003</b>	<b>72.2092</b>

**3.5 Building Construction - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1104	0.8490	0.9143	1.6000e-003		0.0373	0.0373		0.0360	0.0360	0.0000	131.6594	131.6594	0.0224	0.0000	132.2183
<b>Total</b>	<b>0.1104</b>	<b>0.8490</b>	<b>0.9143</b>	<b>1.6000e-003</b>		<b>0.0373</b>	<b>0.0373</b>		<b>0.0360</b>	<b>0.0360</b>	<b>0.0000</b>	<b>131.6594</b>	<b>131.6594</b>	<b>0.0224</b>	<b>0.0000</b>	<b>132.2183</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2023**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8600e-003	0.2151	0.0771	9.6000e-004	0.0298	1.1100e-003	0.0309	8.6200e-003	1.0600e-003	9.6800e-003	0.0000	97.0398	97.0398	5.9700e-003	0.0143	101.4522
Worker	0.0300	0.0196	0.2699	8.9000e-004	0.1096	5.3000e-004	0.1101	0.0292	4.9000e-004	0.0297	0.0000	81.4467	81.4467	2.0800e-003	2.0400e-003	82.1079
<b>Total</b>	<b>0.0349</b>	<b>0.2347</b>	<b>0.3470</b>	<b>1.8500e-003</b>	<b>0.1394</b>	<b>1.6400e-003</b>	<b>0.1410</b>	<b>0.0378</b>	<b>1.5500e-003</b>	<b>0.0393</b>	<b>0.0000</b>	<b>178.4865</b>	<b>178.4865</b>	<b>8.0500e-003</b>	<b>0.0164</b>	<b>183.5601</b>

**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	0.1104	0.8490	0.9143	1.6000e-003		0.0373	0.0373		0.0360	0.0360	0.0000	131.6592	131.6592	0.0224	0.0000	132.2181
<b>Total</b>	<b>0.1104</b>	<b>0.8490</b>	<b>0.9143</b>	<b>1.6000e-003</b>		<b>0.0373</b>	<b>0.0373</b>		<b>0.0360</b>	<b>0.0360</b>	<b>0.0000</b>	<b>131.6592</b>	<b>131.6592</b>	<b>0.0224</b>	<b>0.0000</b>	<b>132.2181</b>



Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.5 Building Construction - 2023**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8600e-003	0.2151	0.0771	9.6000e-004	0.0298	1.1100e-003	0.0309	8.6200e-003	1.0600e-003	9.6800e-003	0.0000	97.0398	97.0398	5.9700e-003	0.0143	101.4522
Worker	0.0300	0.0196	0.2699	8.9000e-004	0.1096	5.3000e-004	0.1101	0.0292	4.9000e-004	0.0297	0.0000	81.4467	81.4467	2.0800e-003	2.0400e-003	82.1079
<b>Total</b>	<b>0.0349</b>	<b>0.2347</b>	<b>0.3470</b>	<b>1.8500e-003</b>	<b>0.1394</b>	<b>1.6400e-003</b>	<b>0.1410</b>	<b>0.0378</b>	<b>1.5500e-003</b>	<b>0.0393</b>	<b>0.0000</b>	<b>178.4865</b>	<b>178.4865</b>	<b>8.0500e-003</b>	<b>0.0164</b>	<b>183.5601</b>

**3.6 Paving - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2200e-003	0.0312	0.0440	7.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	5.8862	5.8862	1.8700e-003	0.0000	5.9329
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.2200e-003</b>	<b>0.0312</b>	<b>0.0440</b>	<b>7.0000e-005</b>		<b>1.5400e-003</b>	<b>1.5400e-003</b>		<b>1.4200e-003</b>	<b>1.4200e-003</b>	<b>0.0000</b>	<b>5.8862</b>	<b>5.8862</b>	<b>1.8700e-003</b>	<b>0.0000</b>	<b>5.9329</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Paving - 2023**

**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	1.4000e-004	9.0000e-005	1.2600e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3803	0.3803	1.0000e-005	1.0000e-005	0.3834
<b>Total</b>	<b>1.4000e-004</b>	<b>9.0000e-005</b>	<b>1.2600e-003</b>	<b>0.0000</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>5.1000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.3803</b>	<b>0.3803</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.3834</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2200e-003	0.0312	0.0440	7.0000e-005		1.5400e-003	1.5400e-003		1.4200e-003	1.4200e-003	0.0000	5.8862	5.8862	1.8700e-003	0.0000	5.9329
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.2200e-003</b>	<b>0.0312</b>	<b>0.0440</b>	<b>7.0000e-005</b>		<b>1.5400e-003</b>	<b>1.5400e-003</b>		<b>1.4200e-003</b>	<b>1.4200e-003</b>	<b>0.0000</b>	<b>5.8862</b>	<b>5.8862</b>	<b>1.8700e-003</b>	<b>0.0000</b>	<b>5.9329</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.6 Paving - 2023**

**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	1.4000e-004	9.0000e-005	1.2600e-003	0.0000	5.1000e-004	0.0000	5.1000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3803	0.3803	1.0000e-005	1.0000e-005	0.3834
<b>Total</b>	<b>1.4000e-004</b>	<b>9.0000e-005</b>	<b>1.2600e-003</b>	<b>0.0000</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>5.1000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.3803</b>	<b>0.3803</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.3834</b>

**3.7 Architectural Coating - 2023**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6066					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
<b>Total</b>	<b>1.6076</b>	<b>6.5100e-003</b>	<b>9.0600e-003</b>	<b>1.0000e-005</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>1.2766</b>	<b>1.2766</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.2785</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.7 Architectural Coating - 2023**

**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	2.7000e-004	3.6800e-003	1.0000e-005	1.5000e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.0000e-004	0.0000	1.1117	1.1117	3.0000e-005	3.0000e-005	1.1207
<b>Total</b>	<b>4.1000e-004</b>	<b>2.7000e-004</b>	<b>3.6800e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>4.0000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.1117</b>	<b>1.1117</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>1.1207</b>

**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	1.6066					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	6.5100e-003	9.0600e-003	1.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2785
<b>Total</b>	<b>1.6076</b>	<b>6.5100e-003</b>	<b>9.0600e-003</b>	<b>1.0000e-005</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>1.2766</b>	<b>1.2766</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.2785</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.7 Architectural Coating - 2023**

**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	2.7000e-004	3.6800e-003	1.0000e-005	1.5000e-003	1.0000e-005	1.5000e-003	4.0000e-004	1.0000e-005	4.0000e-004	0.0000	1.1117	1.1117	3.0000e-005	3.0000e-005	1.1207
<b>Total</b>	<b>4.1000e-004</b>	<b>2.7000e-004</b>	<b>3.6800e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>1.0000e-005</b>	<b>1.5000e-003</b>	<b>4.0000e-004</b>	<b>1.0000e-005</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.1117</b>	<b>1.1117</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>1.1207</b>

**4.0 Operational Detail - Mobile**

---

**4.1 Mitigation Measures Mobile**

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

Integrate Below Market Rate Housing

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.5014	0.3674	3.7056	5.5800e-003	0.5734	4.3400e-003	0.5777	0.1531	4.0200e-003	0.1571	0.0000	514.4173	514.4173	0.0557	0.0321	525.3867
Unmitigated	0.7111	0.6926	6.8594	0.0143	1.5420	9.4900e-003	1.5515	0.4118	8.8100e-003	0.4206	0.0000	1,318.3283	1,318.3283	0.0881	0.0587	1,338.0092

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	617.16	617.16	617.16	1,425,397	530,010
General Office Building	1,523.60	399.90	126.67	2,780,498	1,033,882
Unenclosed Parking with Elevator	0.00	0.00	0.00		
<b>Total</b>	<b>2,140.76</b>	<b>1,017.06</b>	<b>743.83</b>	<b>4,205,895</b>	<b>1,563,893</b>

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Unenclosed Parking with	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
Apartments Mid Rise	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540
General Office Building	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540









Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	435527	40.2966	6.5200e-003	7.9000e-004	40.6951
General Office Building	2.90968e+006	269.2142	0.0436	5.2800e-003	271.8763
Unenclosed Parking with Elevator	249662	23.0997	3.7400e-003	4.5000e-004	23.3281
<b>Total</b>		<b>332.6105</b>	<b>0.0538</b>	<b>6.5200e-003</b>	<b>335.8995</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	435526	40.2965	6.5200e-003	7.9000e-004	40.6950
General Office Building	2.90967e+006	269.2141	0.0436	5.2800e-003	271.8762
Unenclosed Parking with Elevator	249661	23.0996	3.7400e-003	4.5000e-004	23.3280
<b>Total</b>		<b>332.6103</b>	<b>0.0538</b>	<b>6.5200e-003</b>	<b>335.8992</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	1.2544	0.0134	0.8314	7.0000e-005		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	5.7911	5.7911	1.4100e-003	8.0000e-005	5.8505
Unmitigated	1.2544	0.0134	0.8314	7.0000e-005		4.8900e-003	4.8900e-003		4.8900e-003	4.8900e-003	0.0000	5.7911	5.7911	1.4100e-003	8.0000e-005	5.8505

**6.2 Area by SubCategory**

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0680					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.5000e-004	3.8300e-003	1.6300e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4343	4.4343	8.0000e-005	8.0000e-005	4.4606
Landscaping	0.0253	9.5500e-003	0.8298	4.0000e-005		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	1.3568	1.3568	1.3200e-003	0.0000	1.3899
<b>Total</b>	<b>1.2544</b>	<b>0.0134</b>	<b>0.8314</b>	<b>6.0000e-005</b>		<b>4.8900e-003</b>	<b>4.8900e-003</b>		<b>4.8900e-003</b>	<b>4.8900e-003</b>	<b>0.0000</b>	<b>5.7911</b>	<b>5.7911</b>	<b>1.4000e-003</b>	<b>8.0000e-005</b>	<b>5.8505</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1607					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0680					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.5000e-004	3.8300e-003	1.6300e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4343	4.4343	8.0000e-005	8.0000e-005	4.4606
Landscaping	0.0253	9.5500e-003	0.8298	4.0000e-005		4.5800e-003	4.5800e-003		4.5800e-003	4.5800e-003	0.0000	1.3568	1.3568	1.3200e-003	0.0000	1.3899
<b>Total</b>	<b>1.2544</b>	<b>0.0134</b>	<b>0.8314</b>	<b>6.0000e-005</b>		<b>4.8900e-003</b>	<b>4.8900e-003</b>		<b>4.8900e-003</b>	<b>4.8900e-003</b>	<b>0.0000</b>	<b>5.7911</b>	<b>5.7911</b>	<b>1.4000e-003</b>	<b>8.0000e-005</b>	<b>5.8505</b>

**7.0 Water Detail**

---

**7.1 Mitigation Measures Water**

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	33.1559	1.0306	0.0247	66.2830
Unmitigated	40.0793	1.2881	0.0309	81.4747

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	7.2321 / 4.55937	7.3916	0.2365	5.6600e-003	14.9917
General Office Building	32.1609 / 19.7115	32.6877	1.0516	0.0252	66.4830
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>40.0793</b>	<b>1.2881</b>	<b>0.0309</b>	<b>81.4747</b>

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**7.2 Water by Land Use**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	5.78568 / 4.28124	6.1185	0.1892	4.5400e-003	12.2006
General Office Building	25.7287 / 18.5091	27.0374	0.8414	0.0202	54.0825
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>33.1559</b>	<b>1.0306</b>	<b>0.0247</b>	<b>66.2830</b>

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste**

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	44.5240	2.6313	0.0000	110.3064
Unmitigated	44.5240	2.6313	0.0000	110.3064

**8.2 Waste by Land Use**

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	51.06	10.3647	0.6125	0.0000	25.6782
General Office Building	168.28	34.1593	2.0188	0.0000	84.6283
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>44.5240</b>	<b>2.6313</b>	<b>0.0000</b>	<b>110.3064</b>



Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.2 Waste by Land Use**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	51.06	10.3647	0.6125	0.0000	25.6782
General Office Building	168.28	34.1593	2.0188	0.0000	84.6283
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>44.5240</b>	<b>2.6313</b>	<b>0.0000</b>	<b>110.3064</b>

**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
----------------	--------

Block 21 Mixed-Use - PROPOSED PROJECT - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**11.0 Vegetation**

---

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**Block 21 Mixed-Use - EXISTING BASELINE**

**San Mateo County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	4.00	Dwelling Unit	0.25	3,310.40	11
Single Family Housing	3.00	Dwelling Unit	0.65	4,020.80	9
Automobile Care Center	3.10	1000sqft	0.07	3,100.00	0
Gasoline/Service Station	8.00	Pump	0.03	439.80	0
Strip Mall	22.00	1000sqft	0.51	22,000.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	70
<b>Climate Zone</b>	5			<b>Operational Year</b>	2023
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.983	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

- Project Characteristics -
- Land Use - Project site = 1.51 acres
- Construction Phase - No construction calculated this model
- Vehicle Trips - Trip Generation spreadsheet provided by David J. Powers
- Woodstoves - No hearths in apartments
- Energy Use -
- Mobile Land Use Mitigation -

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	4,000.00	3,310.40
tblLandUse	LandUseSquareFeet	5,400.00	4,020.80
tblLandUse	LandUseSquareFeet	1,129.40	439.80
tblLandUse	LotAcreage	0.97	0.65
tblProjectCharacteristics	CO2IntensityFactor	203.98	203.983
tblVehicleTrips	ST_TR	8.14	5.96
tblVehicleTrips	ST_TR	23.72	28.51
tblVehicleTrips	ST_TR	182.17	152.01
tblVehicleTrips	ST_TR	9.54	8.24
tblVehicleTrips	ST_TR	42.04	48.13
tblVehicleTrips	SU_TR	6.28	5.96
tblVehicleTrips	SU_TR	11.88	28.51
tblVehicleTrips	SU_TR	166.88	152.01
tblVehicleTrips	SU_TR	8.55	8.24
tblVehicleTrips	SU_TR	20.43	48.13
tblVehicleTrips	WD_TR	7.32	5.96
tblVehicleTrips	WD_TR	23.72	28.51
tblVehicleTrips	WD_TR	172.01	152.01
tblVehicleTrips	WD_TR	9.44	8.24
tblVehicleTrips	WD_TR	44.32	48.13

**2.0 Emissions Summary**

---

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**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					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Maximum</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**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					
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Maximum</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

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

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

		Highest	
--	--	---------	--

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1754	1.2000e-003	0.0907	8.0000e-005		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.5637	0.2540	0.8177	1.1000e-003	3.0000e-005	0.8552
Energy	2.6000e-003	0.0228	0.0141	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	56.5245	56.5245	5.4800e-003	1.0800e-003	56.9820
Mobile	0.7120	0.5486	5.5125	8.9300e-003	0.9281	6.6900e-003	0.9348	0.2479	6.2000e-003	0.2541	0.0000	822.5223	822.5223	0.0805	0.0477	838.7428
Waste						0.0000	0.0000		0.0000	0.0000	9.1082	0.0000	9.1082	0.5383	0.0000	22.5652
Water						0.0000	0.0000		0.0000	0.0000	0.7879	1.7390	2.5269	0.0812	1.9400e-003	5.1367
<b>Total</b>	<b>0.8899</b>	<b>0.5726</b>	<b>5.6173</b>	<b>9.1500e-003</b>	<b>0.9281</b>	<b>0.0143</b>	<b>0.9424</b>	<b>0.2479</b>	<b>0.0138</b>	<b>0.2617</b>	<b>10.4598</b>	<b>881.0397</b>	<b>891.4995</b>	<b>0.7066</b>	<b>0.0507</b>	<b>924.2818</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1754	1.2000e-003	0.0907	8.0000e-005		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.5637	0.2540	0.8177	1.1000e-003	3.0000e-005	0.8552
Energy	2.6000e-003	0.0228	0.0141	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	56.5245	56.5245	5.4800e-003	1.0800e-003	56.9820
Mobile	0.6351	0.4294	4.3569	5.7300e-003	0.5732	4.8000e-003	0.5780	0.1531	4.4400e-003	0.1575	0.0000	527.9699	527.9699	0.0687	0.0380	540.9985
Waste						0.0000	0.0000		0.0000	0.0000	9.1082	0.0000	9.1082	0.5383	0.0000	22.5652
Water						0.0000	0.0000		0.0000	0.0000	0.7879	1.7390	2.5269	0.0812	1.9400e-003	5.1367
<b>Total</b>	<b>0.8131</b>	<b>0.4535</b>	<b>4.4617</b>	<b>5.9500e-003</b>	<b>0.5732</b>	<b>0.0124</b>	<b>0.5856</b>	<b>0.1531</b>	<b>0.0120</b>	<b>0.1651</b>	<b>10.4598</b>	<b>586.4874</b>	<b>596.9472</b>	<b>0.6947</b>	<b>0.0410</b>	<b>626.5376</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>8.63</b>	<b>20.80</b>	<b>20.57</b>	<b>34.97</b>	<b>38.24</b>	<b>13.23</b>	<b>37.86</b>	<b>38.24</b>	<b>12.75</b>	<b>36.89</b>	<b>0.00</b>	<b>33.43</b>	<b>33.04</b>	<b>1.68</b>	<b>19.16</b>	<b>32.21</b>

**3.0 Construction Detail**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/9/2022	11/8/2022	5	10	

**Acres of Grading (Site Preparation Phase): 0**







Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**3.2 Architectural Coating - 2022**

**Mitigated Construction Off-Site**

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

**4.0 Operational Detail - Mobile**

---

**4.1 Mitigation Measures Mobile**

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.6351	0.4294	4.3569	5.7300e-003	0.5732	4.8000e-003	0.5780	0.1531	4.4400e-003	0.1575	0.0000	527.9699	527.9699	0.0687	0.0380	540.9985
Unmitigated	0.7120	0.5486	5.5125	8.9300e-003	0.9281	6.6900e-003	0.9348	0.2479	6.2000e-003	0.2541	0.0000	822.5223	822.5223	0.0805	0.0477	838.7428

**4.2 Trip Summary Information**

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	23.84	23.84	23.84	55,061	34,006
Automobile Care Center	88.38	88.38	88.38	88,044	54,377
Gasoline/Service Station	1,216.08	1,216.08	1,216.08	700,667	432,741
Single Family Housing	24.72	24.72	24.72	57,093	35,262
Strip Mall	1,058.86	1,058.86	1,058.86	1,630,679	1,007,130
<b>Total</b>	<b>2,411.88</b>	<b>2,411.88</b>	<b>2,411.88</b>	<b>2,531,545</b>	<b>1,563,517</b>

**4.3 Trip Type Information**

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Automobile Care Center	9.50	7.30	7.30	33.00	48.00	19.00	21	51	28
Gasoline/Service Station	9.50	7.30	7.30	2.00	79.00	19.00	14	27	59
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

**4.4 Fleet Mix**

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540
Automobile Care Center	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540
Gasoline/Service Station	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540
Single Family Housing	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540
Strip Mall	0.482872	0.070961	0.228579	0.141538	0.024887	0.006036	0.009864	0.002180	0.001505	0.000612	0.027990	0.000437	0.002540

**5.0 Energy Detail**

Historical Energy Use: Y

**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	30.8219	30.8219	4.9900e-003	6.0000e-004	31.1266
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	30.8219	30.8219	4.9900e-003	6.0000e-004	31.1266
NaturalGas Mitigated	2.6000e-003	0.0228	0.0141	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	25.7026	25.7026	4.9000e-004	4.7000e-004	25.8553
NaturalGas Unmitigated	2.6000e-003	0.0228	0.0141	1.4000e-004		1.7900e-003	1.7900e-003		1.7900e-003	1.7900e-003	0.0000	25.7026	25.7026	4.9000e-004	4.7000e-004	25.8553

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	99853.1	5.4000e-004	4.6000e-003	1.9600e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.3285	5.3285	1.0000e-004	1.0000e-004	5.3602
Automobile Care Center	83576	4.5000e-004	4.1000e-003	3.4400e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4599	4.4599	9.0000e-005	8.0000e-005	4.4864
Gasoline/Service Station	11857	6.0000e-005	5.8000e-004	4.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6327	0.6327	1.0000e-005	1.0000e-005	0.6365
Single Family Housing	168002	9.1000e-004	7.7400e-003	3.2900e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	8.9653	8.9653	1.7000e-004	1.6000e-004	9.0185
Strip Mall	118360	6.4000e-004	5.8000e-003	4.8700e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3161	6.3161	1.2000e-004	1.2000e-004	6.3537
<b>Total</b>		<b>2.6000e-003</b>	<b>0.0228</b>	<b>0.0141</b>	<b>1.3000e-004</b>		<b>1.7900e-003</b>	<b>1.7900e-003</b>		<b>1.7900e-003</b>	<b>1.7900e-003</b>	<b>0.0000</b>	<b>25.7026</b>	<b>25.7026</b>	<b>4.9000e-004</b>	<b>4.7000e-004</b>	<b>25.8553</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	99853.1	5.4000e-004	4.6000e-003	1.9600e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.3285	5.3285	1.0000e-004	1.0000e-004	5.3602
Automobile Care Center	83576	4.5000e-004	4.1000e-003	3.4400e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4599	4.4599	9.0000e-005	8.0000e-005	4.4864
Gasoline/Service Station	11857	6.0000e-005	5.8000e-004	4.9000e-004	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.6327	0.6327	1.0000e-005	1.0000e-005	0.6365
Single Family Housing	168002	9.1000e-004	7.7400e-003	3.2900e-003	5.0000e-005		6.3000e-004	6.3000e-004		6.3000e-004	6.3000e-004	0.0000	8.9653	8.9653	1.7000e-004	1.6000e-004	9.0185
Strip Mall	118360	6.4000e-004	5.8000e-003	4.8700e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.3161	6.3161	1.2000e-004	1.2000e-004	6.3537
<b>Total</b>		<b>2.6000e-003</b>	<b>0.0228</b>	<b>0.0141</b>	<b>1.3000e-004</b>		<b>1.7900e-003</b>	<b>1.7900e-003</b>		<b>1.7900e-003</b>	<b>1.7900e-003</b>	<b>0.0000</b>	<b>25.7026</b>	<b>25.7026</b>	<b>4.9000e-004</b>	<b>4.7000e-004</b>	<b>25.8553</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	14338.4	1.3267	2.1000e-004	3.0000e-005	1.3398
Automobile Care Center	26815	2.4811	4.0000e-004	5.0000e-005	2.5056
Gasoline/Service Station	3804.27	0.3520	6.0000e-005	1.0000e-005	0.3555
Single Family Housing	21081	1.9505	3.2000e-004	4.0000e-005	1.9698
Strip Mall	267080	24.7116	4.0000e-003	4.8000e-004	24.9560
<b>Total</b>		<b>30.8218</b>	<b>4.9900e-003</b>	<b>6.1000e-004</b>	<b>31.1266</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**5.3 Energy by Land Use - Electricity**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	14338.4	1.3267	2.1000e-004	3.0000e-005	1.3398
Automobile Care Center	26815	2.4811	4.0000e-004	5.0000e-005	2.5056
Gasoline/Service Station	3804.27	0.3520	6.0000e-005	1.0000e-005	0.3555
Single Family Housing	21081	1.9505	3.2000e-004	4.0000e-005	1.9698
Strip Mall	267080	24.7116	4.0000e-003	4.8000e-004	24.9560
<b>Total</b>		<b>30.8218</b>	<b>4.9900e-003</b>	<b>6.1000e-004</b>	<b>31.1266</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	0.1754	1.2000e-003	0.0907	8.0000e-005		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.5637	0.2540	0.8177	1.1000e-003	3.0000e-005	0.8552
Unmitigated	0.1754	1.2000e-003	0.0907	8.0000e-005		5.8100e-003	5.8100e-003		5.8100e-003	5.8100e-003	0.5637	0.2540	0.8177	1.1000e-003	3.0000e-005	0.8552

**6.2 Area by SubCategory**

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0185					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1284					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0269	6.0000e-004	0.0384	8.0000e-005		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.5637	0.1685	0.7322	1.0100e-003	3.0000e-005	0.7676
Landscaping	1.5900e-003	6.0000e-004	0.0523	0.0000		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.0855	0.0855	8.0000e-005	0.0000	0.0876
<b>Total</b>	<b>0.1754</b>	<b>1.2000e-003</b>	<b>0.0907</b>	<b>8.0000e-005</b>		<b>5.8100e-003</b>	<b>5.8100e-003</b>		<b>5.8100e-003</b>	<b>5.8100e-003</b>	<b>0.5637</b>	<b>0.2540</b>	<b>0.8177</b>	<b>1.0900e-003</b>	<b>3.0000e-005</b>	<b>0.8552</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0185					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1284					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0269	6.0000e-004	0.0384	8.0000e-005		5.5200e-003	5.5200e-003		5.5200e-003	5.5200e-003	0.5637	0.1685	0.7322	1.0100e-003	3.0000e-005	0.7676
Landscaping	1.5900e-003	6.0000e-004	0.0523	0.0000		2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004	0.0000	0.0855	0.0855	8.0000e-005	0.0000	0.0876
<b>Total</b>	<b>0.1754</b>	<b>1.2000e-003</b>	<b>0.0907</b>	<b>8.0000e-005</b>		<b>5.8100e-003</b>	<b>5.8100e-003</b>		<b>5.8100e-003</b>	<b>5.8100e-003</b>	<b>0.5637</b>	<b>0.2540</b>	<b>0.8177</b>	<b>1.0900e-003</b>	<b>3.0000e-005</b>	<b>0.8552</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.5269	0.0812	1.9400e-003	5.1367
Unmitigated	2.5269	0.0812	1.9400e-003	5.1367

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.260616 / 0.164301	0.2664	8.5200e-003	2.0000e-004	0.5402
Automobile Care Center	0.291651 / 0.178754	0.2964	9.5400e-003	2.3000e-004	0.6029
Gasoline/Service Station	0.106255 / 0.0651241	0.1080	3.4700e-003	8.0000e-005	0.2197
Single Family Housing	0.195462 / 0.123226	0.1998	6.3900e-003	1.5000e-004	0.4052
Strip Mall	1.6296 / 0.998784	1.6563	0.0533	1.2800e-003	3.3687
<b>Total</b>		<b>2.5269</b>	<b>0.0812</b>	<b>1.9400e-003</b>	<b>5.1367</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**7.2 Water by Land Use**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.260616 / 0.164301	0.2664	8.5200e-003	2.0000e-004	0.5402
Automobile Care Center	0.291651 / 0.178754	0.2964	9.5400e-003	2.3000e-004	0.6029
Gasoline/Service Station	0.106255 / 0.0651241	0.1080	3.4700e-003	8.0000e-005	0.2197
Single Family Housing	0.195462 / 0.123226	0.1998	6.3900e-003	1.5000e-004	0.4052
Strip Mall	1.6296 / 0.998784	1.6563	0.0533	1.2800e-003	3.3687
<b>Total</b>		<b>2.5269</b>	<b>0.0812</b>	<b>1.9400e-003</b>	<b>5.1367</b>

**8.0 Waste Detail**

---

**8.1 Mitigation Measures Waste**

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.1082	0.5383	0.0000	22.5652
Unmitigated	9.1082	0.5383	0.0000	22.5652

**8.2 Waste by Land Use**

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1.84	0.3735	0.0221	0.0000	0.9253
Automobile Care Center	11.84	2.4034	0.1420	0.0000	5.9544
Gasoline/Service Station	4.31	0.8749	0.0517	0.0000	2.1675
Single Family Housing	3.78	0.7673	0.0454	0.0000	1.9010
Strip Mall	23.1	4.6891	0.2771	0.0000	11.6170
<b>Total</b>		<b>9.1082</b>	<b>0.5383</b>	<b>0.0000</b>	<b>22.5652</b>

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**8.2 Waste by Land Use**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	1.84	0.3735	0.0221	0.0000	0.9253
Automobile Care Center	11.84	2.4034	0.1420	0.0000	5.9544
Gasoline/Service Station	4.31	0.8749	0.0517	0.0000	2.1675
Single Family Housing	3.78	0.7673	0.0454	0.0000	1.9010
Strip Mall	23.1	4.6891	0.2771	0.0000	11.6170
<b>Total</b>		<b>9.1082</b>	<b>0.5383</b>	<b>0.0000</b>	<b>22.5652</b>

**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
----------------	--------	----------------	-----------------	---------------	-----------

Block 21 Mixed-Use - EXISTING BASELINE - San Mateo County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied**

**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

---