Initial Study and Mitigated Negative Declaration

841 Old County Road Project

Prepared For:

City of San Carlos

PLANNING DIVISION
600 ELM STREET
SAN CARLOS, CA 94070

January 2023

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TABLE OF CONTENTS

page

page

TABLES

FIGURES

ATTACHMENTS

INTRODUCTION TO THIS DOCUMENT

This document serves as the Initial Study and Mitigated Negative Declaration for the 841 Old County Road project ("project"). Full project application materials are available from the City of San Carlos Planning Division for review upon request.

Per CEQA Guidelines (Section 15070), a Mitigated Negative Declaration can be prepared to meet the requirements of CEQA review when the Initial Study identifies potentially significant environmental effects, but revisions in the project and/or incorporation of mitigation measures agreed to by the applicant would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur and there is no substantial evidence in light of the whole record that the project as revised may have significant effect on the environment.

This document is organized in three sections as follows:

- **Introduction and Project Information.** This section introduces the document and presents the project description including location, setting, and specifics of the lead agency and contacts.
- **Mitigated Negative Declaration.** This section lists the impacts and mitigation measures identified in the Initial Study Checklist and proposes findings that would allow adoption of this document as the CEQA review document for the proposed project.
- **Initial Study Checklist.** This section discusses the CEQA environmental topics and checklist questions and identifies the potential for impacts and proposed mitigation measures to avoid these impacts.

Full project application materials are available for review upon request from the Planning Division at City of San Carlos (see contact info below).

STANDARD CONDITIONS

There are regulations and policies applicable to the project that would be considered uniformly applied development policies or standards pursuant to CEQA Guidelines section 15183.3(7), or "Standard Conditions". These Standard Conditions are incorporated into a project regardless of the project's environmental determination, and are therefore considered prior to determination of significance and are not considered mitigation under CEQA. Specifics of applicable Standard Conditions are presented in Table 1 (page 11) and discussed under the relevant topic areas throughout this document.

PUBLIC REVIEW

This Initial Study will be circulated for a 30-day public review period. Comments may be submitted in writing by email or regular mail to the following address:

City of San Carlos
Planning Division
Lisa Costa Sanders, Principal Planner
600 Elm Street
San Carlos, CA 94070
Email: LCostaSanders@cityofsancarlos.org

PROJECT INFORMATION

All figures for the project information are included together on pages 6 through 13.

PROJECT ENTITLEMENTS

Development of the project would require the following approvals from the City of San Carlos: a Planned Development Rezoning, Planned Development Permit, Design Review Permit, Development Agreement, Lot Merger/Lot Line Adjustment (to be determined), Grading and Dirt Haul Certificate, and Transportation Demand Management Program.

Because the project is located in the San Carlos Airport Land Use Compatibility Plan area, the project would be subject to Airport Land Use Commission review and approval.

The project is required to comply with Municipal Regional Permit requirements related to stormwater pollution prevention.

LEAD AGENCY

City of San Carlos
600 Elm Street
San Carlos, CA 94070

CONTACT PERSON

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PROJECT SPONSOR

The Sobrato Organization
Contact: Jeffrey Sobrato
599 Castro Street, Mountain View, CA 94041
Phone: 1-408-691-1125
Email: jeff@sobrato.com

PROJECT LOCATION AND EXISTING USES

The 3.4-acre project site (Assessor's Parcel Numbers 046-133-160, 046-134-050 and -060; 046-135-010, -020, -030, and -040; and 046-182-100, -110, and -150) is located in the City of San Carlos, California. The subject property consists of six legal land parcels with the addresses of 803, 821, 833, 841 and 851 Old County Road, and one legal land parcel that is an unaddressed former railroad spur. The project site is bounded by Bransten Road to the north, Old County Road to the west, Commercial Street to the south, and development and parking on the Commercial Street and Bransten Road parcels to the east. **Figure 1** shows the project location and **Figure 2** shows the project site and existing conditions.

The project site has been developed with one- and two-story buildings and associated asphalt paved roadways and parking area, landscaped areas and a paved yard for gravel, sand, and mulch storage in stacked block stalls. The property at 803, 821, and 833 Old County Road is currently occupied by San Carlos Garden Supply store, a garden supply store for hardscapes, gravel, sand and mulch and storage and sales. The property at 841 Old County Road is currently occupied by NPC Expert Tree Services, a tree pruning and service company. The property at 851 Old County Road is currently occupied by Peninsula Pet Resort, a pet (canine and feline), boarding, daycare, and grooming facility.

The project site is at an elevation of approximately 20 feet above mean sea level and is relatively flat, regionally sloping to the east-northeast. The nearest surface water body is Pulgas Creek, located approximately ¼-mile southwest of the project site. The depth to groundwater is approximately 4 feet below ground surface and the groundwater flow direction is generally to the north.

The site is impacted by contamination from historic and adjacent uses. The main contamination of concern is petroleum-hydrocarbon in the soil and groundwater. Removal of impacted soil is proposed as part of the project as further discussed in Section 9: Hazards and Hazardous Materials.

General Plan Designation / Zoning

Planned Industrial / Heavy Industrial (IH)

Surrounding Land Uses

The project site is located adjacent to industrial uses to the north, office and commercial spaces to the east, and the proposed site of the Alexandria Center for Life Science project to the south. Road and elevated train corridors are adjacent to the project to the west, providing a buffer of at least 250 feet to the development on the far side of El Camino Real, which includes retail, hotel/motel, and mixed-use residential development.

The closest residential uses to the project are located across the rail line and El Camino Real to the west, starting as close as about 500 feet from the project site. The Greater East San Carlos neighborhood has single family homes located as close as approximately 720 feet to the north of the project site.

The San Carlos Airport is located approximately 1,000 feet to the northeast of the project.

Project Description

Overview and Building Massing

The proposed project would involve the demolition of all existing buildings and site improvements and the construction of two new office / research and development (R&D) buildings: a 5-story, 193,852 square foot building, and a 4-story, 131,621 square foot building, with maximum heights of approximately 90 and 113 feet respectively, above a two-level underground parking structure. Project site improvements would also include a courtyard between the buildings, sidewalks, landscaping, and lighting along Commercial Street and Old County Road.

The applicant is targeting life science tenants. While specific tenants have not been identified at this time, this document assumes the highest potential impact in any given environmental topic area given the flexibility in the future mix of office and/or R&D. For example, peak hour trip generation would be highest for 100 percent office occupancy, so that assumption has been used for the analysis of transportation and all-R&D occupancy or a mix of the two types of uses would have trips and related impacts within that analyzed. Emissions would be highest from 100 percent R&D occupancy so that assumption has been used for the emissions analyses and all-office occupancy or a mix of the two types of uses would have emissions and related impacts within that analyzed.

The buildings would be setback approximately 11 feet at ground level along Old County Road, with the north building setback approximately 7 - 8 feet along Bransten Road and the south building setback approximately 2 ½ feet along Commercial Street. The architectural design is intended to respect the San Carlos innovation and industrial character through the use of natural materials, including red brick masonry and terracotta. Upper-level terraces would be incorporated to increase active outdoor spaces that can be used by the tenants.

The project would redevelop a site already provided with utilities and services. Utility connections would be made to lines in adjacent streets that are either already existing or will be upgraded through coordination with the nearby Alexandria Center for Life Science project.

Figure 3 shows site plan. **Figure 4** shows the grading and drainage plan. **Figure 5** shows the utility plan. **Figures 6, 7, and 8** show the building section, elevations, and renderings.

Access & Parking

The project site is accessible by automobile, train, and bus, and would include on-site facilities for pedestrians and bikes.

Rail: The project site is located 0.46 miles south of the San Carlos Caltrain Station, a regional rail corridor that provides connectivity between San Francisco and San Jose, with limited service to Gilroy during commute hours.

Bus: The project site is located approximately 500 feet from the El Camino Real/Arroyo Avenue SamTrans bus stop, serviced by routes ECR, 397, and 398.

Automobile/Truck: Primary project site access is from Commercial Street and Bransten Road, with secondary entrances at the corners of Old County Road.

Bicycle and Pedestrian Access: Pedestrian and bicycle access is available from the Caltrain Station and downtown San Carlos. Changes are planned to provide improved continuous access to transit stations (see Transportation section for more details).

Structured parking would be provided in 2-stories below grade, with approximately 745 parking spaces to serve the office/R&D tenants. In addition, there would be 55 long term/80 short term bicycle parking spaces.

Construction

Project construction activities are anticipated to span approximately 3 years. Demolition and abatement would run approximately 1.5 months, followed by 6 to 7 months for excavation and construction of the underground parking garage. The north building and surrounding site construction is estimated to take 13 months. There may be a break in construction between completion of the north building and initiation of construction of the south building, but for purposes of this analysis, it was assumed construction would proceed without delay, which would result in the most conservative analysis. The south building and surrounding grounds are estimated to span approximately 14 months.

The project would involve removal of contaminated soil and excavation for subsurface parking extending to depths of up to about 25 feet below ground surface. An estimated 121,000 cubic yards of soil is expected to be exported from the project site. Construction dewatering would be necessary during excavation as further discussed in Section 7: Geology and Soils and Section 10: Hydrology and Water Quality.

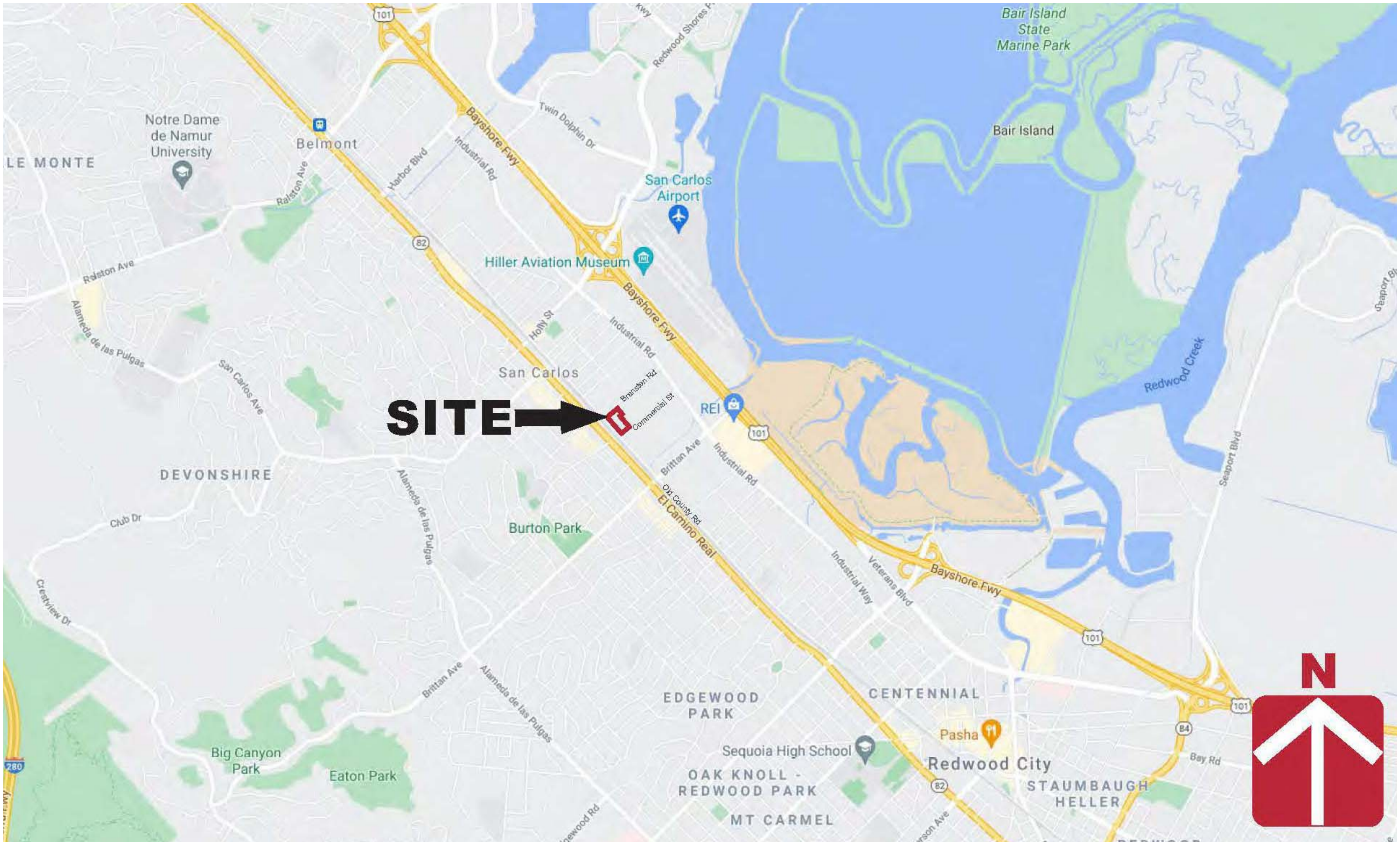

Figure 1: Project Location
Source: Cornerstone Earth Group, 2021

Figure 2: Project Site and Existing Conditions
Source: Google Earth, modified to show site

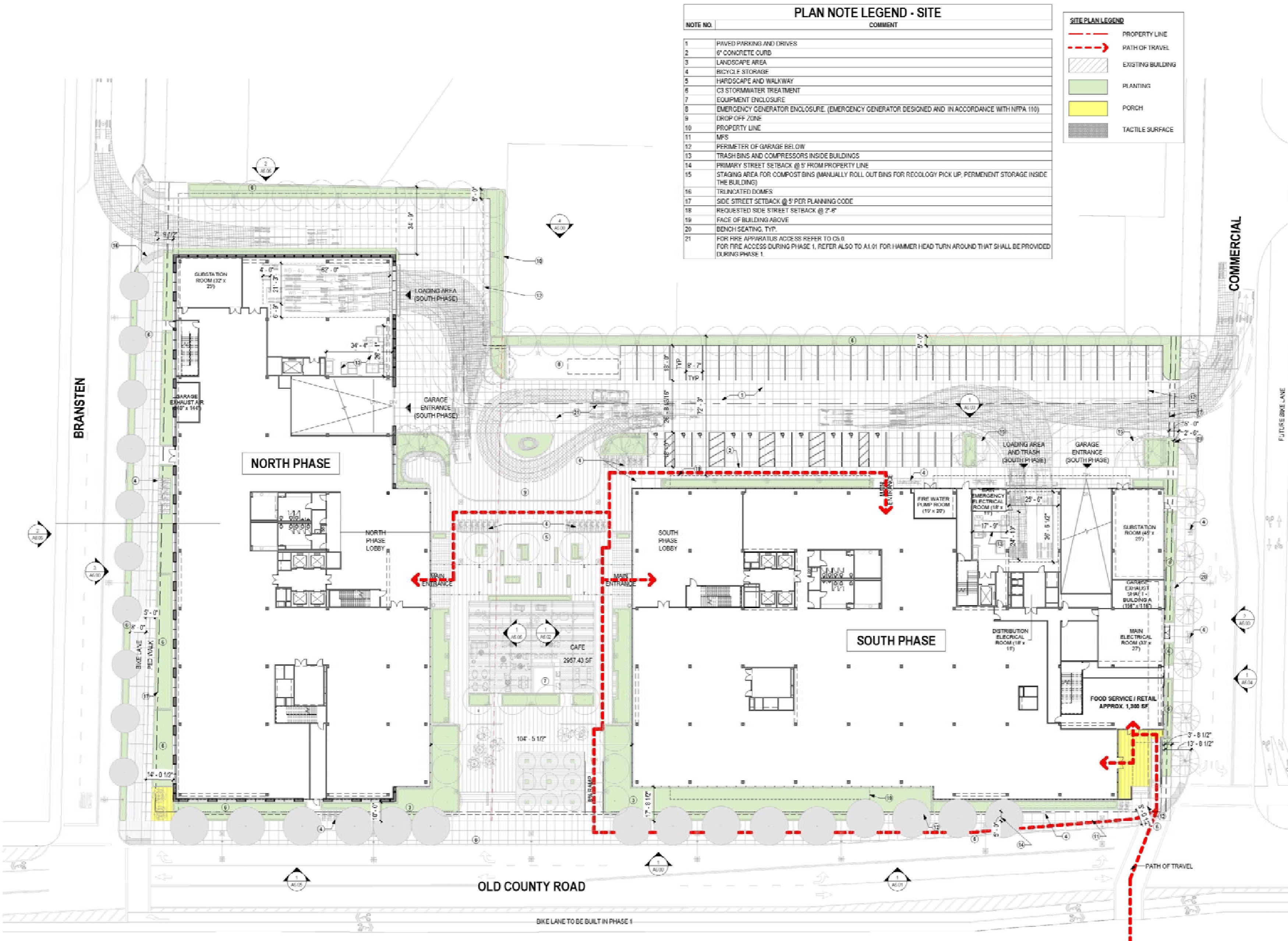

Figure 3: Site Plan
Source: Project Plan Set, dated January 11, 2023

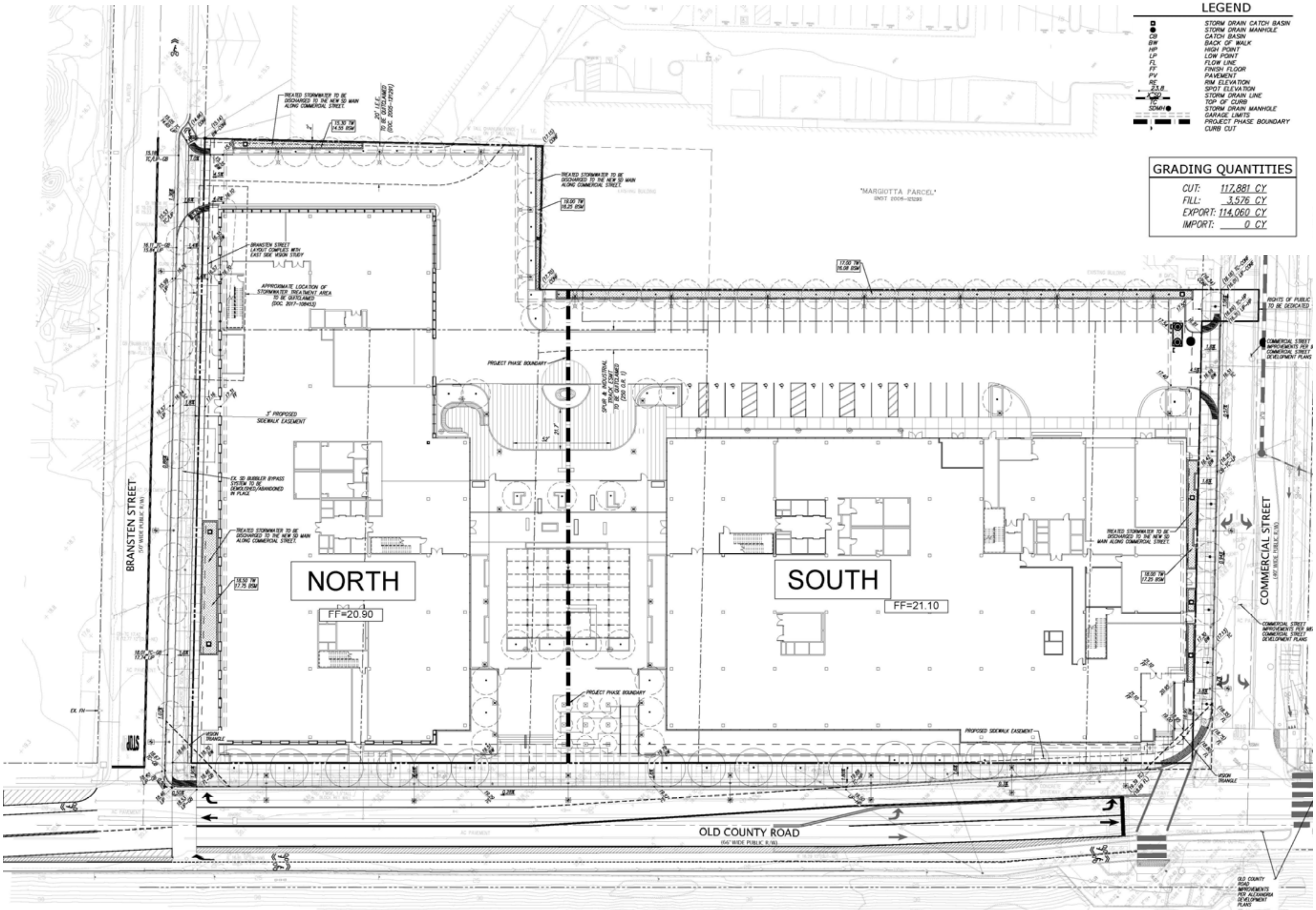

Figure 4: Grading and Drainage Plan

Source: Project Plan Set, dated January 11, 2023

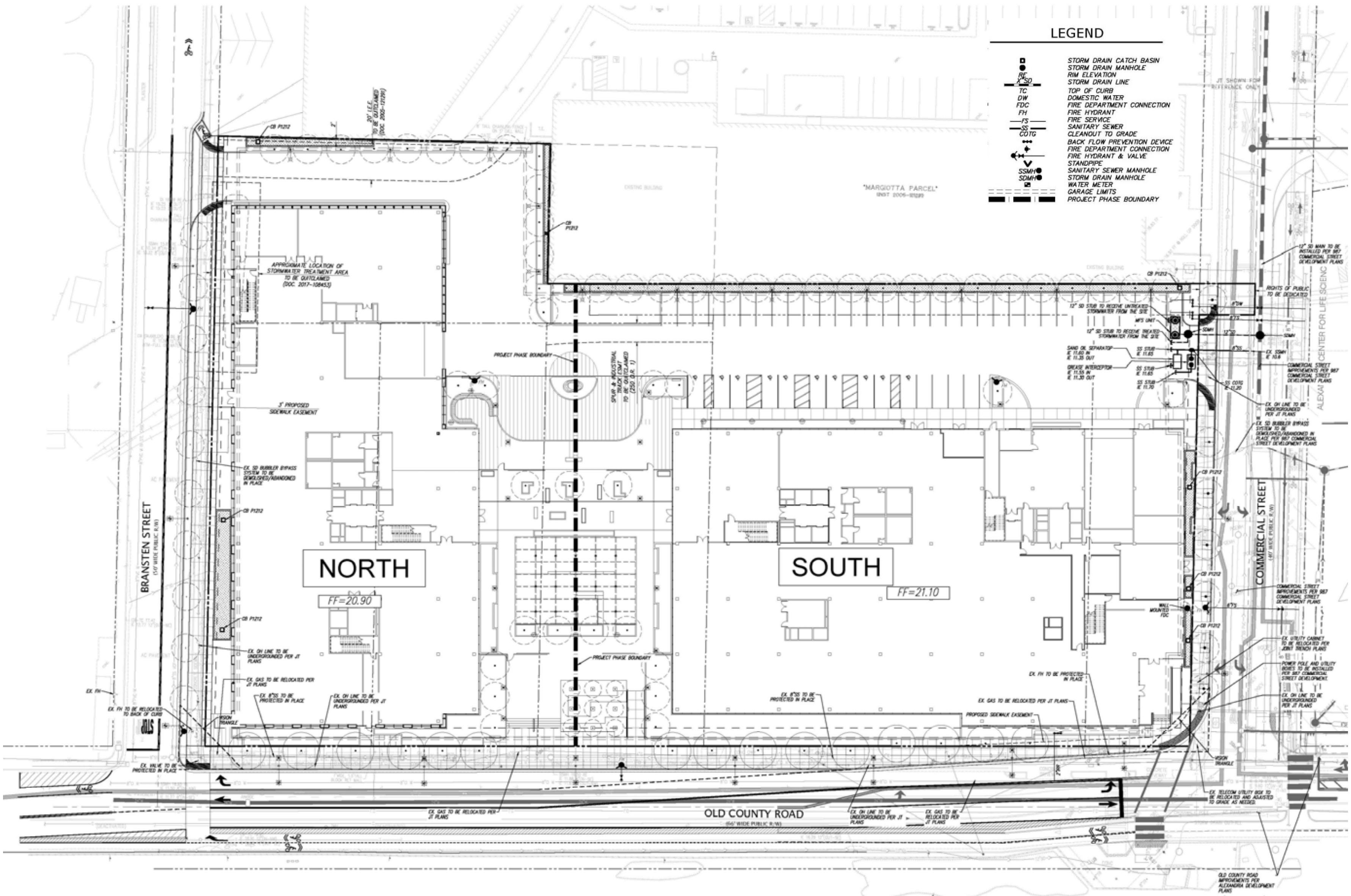

Figure 5: Utility Plan
Source: Project Plan Set, dated January 11, 2023

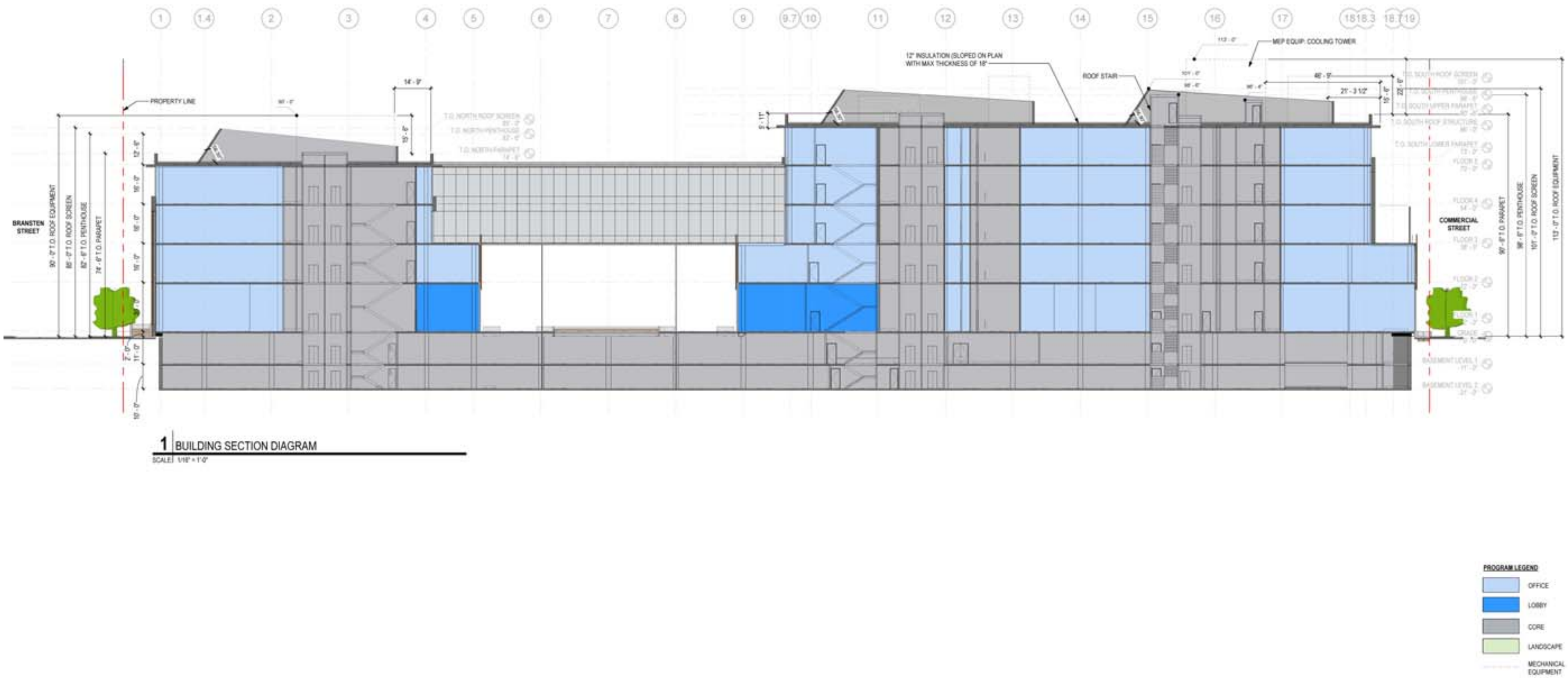

Figure 6: Building Section
Source: Project Plan Set, dated January 11, 2023

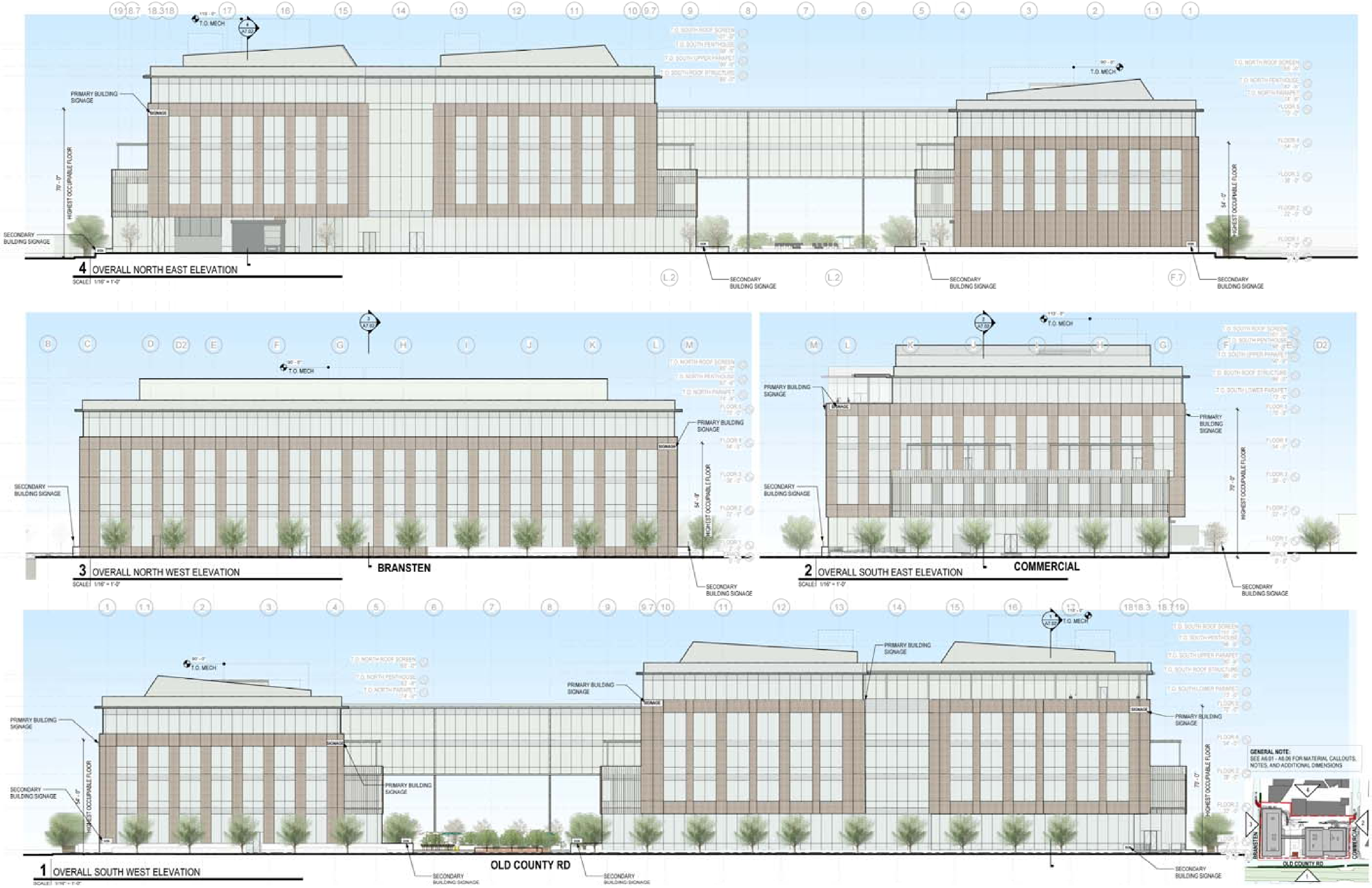

Figure 7: Building Elevations
Source: Project Plan Set, dated January 11, 2023

4 RENDER - COURTYARD VIEW2
SCALE: 12" = 1'-0"

2 RENDER - OLD COUNTY AND COMMERCIAL
SCALE: 12" = 1'-0"

3 RENDER - COURTYARD VIEW1
SCALE: 12" = 1'-0"

1 RENDER - EL CAMINO AERIAL
SCALE: 12" = 1'-0"

Figure 8: Project Renderings
Source: Project Plan Set, dated January 11, 2023

MITIGATED NEGATIVE DECLARATION

PROJECT DESCRIPTION, LOCATION, AND SETTING

This Mitigated Negative Declaration has been prepared for the 841 Old County Road project. See the Introduction and project Information section of this document for details of the project.

STANDARD CONDITIONS

There are regulations and policies applicable to the project that would be considered uniformly applied development policies or standards pursuant to CEQA Guidelines section 15183.3(7), or "Standard Conditions". These Standard Conditions are incorporated into a project regardless of the project's environmental determination and are therefore considered prior to determination of significance and are not considered mitigation under CEQA. The Standard Conditions in **Table 1** below would be applicable to the proposed project.

Table 1: Applicable Standard Conditions

Resource Area/Topic	Standard Condition
Aesthetics	**Exterior Materials.** Pursuant to San Carlos Municipal Code Chapter 18.29, the colors and materials of the structure and improvements shall be in substantial compliance with those presented and described within the application materials. Any changes determined to be significant as determined by the Community Development Director shall be reviewed and approved by the Planning Commission.
Aesthetics	**Exterior Lighting Plan.** Pursuant to San Carlos Municipal Code Chapter 18.29, a final exterior lighting plan with specifications in conformance with the approved plans is subject to review and approval by the Planning Division prior to Building Permit issuance.
Aesthetics	**Signage.** New signs are subject to compliance with San Carlos Municipal Code Chapter 18.22. No signs have yet been approved as part of this project. Any signs that are visible from U.S. Highway 101 shall require approval by the Planning Commission.
Biological Resources	**Protection of Trees.** Pursuant to San Carlos Municipal Code Sections 18.18.070 and 18.41.020, the project proponent shall obtain a permit to remove any tree(s) protected under the City's Interim Protected Tree Ordinance, as determined by an arborist, and shall also prepare a tree protection plan that includes a map of the tree protection zone and is included in the construction drawings and bid package. Removed trees will be replaced in accordance with the ordinance at the discretion of the Community Development Director. If any removed trees are within the jurisdiction of California Department of Fish and Wildlife (CDFW), and CDFW issues a Lake and Streambed Agreement for the project, the tree replacement ratios shall comply with CDFW requirements.
Cultural and Tribal Cultural Resources	**Protection of Human Remains.** If human remains are unearthed during ground-disturbing activities, Section 7050.5(b) and (c) of the California Health and Safety code will be implemented. Section 7050.5(b) and (c) states:

Resource Area/Topic	Standard Condition
	(b) In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. (c) If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. [In which case, section 5097.98 of the California Public Resources Code would apply.]
Hydrology/ Water Quality	**Stormwater Control Plan.** A stormwater and drainage control plan shall be prepared and implemented in compliance with the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), Provision C.3 of the County's Municipal Regional Stormwater NPDES Permit and any other required provisions of the City of San Carlos Municipal Code. The plan shall specify best management practices for the control and prevention of stormwater pollution. The plan shall address both construction-phase and post-construction pollutant impacts from development. Construction-phase measures shall include: erosion control measures such as installing fiber rolls, silt fences, gravel bags, or other erosion control devices around and/or downslope of work areas and around storm drains prior to earthwork and before the onset of any anticipated storm events; monitoring and maintaining all erosion and sediment control devices; designating a location away from storm drains when refueling or maintaining equipment; scheduling grading and excavation during dry weather; and removing vegetation only when absolutely necessary. Post-construction drainage controls shall be specified to capture and treat stormwater onsite.
Geology and Soils	**Compliance with design-level Geotechnical Investigation and Structural Design Plans.** Consistent with plan check procedures for Building Permit consideration, proper foundation engineering and construction shall be performed in accordance with the recommendations of a Registered Geotechnical Engineer and a Licensed Professional Engineer. The structural

Resource Area/Topic	Standard Condition
	engineering design, with supporting Geotechnical Investigation, shall incorporate seismic parameters compliant with the California Building Code.
Noise	**Construction Noise.** Construction Activities shall comply with the City's noise ordinance (Chapter 9.30 of the San Carlo Municipal Code), which includes restriction of construction activities to the hours of 8:00 AM to 5:00 PM on weekdays, and 9:00 AM to 5:00 PM on Saturdays.
Transportation	**Transportation Demand Management (TDM).** Pursuant to Chapter 18.25 of the City of San Carlos Municipal Code and San Mateo County Congestion Management Program Land Use Implementation Policy (C/CAG TDM Policy), a Transportation Demand Management Plan shall be implemented for the life of the project as presented to and approved by the Planning Commission. The owner and/or future tenants shall be responsible for supplying Planning Staff with the contact information for the Designated TDM Contact person. A report documenting the TDM activities undertaken and their results shall be submitted to the Community Development Director annually at the responsibility of the applicant. The Director may impose reasonable changes to assure the program's objectives will be met. The owner and/or future tenants shall be responsible for ensuring that C/CAG TDM Policy requirements and monitoring and reporting are met. As new more efficient and effective TDM measures become available to reduce vehicle trips, these measures may be included or substituted to maintain the trip reduction levels described in the Plan. Any such substitutions shall be to the satisfaction of the Community Development Director. Any changes determined to be substantive or inconsistent with the TDM Plan by the Community Development Director shall require review and approval by the Planning Commission. [Note that if a Transportation Management Association (TMA) is established in San Carlos that can serve the project site, it is expected that the property owner shall participate in the TMA as fulfillment of TDM requirements. The level of financial contribution of the participants in the TMA shall be based on an equitable measure such as square footage (or similar metric) as agreed upon by the participants and the City.]

Potentially Significant Impacts Requiring Mitigation

The following is a list of potential project impacts and the mitigation measures recommended to reduce these impacts to a less than significant level. Refer to the Initial Study Checklist section of this document for a more detailed discussion.

Table 2: Project Impacts and Mitigation Measures

<table>
<tr><th>Potential Impact</th><th>Mitigation Measures</th></tr>
<tr><td colspan="2">Air Quality, Construction Emissions: Construction of the project would result in emissions and fugitive dust. While the project emissions would be below threshold levels, the Bay Area Air Quality Management District (BAAQMD) considers dust generated by grading and construction activities to be a significant impact associated with project development if uncontrolled and recommends implementation of construction management practices to reduce construction-related emissions and dust for all projects, regardless of comparison to their construction-period thresholds.</td></tr>
<tr><td></td><td>Mitigation Measure
Air-1: Basic Construction Management Practices. The project shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD “Basic Construction Mitigation Measures”.
1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District’s phone number shall also be visible to ensure compliance with applicable regulations.</td></tr>
</table>

Biological Resources, Nesting Birds: Trees in the vicinity of the project site could host the nests of common birds that are protected under the federal Migratory Bird Treaty Act and the California Fish and Wildlife Code, so the following mitigation would be applicable to prevent a "take" of these species under these regulations related to disturbance during nesting.	
	Mitigation Measure **Bio-1: Pre-Construction Nesting Bird Survey.** Initiation of construction activities during the avian nesting season (February 15 through September 15) shall be avoided to the extent feasible. If construction initiation during the nesting season cannot be avoided, pre-construction surveys for nesting birds protected by the Migratory Bird Treaty Act of 1918 and/or Fish and Game Code of California within 100 feet of a development site in the project area shall be conducted within 14 days prior to initiation of construction activities. If active nests are found, a 100-foot buffer area shall be established around the nest in which no construction activity takes place. The buffer width may be modified upon recommendations of a qualified biologist regarding the appropriate buffer in consideration of species, stage of nesting, location of the nest, and type of construction activity based upon published protocols and/or guidelines from the U.S. or California Fish and Wildlife Services (USFWS, CDFW) or through consultation with USFWS and/or CDFW. The biologist may also determine that construction activities can be allowed within a buffer area with monitoring by the biologist to and stoppage of work in that area if adverse effects to the nests are observed. The buffer shall be maintained until after the nestlings have fledged and left the nest. These surveys would remain valid as long as construction activity is consistently occurring in a given area and would be completed again if there is a lapse in construction activities of more than 14 consecutive days during the nesting season.
Cultural and Tribal Cultural Resources, Unknown Resources and Remains: There are no known cultural, tribal cultural, or paleontological resources at the site. However, given the moderate to high potential for unrecorded archeological resources and Native American resources and proposed disturbance of native soils which also have the potential to contain paleontological resources, mitigation measures Culture-1, Culture-2, and Culture-3 shall be implemented to address the potential for unexpected discovery of such resources.	
	Mitigation Measures **Culture-1: Further Site Assessment.** Prior to ground disturbance, a qualified consultant shall conduct further archival and field study research to determine the appropriate locations for cultural or tribal cultural resource (historic/archaeological/paleontological/Native American) monitoring during removal of asphalt or concrete, fill, vegetation, or structures. Field study may include, but is not limited to, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of buried archaeological resources. **Culture-2: Archaeological Sensitivity Training.** In anticipation of discovery of unknown archaeological resources during construction, Archaeological Sensitivity Training shall be carried out by a qualified archaeologist for all personnel who will engage in ground disturbing activities on the site. The training shall be conducted at the start of construction and prior to ground disturbance.

	The training shall include suitable photographic materials showing the kinds of artifacts and evidence of prehistoric archaeological sites likely to be found in the area, as well as written and verbal descriptions for archaeological resources and signs of potential archaeological discovery. The training shall also include written materials describing what to do in the event of a discovery, or suspected discovery of archaeological resource. **Culture-3: Protection of Accidentally Discovered Cultural Resources.** In the event that any previously undiscovered cultural resource (historic/ archaeological/paleontological/Native American) are uncovered during ground disturbing activities, all such activity shall cease until these resources have been evaluated by a qualified consultant and specific measures can be implemented to protect these resources in coordination with the City and in accordance with sections 21083.2 and/or 21084.1 of the California Public Resources Code
Geology and Soils, Site Characteristics and Excavation: The San Francisco Bay Area is a seismically active region, and the project includes construction activities require substantial excavation and dewatering. To mitigate the potential for damage to structures or people, the following measure shall be implemented:	
	Mitigation Measure **Geo-1: Excavation Monitoring**. The construction contractor shall implement a monitoring program to monitor the effects of the construction on nearby improvements, including the monitoring of cracking and vertical movement of adjacent structures, nearby streets, sidewalks, parking and other improvements. This shall include the installation of inclinometers or other instrumentation as part of the shoring system to closely monitor lateral movement at locations considered by the geotechnical engineer to be critical areas. The monitoring program shall be active from the beginning of excavation until the framing of the subterranean structure is complete and dewatering ceases.
Hazardous Materials, Site Remediation: The site is impacted by contamination from historic and adjacent uses, mostly due to the historic use of the site as a commercial fueling facility. The main contamination of concern is total petroleum hydrocarbons in the soil and groundwater. Removal of impacted soil is proposed as part of project construction activities and would be performed per requirements of the regulatory agency, the Regional Water Quality Control Board, as outlined in Haz-1.	
	Mitigation Measure **Haz-1: Adherence to Remediation Measures.** The applicant shall work with RWQCB to re-activate the fuel leak case and prepare and implement an agency approved remediation plan. The plan may include preparation of a Site Mitigation Plan to provide procedures and protocols for excavation, waste classification, and transportation/disposal of the contaminated soil; design of an excavation dewatering treatment system to manage the residual contamination in groundwater and excavation water generated during remediation and grading activities and potential off-site up-gradient considerations; evaluation and design, if needed, of a soil vapor barrier extension to the waterproofing system for some or all of the perimeter subterranean garage walls to mitigate chemically-affected soil vapor from

	migrating onto the project site; and further assessment of adjacent down-gradient properties, as required by the RWQCB, to evaluate conditions following completion of the on-site remediation and subgrade construction activities.
Hazardous Materials, Hazardous Building Materials: Because of the age of the existing buildings, there is the possibility for hazardous material from asbestos-containing materials and lead-based paint that could be released during demolition activities if not appropriately abated.	
	Mitigation Measure **Haz-2: Lead-Based Paint and Asbestos Abatement.** Prior to demolition, the applicant shall demonstrate that buildings have been assessed for asbestos-containing materials and lead-based paint and that any suspected such materials have been abated by a licensed abatement contractor and disposed of according to all state and local regulations.
Noise and Vibration, Operational Noise: Because of the location of residences close to the project site, rooftop equipment has the potential to exceed noise ordinance levels and may need to be dampened.	
	Mitigation Measure **Noise-1: Rooftop Mechanical Equipment Noise Assessment and Abatement.** The applicant shall conduct a detailed mechanical noise analysis once rooftop equipment has been selected. If any equipment exceeds 87 dBA at 5 feet, the applicant shall provide silencers, barriers, or other noise mitigation treatments to reduce expected noise levels from the mechanical equipment to within the noise ordinance limits.
Noise and Vibration, Construction Vibration: Because of the proximity of adjacent buildings, there is the possibility for vibrations from construction equipment to damage their structures if not appropriately managed.	
	Mitigation Measure **Noise-2: Construction Vibration Reduction and Monitoring.** Construction Vibration Reduction and Monitoring. Wherever feasible, operation of vibratory rollers shall be avoided within 20 feet of existing buildings and operation of other construction equipment such as large bulldozers or loaded trucks shall be avoided within 10 feet of existing structures on adjacent lots. If vibratory rollers must operate within 20 feet of existing buildings or other major construction equipment must operate within 10 feet of existing buildings, then a vibration monitoring plan shall be prepared and implemented to monitor construction vibration at the nearest structures.

LEAD AGENCY DETERMINATION

On the basis of this evaluation, it can be concluded that:

☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because mitigation measures to reduce these impacts will be required of the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ Although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

INITIAL STUDY CHECKLIST

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

Environmental factors that may be affected by the project are listed alphabetically below. Factors marked with an "X" (☒) were determined to be potentially affected by the project, involving at least one impact that is a potentially significant impact as indicated by the Checklist on the following pages. Unmarked factors (☐) were determined to not be significantly affected by the project, based on discussion provided in the Checklist, including the application of mitigation measures.

☐ Aesthetics	☐ Agricultural/Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards/Hazardous Material
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

There are no impacts that would remain significant with implementation of the identified mitigation measures.

EVALUATION OF ENVIRONMENTAL EFFECTS

The Checklist portion of the Initial Study begins below, with explanations of each CEQA issue topic. Four outcomes are possible, as explained below.

1. A "no impact" response indicates that no action that would have an adverse effect on the environment would occur due to the project.

2. A "less than significant" response indicates that while there may be potential for an environmental impact, there are standard procedures or regulations in place, or other features of the project as proposed, which would limit the extent of this impact to a level of "less than significant."

3. Responses that indicate that the impact of the project would be "less than significant with mitigation" indicate that mitigation measures, identified in the subsequent discussion, will be required as a condition of project approval in order to effectively reduce potential project-related environmental effects to a level of "less than significant."

4. A "potentially significant impact" response indicates that further analysis is required to determine the extent of the potential impact and identify any appropriate mitigation. If any topics are indicated with a "potentially significant impact," these topics would need to be analyzed in an Environmental Impact Report.

1. AESTHETICS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			☒	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			☒	
c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			☒	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			☒	

Under CEQA Section 21099(d), "Aesthetic… impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."

Accordingly, aesthetics is no longer considered in determining if a project has the potential to result in significant environmental effects for projects that meet all three of the following criteria:

1. The project is in a transit priority area. CEQA Section 21099(a)(7) defines a "transit priority area" as an area within one-half mile of an existing or planned major transit stop. A "major transit stop" is defined in CEQA Section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the a.m. and p.m. peak commute periods.

2. The project is on an infill site. CEQA Section 21099(a)(4) defines an "infill site" as either (1) a lot within an urban area that was previously developed; or (2) a vacant site where at least 75 percent of the site perimeter adjoins (or is separated by only an improved public right-of-way from) parcels that are developed with qualified urban uses.

3. The project is residential, mixed-use residential, or an employment center. CEQA Section 21099(a)(1) defines an "employment center" as a project situated on property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a transit priority area.

The proposed project meets all three of the above criteria because the project (1) is in a transit priority area due to the location of the El Camino Real transit corridor (a major transit stop) and San Carlos

Caltrain Station within 0.5 miles from the project site; (2) is on an infill site that has been previously developed and is fully adjoined by urban uses and public rights-of-way within San Carlos; and (3) is an employment center with a projected FAR of 2.19. Thus, this section does not consider aesthetics, including the aesthetic impacts of light and glare, in determining the significance of project impacts under CEQA.

Nevertheless, the City recognizes that the public and decision makers may be interested in information about the aesthetic effects of a proposed project; therefore, the information contained in this section related to aesthetics, light, and glare is provided solely for informational purposes and is not used to determine the significance of environmental impacts pursuant to CEQA.

a) Scenic Vistas

The City has not officially designated any scenic vistas. However, San Carlos General Plan Land Use Element Policies LU-8.19 and LU-9.9 encourage development to minimize obstruction of scenic vistas from major public streets and open spaces, and design review pursuant to Sections 18.29.030 and 18.29.060 of the City's Municipal Code requires new development to respect existing public scenic vistas.

The project site and immediately surrounding areas are generally flat and do not afford substantial long-distance views across the site that could be considered scenic vistas. It is possible the project would change the character of some views from nearby commercial uses and could be visible in some mid-range views from the Greater East San Carlos neighborhood and views from more distant hillside residences, but these views would not qualify as scenic vistas or otherwise protected views nor are these uses from which views would necessarily be protected.

While the project proposes buildings that would be taller than the one-story buildings currently at the site and would be visible from more locations, the project would not substantially interfere with any public scenic vistas.

As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion agrees with the statutory conclusion that the project impact would not be significant.

b) Scenic Highways

There is no designated or eligible State Scenic Highway in the vicinity of the project nor is the project site adjacent to any scenic roadway identified in the City's General Plan.[1, 2]

As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion agrees with the statutory conclusion that the project impact would not be significant.

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1 California Department of Transportation, State Scenic Highway Mapping System, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/scenic_hwy.htm

2 City of San Carlos, *San Carlos 2030 General Plan*, pp.92-95.

c) Visual Character

The project site is currently developed with industrial uses, is zoned and designated for commercial and industrial development, and is surrounded by other sites with industrial/commercial zoning and development.

While the project would increase the height of development at the site (from one- and two- story buildings to four- and five-stories with rooftop projections), increased height would not of itself be considered necessarily negative or a substantial degradation under CEQA.

The project site, as well as the adjacent properties on the north, south, and east sides, are all marked by the City as redevelopment sites, and are being guided by the new East Side Innovation District Vision Plan. The design review process required by Section 18.116.130 of the Zoning Code requires architectural review for all new development in San Carlos prior to the issuance of a building permit. This review process ensures that all new development is aesthetically appropriate in scale and design, and that new buildings maintain the character of the surrounding district. Policy LU-6.6 of the General Plan encourages new development on the East Side to feature high quality architecture that reinforces the character of the area. As detailed in **Standard Condition: Exterior Materials**, included in Table 1, any significant changes to colors or materials used on the exterior of the project from those included in the application materials must be reviewed and approved by the Planning Commission. Also as included in Table 1, **Standard Condition: Signage**, any proposed signage must comply with Municipal Code Chapter 18.22, along with approval by the Planning Commission if the signage is visible from U.S. Highway 101.

As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion agrees with the statutory conclusion that the project impact would not be significant. Additionally, the City would review the proposed design as part of the approval process, which can include considerations beyond those strictly environmental-focused.

d) Light and Glare

Sources of light and glare in the project vicinity include interior and exterior building lights and light from parking lots. Light and glare associated with vehicular traffic along major thoroughfares in the area also create sources of glare. The existing level and sources of light and glare are typical of those in a developed urban setting.

Redevelopment of the project site has the potential to create additional light or glare. The project application is required to include a lighting plan and photometric plan as detailed in **Standard Condition: Exterior Lighting Plan**, included in Table 1, that demonstrates that the project would meet the City's standards that limit the amount of light that can spill over to other properties through the use of downcast lighting fixtures. With adherence to applicable regulations and policies, the project would have a less than significant impact on light and glare in San Carlos.

The project would result in development and lighting treatments typical of the existing commercial and industrial urban settings and consistent with lighting standards to minimize lighting on adjacent areas and would therefore not result in new sources of substantial adverse light or glare. As noted above, this topic is being discussed as an informational item only because the CEQA Guidelines have determined this type of project would not have a significant impact in this regard. This informational discussion agrees with the statutory conclusion that the project impact would not be significant.

2. AGRICULTURE AND FORESTRY RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?				☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				☒

a-e) <u>Agriculture and Forestry Resources</u>

The project site is located in a developed urban area near a highway. No part of the site is zoned for or currently being used for agricultural or forestry purposes or is subject to the Williamson Act. [3] There would be ***no impact*** to agricultural and forestry resources as a result of this project.

[3] City of San Carlos, *San Carlos 2030 General Plan*, p.111.

3. AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			☒	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		☒		
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			☒	
c) Expose sensitive receptors to substantial pollutant concentrations?			☒	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			☒	

This section utilizes information from the Air Quality & Greenhouse Gas Assessment prepared for this analysis by Illingworth & Rodkin, Inc. and dated May 6, 2022, included in full as Attachment A.

a) <u>Air Quality Plan</u>

Projects within San Carlos are subject to the Bay Area Clean Air Plan, first adopted by the Bay Area Air Quality Management District (BAAQMD) (in association with the Metropolitan Transportation Commission and the Association of Bay Area Governments) in 1991 to meet state requirements and those of the Federal Clean Air Act. The plan is meant to demonstrate progress toward meeting the ozone standards, but also includes other elements related to particulate matter, toxic air contaminants, and greenhouse gases. The latest update to the plan, adopted in April 2017, is the Bay Area 2017 Clean Air Plan.

BAAQMD recommends analyzing a project's consistency with current air quality plan primary goals and control measures. The impact would be presumed significant if the project would conflict with or obstruct attainment of the primary goals or implementation of the control measures.

The primary goals of the Bay Area 2017 Clean Air Plan are:

- Attain all state and national air quality standards
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants
- Reduce Bay Area greenhouse gas emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050 (This standard is addressed in Section 8: Greenhouse Gas Emissions.)

The project would be required to comply with all applicable rules and regulations related to emissions and health risk and would not result in a new substantial source of emissions or toxic air contaminants (see items b-d below) or otherwise conflict with the primary goals of the 2017 Clean Air Plan.

The project would be consistent with all rules and regulations related to construction activities and the proposed development would meet current standards of energy and water efficiency (Energy Control Measure EN1 and Water Control Measure WR2) and recycling and green waste requirements (Waste Management Control Measures WA3 and WA4) and does not conflict with applicable control measures aimed at improving access/connectivity for bicycles and pedestrians (Transportation Control Measure TR9) or any other control measures. The project is considered urban infill, would be located near employment centers, and would be located near transit with regional connections.

The project, therefore, would be consistent with the Clean Air Plan and have a ***less than significant*** impact in this regard.

b) Air Quality Standards/Criteria Pollutants

Ambient air quality standards have been established by state and federal environmental agencies for specific air pollutants most pervasive in urban environments. These pollutants are referred to as criteria air pollutants because the standards established for them were developed to meet specific health and welfare criteria set forth in the enabling legislation and include ozone precursors including nitrogen oxides and reactive organic gasses (NOx and ROG), carbon monoxide (CO), and suspended particulate matter (PM_{10} and $PM_{2.5}$). The Bay Area is considered “attainment” for all of the national standards, with the exception of ozone. It is considered “nonattainment” for State standards for ozone and particulate matter.

Past, present, and future development projects contribute to the region’s adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project’s individual emissions contribute to existing cumulatively significant adverse air quality impacts.[4]

BAAQMD updated their Guidelines for air quality analysis in coordination with adoption of new thresholds of significance on June 2, 2010.[5] The most recent version of the Guidelines is dated May 2017.

Project-related air quality impacts fall into two categories: short-term impacts that would occur during construction of the project and long-term impacts due to project operation. BAAQMD’s adopted thresholds are average daily emissions during construction or operation of 54 pounds per day or operational emissions of 10 tons per year of NOx, ROG or $PM_{2.5}$ and 82 pounds per day or 15 tons per year of PM_{10}.

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4 BAAQMD, May 2017, California Environmental Quality Act Air Quality Guidelines, p. 2-1.

5 Bay Area Air Quality Management District. June 2, 2010. News Release http://www.baaqmd.gov/~/media/Files/Communications%20and%20Outreach/Publications/News%20Releases/2010/ceqa_100602.ashx.

Construction and operational emissions for the project were modeled using the California Emissions Estimator Model ("CalEEMod") version 2020.4.0. Project details were entered into the model including the proposed land uses, Transportation Demand Management Plan trip reductions, Peninsula Clean Energy carbon intensity factors, demolition/earthwork volumes, and construction schedule. Model defaults were otherwise used. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks. The CalEEMod inputs and results and EMFAC inputs are included in Attachment A.

Construction Emissions

Construction of the project would involve demolition, excavation, site preparation, building erection, paving, and finishing and landscaping. Although these construction activities would be temporary, they would have the potential to cause both nuisance and health-related air quality impacts.

BAAQMD's adopted thresholds are average daily emissions during construction of 54 pounds per day of NOx, ROG or $PM_{2.5}$ and 82 pounds per day of PM_{10}.

The results from emissions modeling for construction are summarized in **Table 3** (and included in full in Attachment A).

Table 3: Regional Air Pollutant Emissions for Construction

Description	ROG	NOx	PM10[1]	PM2.5[1]
Average Daily Emissions (lbs/day)	14	16	<1	<1
BAAQMD Daily Thresholds (lbs/day)	54	54	82	54
Exceeds Threshold?	*No*	*No*	*No*	*No*

[1] Applies to exhaust emissions only
Source: Illingworth & Rodkin 2021, Table 4 in Attachment A.

Construction-period emissions levels are below BAAQMD thresholds presented in Table 3. However, BAAQMD considers dust generated by grading and construction activities to be a significant impact associated with project development if uncontrolled and recommends implementation of construction mitigation measures to reduce construction-related emissions and dust for all projects, regardless of comparison to their construction-period thresholds. These basic construction management practices are included in Mitigation Measure Air-1, below and would further reduce construction-period criteria pollutant impacts.

Mitigation Measure
Air-1: **Basic Construction Management Practices.** The project applicant/owner/sponsor shall demonstrate proposed compliance with all applicable regulations and operating procedures prior to issuance of demolition, building or grading permits, including implementation of the following BAAQMD "Basic Construction Mitigation Measures".

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of Mitigation Measure Air-1, the impact related to construction-period criteria pollutant impacts would be ***less than significant with mitigation***. Because construction-period emissions would not exceed applicable significance thresholds, additional construction mitigation measures would not be required to mitigate impacts.

Operational Emissions

Emissions from operation of the project could cumulatively contribute to air pollutant levels in the region. These air pollutants include ROG and NOx that affect ozone levels (and to some degree – particulate levels), PM_{10}, and $PM_{2.5}$.

BAAQMD's adopted thresholds are emissions during operations of 54 pounds per day or 10 tons per year of NOx, ROG or $PM_{2.5}$ and 82 pounds per day or 15 tons per year of PM_{10}. Emissions of air pollutants associated with the project were predicted using CalEEMod. This model predicts daily emissions associated with development projects by combining predicted daily traffic activity, including reductions for existing uses and the required Transportation Demand Management (TDM) plan (see Section 17, Transportation and Attachment E), associated with the different land use types, with emission factors from the State's mobile emission factor model (i.e., EMFAC2021). Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2025 if construction begins in 2023. Other sources of operational emissions include two stand-by emergency diesel generators, a cooling tower, water/wastewater use, and solid waste generation. While the project would start with only one generator, the plans include room for a second generator that could be installed by future tenants, so modeling included two generators. The building would be all electric, so no natural gas input was included.

Daily and annual operational air emissions predicted with build-out of the proposed project are reported in **Table 4** and compared against BAAQMD thresholds.

Table 4: Regional Air Pollutant Emissions for Operational Period

Description	ROG	NOx	PM10	PM2.5
Project Annual Emissions (tons/year)	2.54	1.15	2.43	0.63
Existing Use Emissions (tons/year)	0.57	0.48	0.71	0.18
Net Total Operational Emissions (tons/year)	1.96	0.66	1.73	0.45
BAAQMD Thresholds (tons/year)	10	10	15	10
Exceeds Annual Threshold?	*No*	*No*	*No*	*No*
Net Daily Operational Emissions (lbs/day)	10.77	3.63	9.47	2.45
BAAQMD Thresholds (lbs/day)	54	54	82	54
Exceeds Daily Threshold?	*No*	*No*	*No*	*No*

Source: Illingworth & Rodkin, 2022, Table 5 in Attachment A.

As shown in Table 4, project annual and daily emissions are below relevant significance thresholds established by BAAQMD for operational air pollutant emissions.

As vehicular emissions have improved over the years, carbon monoxide hotspots have become less of a concern. BAAQMD presents traffic-based criteria as screening criteria for carbon monoxide impacts, as follows.[6] The project would implement a Transportation Demand Management Program per San Carlos Municipal Code to reduce project trips. The project is therefore consistent with the Congestion Management Plan (CMP) of the San Mateo City/County Association of Governments (C/CAG), which is the first threshold. The other two screening thresholds are whether the project would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour or to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (such as a tunnel or underground parking garage). These hourly traffic volumes are very high and much higher than those in the vicinity. For example, El Camino Real is one of the highest volume roadways in the vicinity and is projected to carry approximately 35,000 vehicles *per day*. Spread over a day, that would be substantially fewer than 44,000 vehicles *per hour*. The project's underground parking garage would serve only project vehicles with expected parking for 745 vehicles, which is again substantially fewer than the threshold of 24,000 vehicles per hour. Therefore, conditions in and around the project would be well below screening levels and the project would not result in individually or cumulatively significant impacts from CO emissions.

[6] Bay Area Air Quality Management District. May 2017. *California Environmental Quality Act Air Quality Guidelines*, p. 3-2, 3-3.

The project is below significance thresholds established by BAAQMD and meets localized CO screening criteria. As a result, the project would have a ***less than significant*** impact on regional air quality during the operational period.

c) Sensitive Receptors

A toxic air contaminant (TAC) is defined by California law as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. In the Bay Area, a number of urban or industrialized communities exist where the exposure to TACs is relatively high compared to other communities. According to the BAAQMD CEQA Guidelines, the project site is not in an impacted community.[7]

BAAQMD's adopted thresholds for the purpose of assessing impacts of a proposed project on exposure of sensitive receptors to risks and hazards in an area that is not an identified impacted community are a project-specific cancer risk exceeding 10 in one million (or cumulative risk of 100 in one million), a non-cancer risk exceeding a Hazard Index of 1.0 (or a cumulative Hazard Index of 10.0), and/or the annual average $PM_{2.5}$ concentration exceeding 0.3 $\mu g/m^3$ (or 0.8 $\mu g/m^3$ cumulatively).

Certain population groups, such as children, the elderly, and people with health problems, can be particularly sensitive to air pollution. With respect to air pollutants, examples of sensitive receptors include health care facilities, retirement homes, school and playground facilities, and residential areas. The project itself is not considered a sensitive receptor. The closest sensitive receptors to the project site are the residences to the south, west, and north, as well as The Children's Place Preschool and Little Learners Preschool, all located about 500 feet or more from the project site. Risks are reported for the maximally exposed individual, which is the sensitive receptor identified as the most impacted. Age sensitivity factors are applied to address increased risks depending on age.

A community health risk assessment was performed using the recommended EPA dispersion model AERMOD to factor in receptor locations and meteorological conditions as included in full in Attachment A and summarized below.

Construction activity that uses traditional diesel-powered equipment results in the emission of diesel particulate matter including fine particulate matter, which is considered a TAC. The generation of these emissions would be temporary, confined to the construction-period, and are factored into the community risk prior to the operational period. Construction-period and operational risk are shown in **Table 5**.

Operational emissions from the proposed emergency generators and cooling tower would also contribute to community risk. The project proposes to include one stand-by emergency diesel generator located on the northeastern boundary of the property to power both buildings in the event of a power failure. The project also proposes to leave room for a second generator to be installed by the tenant. Diesel emergency generators emit DPM and are subject to BAAQMD permitting. Other than under emergency conditions, emergency generators would be operated primarily for testing and maintenance purposes, which is typically less than 1 hour at a time, and would be limited under BAAQMD permitting to a total of up to 50 hours per year. The project also proposes a cooling tower on the roof of the proposed southern building. A cooling tower is an air-conditioning system that uses water and air as heat exchangers to cool a building. Particulate matter

[7] Bay Area Air Quality Management District. May 2017. *California Environmental Quality Act Air Quality Guidelines*, Figure 5-1.

emissions from such evaporative cooling can occur because emitted water droplets can contain dissolved solids that can become small particulate matter (i.e., PM10 and PM2.5) emissions. The cooling towers are not powered by a diesel engine, so no DPM emissions would be produced.

Table 5: Construction and Operation Risk (Unmitigated)

Source	Cancer Risk (per million)	Annual PM25 (µg/m3)	Hazard Index
Project Construction (Years 0-4)	4.10	0.02	<0.01
Project Generator Operation (Years 4-30)	0.11	0.01	<0.01
Project Cooling Towers (Years 4-30)	--	<0.01	--
Total/Maximum Project Risk, Unmitigated	4.21	0.02	<0.01
BAAQMD Single-Source Threshold	10	0.3	1.0
Exceed Threshold?	No	No	No

Source: Illingworth & Rodkin, 2022, Table 6 in Attachment A.

As shown in Table 5, construction-period project health risks combined with operational period health risks to off-site sensitive receptors would not exceed project-specific threshold levels.

While specific tenants have not yet been identified, this type of project is also likely to include research laboratories with fume hoods. Laboratory fume hoods would be required to employ appropriate exhaust systems to control any emission of air pollutants. Emissions of air pollutants or TACs are subject to BAAQMD permitting requirements that would require the District to apply all applicable rules and regulations to limit or control these emissions. Regulation 2, Rule 1: General Requirements, and Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants would apply to any potential emissions from these sources. The District's risk policy is to not issue a permit to any source that would cause a cancer risk of greater than 10 chances per million. Therefore, although the specifics of the laboratory and fume hood emissions is not quantifiable at this time, the quantities that would be emitted would by regulation remain below applicable threshold levels and the project-specific community health impact would be ***less than significant***.

Community health risk assessments typically also look at all substantial sources of TACs located within 1,000 feet of the project site (i.e., influence area). These sources can include railroads, freeways or highways, high-volume surface streets, and stationary sources permitted by BAAQMD.

The project vicinity includes three high volume roadways with average daily traffic (ADT) above 10,000 (El Camino Real, Old County Road and Commercial Steet), Caltrain and freight rail, seven stationary sources of air pollution, and the site of the proposed Alexander Center for Life Science (ACLS), which would be anticipated to undergo simultaneous construction with this project and introduce an additional twelve stationary sources in the form of emergency generators. Therefore, an additional cumulative community risk analysis is warranted. The cumulative cancer risk, hazard index, and annual $PM_{2.5}$ concentrations are summarized in **Table 6**.

Table 6: Cumulative Community Risk (Unmitigated)

Source	Cancer Risk (per million)	Annual PM25 ($\mu g/m^3$)	Hazard Index
Total/Maximum Project Risk (Years 0-30)	4.21	0.02	<0.01
Additional Cumulative Sources			
El Camino Real, ADT 35,086	4.43	0.28	<0.01
Old County Road, ADT 34,472	3.42	0.13	<0.01
Commercial Street, ADT 34,472	1.31	0.04	<0.01
Caltrain and freight rail	28.80	0.06	<0.01
ACLS project generators	<0.01	<0.01	<0.01
ACLS project Construction Emissions	7.03	0.19	<0.03
CEMEX concrete manufacturing (facility ID #2939)	0.36	0.67	0.01
Other stationary sources	<2.21	<0.04	<0.06
All Cumulative Sources	<51.78	**<1.44**	<0.16
BAAQMD Cumulative Source Threshold	100	**0.8**	10.0
Exceed Threshold?	*No*	***Yes***	*No*

Notes: Risks in this table are reported for the maximally exposed individual, factoring in age-sensitivity.

Source: Illingworth & Rodkin, 2022, Table 7 in Attachment A

As shown in Table 6, the cumulative source threshold for $PM_{2.5}$ is exceeded for the maximally exposed individual due largely to proximity to the CEMEX facility, which represent 47% of the cumulative $PM_{2.5}$ volumes. However, because the project-specific risk would not exceed the single source thresholds, contributing approximately 1.4% of the total cumulative $PM_{2.5}$ level, per BAAQMD guidance, the project would not be considered to have a cumulatively considerable contribution to this impact. It can also be noted that during the course of analysis of this project, a proposal has been submitted to the City to remove the CEMEX facility and redevelop the site with office/R&D uses, which would lower cumulative risk. Therefore, the project's impact related to exposure of sensitive receptors would be ***less than significant***.

d) Other Emissions

Odors from construction activities are associated with construction equipment exhaust and the application of asphalt and architectural coatings. Odors emitted from construction activities would be temporary and not likely to be noticeable much beyond a project site's boundaries. The proposed office/R&D use is consistent with the type of development in the area and is not a use type considered by BAAQMD to be a source of substantial objectionable odors.[8] Therefore, the potential for objectionable odor impacts to adversely affect a substantial number of people is ***less than significant***.

[8] Bay Area Air Quality Management District. May 2017. *California Environmental Quality Act Air Quality Guidelines*, Table 3-3.

4. BIOLOGICAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		☒		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?				☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			☒	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				☒

a, b) Special Status Species and Habitat. The project site consists entirely of developed land and has been under industrial or commercial usage for many decades. It is situated within an urbanized area and is surrounded on all sides by commercial or transportation uses. As would be expected for a project in such conditions, the General Plan EIR identified no biological habitat or occurrences of sensitive species on or adjacent to the project site.[9] The site and its vicinity have little or no habitat value and would not have a substantial adverse effect, either directly or through habitat modifications, on special status species, except for possibly migrating birds, as discussed below.

That being said, the federal Migratory Bird Treaty Act and Fish and Game Code of California protect special-status bird species year-round, as well as their eggs and nests during the nesting season.

[9] City of San Carlos, *San Carlos 2030 General Plan EIR*, June 2009, Chapter 4.3: Biological Resources.

The list of migratory birds includes almost every native bird in the United States. On-site or adjacent trees could be used by protected birds. Construction activities could adversely affect nesting birds protected by the Migratory Bird Treaty Act and/or Fish and Game Code of California.

Mitigation Measure

Bio-1: **Pre-Construction Nesting Bird Survey.** Initiation of construction activities during the avian nesting season (February 15 through September 15) shall be avoided to the extent feasible. If construction initiation during the nesting season cannot be avoided, pre-construction surveys for nesting birds protected by the Migratory Bird Treaty Act of 1918 and/or Fish and Game Code of California within 100 feet of a development site in the project area shall be conducted within 14 days prior to initiation of construction activities. If active nests are found, a 100-foot buffer area shall be established around the nest in which no construction activity takes place. The buffer width may be modified upon recommendations of a qualified biologist regarding the appropriate buffer in consideration of species, stage of nesting, location of the nest, and type of construction activity based upon published protocols and/or guidelines from the U.S. or California Fish and Wildlife Services (USFWS, CDFW) or through consultation with USFWS and/or CDFW. The biologist may also determine that construction activities can be allowed within a buffer area with monitoring by the biologist to and stoppage of work in that area if adverse effects to the nests are observed. The buffer shall be maintained until after the nestlings have fledged and left the nest. These surveys would remain valid as long as construction activity is consistently occurring in a given area and would be completed again if there is a lapse in construction activities of more than 14 consecutive days during the nesting season.

With implementation of mitigation measure Bio-1, which requires avoidance of nesting season or a nesting survey and buffers from any nests as appropriate, the impact related to special-status and non-status bird species would be ***less than significant with mitigation***.

c, d) <u>Wetlands and Wildlife Corridors</u>

The proposed project site is currently developed and does not contain wetland areas. It is an urban area that does not have the potential to be used as a significant wildlife corridor. The project has ***no impact*** on wetlands and wildlife corridors.

e) <u>Local Policies and Ordinances</u>

There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan that covers the project site. The project would have a significant environmental impact if it were to conflict with any local policies or ordinances protecting biological resources. San Carlos Municipal Code Sections 18.18.070 and 18.41.020 related to protected trees are applicable to the site, as detailed in **Standard Condition: Protection of Trees**, included in Table 1.

The San Carlos Municipal Code sets forth regulations for “protected trees” which are defined as “heritage” or “significant” trees. Removal of any protected tree requires approval by the Community Development Director. In granting a tree removal permit, the Director may attach reasonable conditions to ensure compliance with the content and purpose of this chapter, such as, but not limited to, requiring replacement of trees removed with plantings acceptable to the Director.

There are currently 6 trees on the project site, with 4 street trees located along Bransten Road and two within the parking lot/landscape area, all of which would be removed during demolition activities. These include 4 Bradford pear trees (Pyrus calleryana ‘Bradford’) and two Mexican fan palms (Washingtonia robusta). Based on trunk size, 4 of the trees would be considered protected trees under the City’s Municipal Code and would require appropriate approval for removal. A total of 112 new trees are proposed to be planted on site as part of the proposed development.

The removal of the trees at the site would not intrinsically be considered an environmental impact because the trees proposed for removal are neither endangered nor special-status from a state and federal biological standpoint, and implementation of requirements in Standard Condition: Protection of Trees would ensure consistency with applicable plans and policies. Therefore, the impacts related to local biological policy conflicts would be ***less than significant***.

f) <u>Conservation Plans</u>

There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan that cover the project site. There would be ***no impact*** related to conflict with conservation plans.

5. CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Section 15064.5?			☒	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Public Resources Section 15064.5?		☒		
c) Disturb any human remains, including those interred outside of formal cemeteries?			☒	

This section utilizes information from the Historic Resource Evaluation prepared for this analysis by Preservation Architecture, and dated March 15, 2022, included in full in Attachment B.

a) Historic Resources

Portions of the existing structures were built in 1977 and 1978, so do not qualify as historic by age (50+ years is considered historic-age). According to the Historic Resource Evaluation (Attachment B), the remaining structures are without historical design or construction distinction. No detailed evidence of the buildings' origins was able to be located, and no original architects or engineers were identifiable. While associated by proximity and by their mid-20th century building supply uses, which were common in this locale in that period, the properties and buildings have no design or construction relationships. They were not unified by shared ownership or users, nor have any important persons been identified as individually associated with these properties and buildings. Additionally, the subject parcels and their buildings are not directly associated with any events of historic significance because no individual discoveries, innovations or inventions of importance are identifiably associated. Based on these findings, the existing structures would not be considered significant historic resources under CEQA and the project would have a ***less than significant impact*** on historic resources.

b) Archaeological Resources

The project site has been previously developed and is predominantly covered by paving and structures.

There are only a few known archaeological sites in the city, located primarily near the banks of Cordilleras and Pulgas Creeks (located over 500 feet from the project site).[10] A records search of the Northwest Information Center (included in Attachment B) confirmed the lack of recorded resources at the project site. However, due to the project site location and characteristics of the area, the

10 City of San Carlos, Adopted October 2009, 2030 General Plan, Land Use Element, p. 76.

potential for discovery of unrecorded historic-period archaeological resources or Native American archaeological resources are considered moderate and moderate to high respectively. Native American resources are discussed further in the Section 18, Tribal Cultural Resources.

Given the moderately high potential for unrecorded archeological resources and Native American resources, mitigation measures Culture-1, Culture-2, and Culture-3 shall be implemented.

Mitigation Measures

Culture-1: **Further Site Assessment.** Prior to ground disturbance, a qualified consultant shall conduct further archival and field study research to determine the appropriate locations for cultural or tribal cultural resource (historic / archaeological / paleontological / Native American) monitoring during removal of asphalt or concrete, fill, vegetation, or structures. Field study may include, but is not limited to, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of buried archaeological resources.

Culture-2: **Archaeological Sensitivity Training.** In anticipation of discovery of unknown archaeological resources during construction, Archaeological Sensitivity Training shall be carried out by a qualified archaeologist for all personnel who will engage in ground disturbing activities on the site. The training shall be conducted at the start of construction and prior to ground disturbance.

The training shall include suitable photographic materials showing the kinds of artifacts and evidence of prehistoric archaeological sites likely to be found in the area, as well as written and verbal descriptions for archaeological resources and signs of potential archaeological discovery. The training shall also include written materials describing what to do in the event of a discovery, or suspected discovery of archaeological resource.

Culture-3: **Protection of Accidentally Discovered Cultural Resources.** In the event that any previously undiscovered cultural resource (historic/archaeological/ paleontological/Native American) are uncovered during ground disturbing activities, all such activity shall cease until these resources have been evaluated by a qualified consultant and specific measures can be implemented to protect these resources in coordination with the City and in accordance with sections 21083.2 and/or 21084.1 of the California Public Resources Code.

Implementation of requirements in Standard Condition: Protection of Human Remains and Mitigation Measures Culture-1, Culture-2, and Culture-3 would reduce the impacts associated with possible disturbance of unidentified cultural resources at the project site to a level of ***less than significant with mitigation***.

c) <u>Human Remains</u>

There are no known human remains that would be disturbed by the proposed project. If human remains are found during construction activities at the project site, they would be handled according to relevant regulations as detailed in **Standard Condition: Protection of Human Remains**, included in Table 1. Therefore, the impacts related to human remains would be ***less than significant***.

6. ENERGY Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			☒	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			☒	

a, b) Energy

The threshold of significance related to energy use is whether the project would result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct state or local plans for renewable energy or energy efficiency.

The project would include short-term demolition and construction activities that would consume energy, primarily in the form of diesel fuel (e.g., mobile construction equipment), gasoline (e.g., vehicle trips by construction workers), and electricity (e.g., power tools). Energy would also be used for conveyance of water used in dust control, transportation and disposal of construction waste, and energy used in production and transport of construction materials.

During operation, energy demand from the project would include fuel consumed by employee and delivery vehicles, and electricity consumed by the proposed structures, including lighting, research equipment, water conveyance, heating and air conditioning.

Energy usage for the project was calculated based on energy usage and vehicle miles travelled information from the emissions modeling and is included in full in Attachment C. **Table 7** shows a summary of the project's estimated total construction energy consumption and annual operational energy consumption.

As shown in **Table 7**, project construction would require what equates to 26,712 MMBtu[11] of energy use. The project would implement construction management practices per mitigation measure Air-1 (See Air Quality Section). While focused on emissions and dust reduction, the construction management practices would also reduce energy consumption through anti-idling measures and proper maintenance of equipment. The project would comply with the 2019 requirements of the California Green Building Standards Code (CALGreen) to divert a minimum of 65 percent of construction and demolition debris. Therefore, the project would not involve the inefficient, wasteful, and unnecessary use of energy during construction, and the project's construction energy consumption.

[11] MMBtu stands for Metric Million British Thermal Unit. For comparison purposes in this analysis, all forms of energy usage have been converted to MMBtu even though different types of energy would originally be measured in different units. See the energy Calculations in Attachment C for additional details.

Table 7: Construction and Operational Energy Usage

Source	Energy Consumption	
	Amount and Units	**Converted to MMBtu**
Construction Energy Use (Total)		
Construction Worker Vehicle Trips (Gasoline)	51,301 gallons	5,632 MMBtu
Construction Equipment and Vendor/Hauling Trips (Diesel)	153,439 gallons	21,080 MMBtu
	Total Construction Energy Use	***26,712 MMBtu***
Operational Vehicle Fuel Use (Gross Annual)		
Gasoline	202,787 gallons	22,263 MMBtu
Diesel	41,447 gallons	5,694 MMBtu
Operational Built Environment (Gross Annual)		
Electricity	4.15 GWh	14,167 MMBtu
Natural Gas Usage	0 kBtu	0 MMBtu
	Total Gross Annual Operational Energy Use	***42,124 MMBtu***

Note: The energy use reported in this table is gross operational energy use for the proposed project with no reduction to account for energy use of existing uses.

Source: Energy Calculations included as Attachment C

As also shown in Table 7, project annual energy consumption would equate to 42,124 MMBtu of energy use. Consistent with the City's Reach Code, the project has proposed all-electric construction with no gas connections. The project's required TDM plan (see Section 17, Transportation) will also include various measures designed to reduce total vehicle trips.

When subtracting existing operational fuel and built environment energy use from the project totals above, the total net increase in annual operational energy use would be 33,178 MMBtu (see Attachment C for additional detail).

As detailed in Section 17: Transportation, with implementation of the required TDM Plan, the project would result in low levels of vehicle travel relative to regional averages and would help meet regional efforts to reduce vehicle travel and therefore related vehicular consumption of fuel energy.

As detailed in Section 3: Air Quality and Section 8: Greenhouse Gas Emissions, the project is also consistent with regional and local climate actions plans. The project incorporates energy and energy-related efficiency measures meeting all applicable requirements, including water and waste efficiency. The project would be required to comply with all standards of the City's Reach Code, Title 24 of the California Code of Regulations, and CALGreen, as applicable, aimed at the incorporation of energy-conserving design and construction.

While representing a change from the former uses at the site, the project is consistent with the type of development in the area and allowed under the land use designation and zoning.

Therefore, although the project would incrementally increase energy consumption, it would not result in a significant impact related to energy consumption in a wasteful, inefficient, or unnecessary manner or otherwise conflict with energy plans and the impact in this regard would be ***less than significant***.

7. GEOLOGY AND SOILS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42)				☒
ii) Strong seismic ground shaking?			☒	
iii) Seismic-related ground failure, including liquefaction?			☒	
iv) Landslides?				☒
b) Result in substantial soil erosion or the loss of topsoil?			☒	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		☒		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			☒	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		☒		

This section utilizes information from the Design-Level Geotechnical Investigation prepared for the applicants by Cornerstone Earth Group, dated July 16, 2021, which is available as part of the project application materials.

a, c, d) <u>Geologic Hazards</u>

There are no faults traces across the site and therefore, fault rupture hazard is not a significant impact. However, the San Francisco Bay Area is a seismically active region, and the site is likely to encounter strong seismic ground shaking during the lifetime of the project.

Landslides are downward and outward movements of slope-forming materials such as rock, soil, and artificial fill. Landslides occur on some of the upper hilly slopes, more commonly in the western area of the city. There are no hillsides near the project site and therefore would be no impact resulting from landslides.

The project site is underlain with 1.5 to 11 feet of highly variable undocumented fill consisting of generally medium stiff sandy lean clays and dense to very dense clayey sands with variable amounts of gravel. Beneath the fill is variable including hard sandy lean clay followed by medium dense clayey sand or very dense poorly graded sand with silty, medium stiff to very stiff lean clays with varying amounts of sand and medium dense clayey sands with gravel. Below these layers the site is generally underlain by deep alluvial soils consisting of medium stiff to very stiff clays interbedded with occasional layers of medium dense to dense sands. Given the characteristics of the soils, the site was concluded to have the following characteristics:

- moderate to high expansion potential to wetting and drying cycles,
- high potential for liquefaction that could result in total settlement of ½ inch or less
- low potentially for lateral spreading to affect the site
- low potential for significant differential seismic settlement affecting the proposed structures.

The geotechnical analysis concluded that the potential geological hazards can be addressed through proposed excavation and appropriate design and construction, which would occur as part of the standard design-level geotechnical recommendations and structural plans as specified in Standard Conditions: Compliance with design-level Geotechnical Investigation and Structural Design Plans, as included in Table 1.

Due to the extent of the proposed excavation for below grade parking, the Geotechnical Investigation identified a significant potential to affect nearby private structures and parking areas and/or public sidewalks and roadways outside of the project site during excavation and dewatering, which may include cracking or vertical movement. In addition to implementation of the Standard Condition above requiring conformance with design-level geotechnical recommendations, the following mitigation measure would reduce the risk of damage to nearby improvements due to the potential for ground instability during construction activities at the site.

Mitigation Measure

Geo-1: **Excavation Monitoring.** The construction contractor shall implement a monitoring program to monitor the effects of the construction on nearby improvements, including the monitoring of cracking and vertical movement of adjacent structures, nearby streets, sidewalks, parking and other improvements. This shall include the installation of inclinometers or other instrumentation as part of the shoring system to closely monitor lateral movement at locations considered by the geotechnical engineer to be critical areas. The monitoring program shall be active from the beginning of excavation until the framing of the subterranean structure is complete and dewatering ceases.

Implementation of mitigation measure Geo-1 and Standard Condition: Compliance with design-level Geotechnical Investigation and Structural Design Plans would reduce the effects of geologic hazards caused by seismic activities and expansive or unstable soils to ***less than significant with mitigation***.

b) Soil Erosion

The project would be subject to a National Pollution Discharge Elimination System (NPDES) permit from the Regional Water Quality Control Board (RWQCB). The construction contractors would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and an Erosion Control Plan. The SWPPP must describe the site, the project, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, control of post-construction sediment and erosion control measures, maintenance responsibilities, and management controls. All construction activities would be required to comply with Chapters 18 and 33 and Appendix J of the City Building Code, which regulate excavation activities, the construction of foundations and retaining walls, and grading activities, including drainage and erosion control. Soil erosion after construction would be controlled by implementation of approved landscape and irrigation plans. With required implementation of a SWPPP and Erosion Control Plan to prevent erosion, sedimentation, and loss of topsoil during and following construction, the soil erosion impacts of the project would be ***less than significant.***

e) Septic Tanks

The project would not include the use of septic tanks and associated disposal facilities. Therefore, the project would have ***no impact*** in this regard.

f) Unique Geologic Feature or Paleontological Resource

The site is generally flat and currently developed and there are no unique geologic features at the site. There are no known paleontological resources associated with the project site and as discussed in the Cultural Resources section, as a previously developed site and with no native soils being disturbed, the potential for identifying unrecorded resources is very low. Construction of the project involves ground disturbance and if unknown paleontological resources are encountered, there is the potential for a significant impact.

Mitigation Measures Culture-1 through Culture-3 would also reduce the potential impact related to unknown paleontological resources.

Compliance with the protection procedures specified in mitigation measures Culture-1 through Culture-3 would assure that if any previously-unknown paleontological resources are discovered, these would be handled appropriately and the impact with respect to paleontological resources would be ***less than significant with mitigation.***

8. GREENHOUSE GAS EMISSIONS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			☒	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			☒	

This section utilizes information from the Air Quality & Greenhouse Gas Assessment prepared for this analysis by Illingworth & Rodkin, Inc. and dated May 6, 2022, included in full as Attachment A.

a) Greenhouse Gas Emissions

BAAQMD determined that greenhouse gas (GHG) emissions and global climate change represent cumulative impacts. Construction and operation of the proposed project would be additional sources of GHG emissions, primarily through consumption of fuel for transportation and energy usage on an ongoing basis.

State Assembly Bill 32 (AB 32) required California state and local governments to reduce greenhouse gas emissions to 1990 levels by 2020. State Senate Bill 32 was subsequently adopted to require that there be a further reduction in GHG emissions to 40% below the 1990 levels by 2030.

In April 2022, BAAQMD issued new GHG emissions thresholds to address 2030 reduction targets, revising the quantified threshold to a checklist of compliance, requiring consistency with either criterion A or B to make a determination that the impact would be less than significant as follows:

A. Projects must include, at a minimum, the following project design elements:

1. Buildings
   a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
   b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
2. Transportation
   a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.
   b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the

recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

i. Residential projects: 15 percent below the existing VMT per capita

ii. Office projects: 15 percent below the existing VMT per employee

iii. Retail projects: no net increase in existing VMT

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Regarding criterion A, the proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficacy standards and would meet BAAQMD's checklist as follows:

A.1.a. Avoid construction of new natural gas connections for the residential building,

Conforms – compliance with City Reach Code would prohibit natural gas infrastructure in new buildings.

A.1.b. Avoid wasteful or inefficient use of electricity,

Conforms – would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.

A.2.a. Include electric vehicle charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and

Conforms – the project would provide 95 EV/Clean Air parking spaces out of the 745 proposed on-site parking spaces and would be in compliance with this requirement.

A.2.b. Reduce VMT per service population by 15 percent over regional average.

Conforms – The TDM plan would reduce vehicle trips by 20 percent to meet Section 18.25.030 of the City of San Carlos Municipal Code. With this required TDM Plan reduction, VMT per service population would be reduced by at least 15 percent over regional average (see Section 17 Transportation).

As indicated above, all relevant criteria would be met and the project would therefore be considered to have a ***less than significant*** impact with respect to Greenhouse Gas Emissions.

Note that it is not necessary to consider criterion B since the project meets criterion A. However, the following information is provided for informational purposes.

On September 27, 2021, the San Carlos City Council adopted a new Climate Mitigation and Adaptation Plan (CMAP) to reduce GHG emissions. The CMAP aims to reduce emissions 40% by 2030 and 80% by 2050 relative to 1990 levels. This CMAP is an update to the 2009 Climate Action Plan (2009 CAP) that provides updated information, an expanded set of GHG reduction strategies, climate adaptation strategies and a planning horizon out to 2050. There is not currently a checklist for development project, but the following goals and strategies found in the CMAP would be relevant to this project:

Goal 1: Reduce energy use

- o Strategy 1: Regional Energy Conservation and Efficiency Programs. Promote available energy efficiency and conservation opportunities, incentives, and technical assistance for businesses and residents.

  Conforms – The TDM plan would reduce vehicle trips by 20 percent to meet Section 18.25.030 of the City of San Carlos Municipal Code. With this required TDM Plan reduction, VMT per service population would be reduced by at least 15 percent over regional average (see Section 17 Transportation).

Goal 2: Transition to carbon-free energy sources

- o Strategy 4: Electrification. Transition to electricity as the primary energy source citywide.
- o Strategy 5: Building Codes. Advance electrification through local amendments to the California Building Code.
- o Strategy 7: Peninsula Clean Energy. Continue to support and promote PCE as the community's official electricity provider with a goal to provide 100 percent carbon-free renewable energy by 2025.

  Conforms – compliance with City Reach Code would prohibit natural gas infrastructure in new buildings. Peninsula Clean Energy is the electricity provider.

Goal 4: Promote sustainable development that reduces vehicle miles traveled

- o Strategy 17: Vehicles Miles Traveled. Reduce community-wide transportation-related emissions per resident and employee, with an emphasis on reductions from existing and new development in the city's core commercial, office, and industrial areas, including development on the east side.

  Conforms – The TDM plan would reduce vehicle trips by 20 percent to meet Section 18.25.030 of the City of San Carlos Municipal Code. With this required TDM Plan reduction, VMT per service population would be reduced by at least 15 percent over regional average (see Section 17 Transportation).

Goal 7: Become a zero-waste community

- o Strategy 27: Construction and Demolition Waste. Increase the amount of waste recycled during construction and demolition of buildings.

  Assumed conformance – The project would be required to comply with Chapter 8.05 of the City of San Carlos's Municipal Code, which outlines requirements for Recycling and Diversion of Construction and Demolition Debris.

As detailed above, the project would conform with relevant goals and strategies of the San Carlos CMAP, which is consistent with the less than significant impact conclusion.

To further support conclusions related to the qualitative criteria above, GHG emissions were modeled quantitatively using CalEEMod, as discussed in the Air Quality section, and are included here as an informational item. To meet 2020 reduction targets, BAAQMD had recommended threshold of significance for operational GHGs of 1,100 metric tons CO2e[12] per year or, if the project was too large to meet that threshold, an efficiency threshold of 4.6 metric tons CO2e per service population (residents and employees) per year. Because this is a large office/R&D project, the applicable threshold for this analysis is the efficiency threshold. While BAAQMD did not update recommendations to address 2030 reduction targets, industry standard is to assume an additional 40% reduction per State directives, which equates to a standard of 2.8 metric tons CO2e per year per service population. A summary of the results is included in **Table 8**.

Table 8: Greenhouse Gas Emissions

Description	GHG in metric tons CO_2e per year		
	Existing Use	**Proposed Project**	**Net Increase**
Project Emissions, Operational	830	2,467	1,637
Project Emissions, Construction (averaged over 40 years) [2]	0	57	57
Project Emissions, Total	**830**	**2,524**	**1,694**
Project GHG Efficiency (Emissions per Service Population) [3]			**1.6**
Project Service Population 2030 Extrapolated Efficiency Threshold			2.8
Exceeds Threshold?			*No*

Source: Illingworth & Rodkin, 2022, Table 9 in Attachment A.

1 CO_2e is carbon dioxide equivalent units, the standard measure of total greenhouse gasses.

2 Standard practice is to divide the construction emissions by 40 years (an average building life) and add that to the operational emissions for comparison to thresholds.

3 Service Population was calculated at approximately 300 square feet per employee for office/R&D, which equates to 1,085 employees.

As shown in Table 8 above, quantified GHG emissions would be below the relevant efficiency threshold and therefore consistent with the less than significant impact conclusion.

b) Greenhouse Gas Reduction Plans

See the Air Quality section for an analysis of the project's consistency with the regional Clean Air Plan. Additionally with respect to GHG emissions, the Clean Air Plan includes the goal to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050. This is consistent with the target reductions intended to be met by the BAAQMD thresholds and City's CMAP. As demonstrated under criterion a) above, the project would be consistent with BAAQMD thresholds and the City's CMAP and would therefore be consistent with the GHG emissions reduction goal of the Clean Air Plan.

[12] CO2e is carbon dioxide equivalent units and is the standard measure of total greenhouse gasses.

Additionally, emissions associated with the development of the proposed project were analyzed per the BAAQMD May 2017 CEQA Air Quality Guidelines, as updated. BAAQMD's thresholds and methodologies take into account implementation of state-wide regulations and plans, such as the AB 32 Scoping Plan and adopted state regulations such as Pavley and the low carbon fuel standard. Therefore, there would be ***no impact*** with respect to consistency with GHG reduction plans.

9. HAZARDS AND HAZARDOUS MATERIALS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			☒	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		☒		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		☒		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			☒	
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			☒	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				☒

This section utilizes information from the Phase I Environmental Site Assessment prepared for the applicants by PES Environmental, Inc., dated November 30, 2021, which is available as part of the project application materials.

a) Routine Use of Hazardous Materials

It is likely that equipment used at the site during construction activities could utilize substances considered by regulatory bodies as hazardous, such as diesel fuel and gasoline. However, all construction activities would be required to conform with Title 49 of the Code of Federal Regulations, US Department of Transportation, State of California, and local laws, ordinances, and procedures.

While specific tenants have not yet been identified, any commercial uses would involve household hazardous waste such as cleaners. R&D laboratories additionally are likely to handle materials considered to be biological hazards and/or chemical hazards. The San Mateo County Environmental Health Division enforces regulations pertaining to safe handling and proper storage of hazardous materials to prevent or reduce the potential for injury to health and the environment. Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health Administration is responsible for developing and enforcing workplace safety standards and ensuring worker safety in the handling and use of hazardous materials. Additionally, the City is in the process of developing regulations relating to BioSafety standards, with which future tenants of this proposed project would be required to comply.

With compliance with applicable regulations, project construction and operations are not anticipated to create a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials (***less than significant***).

b, d) <u>Hazardous Materials Site and Accidental Release</u>

The site is a listed hazardous materials site for past contamination related to historic use of the 833 Old County Road property as a petroleum fueling facility and as an oil storage facility. A portion of the project site was also a former railroad spur, which may cause contamination due to chemicals associated with train operations, railroad ties, spills, or releases from rolling stock, and the use of pesticides and/ or herbicides. Historical records also indicate the former presence of a machinery manufacturing plant and furniture assembly facility. No current use of the project site is reported as a concern regarding hazardous materials.

803/821 Old County Road - A 750-gallon underground storage tank (UST) used to store gasoline, diesel, and/or kerosene until 1996 was removed from the southwest corner of the 803 Old County Road property in 1997. Several holes were found in the bottom of the tank at that time. Groundwater remediation was done in 2000, and the property received a Case Closure notice from the San Mateo County Health System in 2012. The GeoTracker database shows the property as a completed and closed LUST cleanup site as of July 2012.

833 Old County Road – Eight groundwater monitoring wells were installed in 2002, and testing showed total petroleum hydrocarbons and benzene were detected in high levels. Quarterly testing was recommended at that time, but reports were only found until March 2005. In 2004, aboveground storage tanks and piping were removed, with a note that removal of all below grade piping and demolition of fuel dispensers/islands would occur at a later date, with no follow up documentation. Regional Water Quality Control Board lists this as an open case and that additional groundwater monitoring would still need to be completed to receive case closure. One existing groundwater monitoring well was found to be compromised and backfilled with dirt and debris, creating a potential conduit allowing hazardous material to enter groundwater, although no known hazardous materials were present on the current site. The other 6 wells' condition is unknown at present. In 2020, a Phase I report noted the possible presence of a subsurface gasoline vapor tank and underground product piping. The property owner (a separate entity than the current project applicant) had not completed the San Mateo County Department of Environmental Health facility closure process by providing evidence of removal of the UST and piping.

Due to the known potential for contamination at the site, various tests of the groundwater and soils have been performed at the site over the years, with the following conclusions:

- **Soils**: Elevated concentrations of petroleum hydrocarbons and associated compounds were found in soil investigations. Affected soils were found primarily between 6 and 12 feet below ground surface. The limits of the petroleum hydrocarbon-affected soil have been identified in areas studied laterally and vertically on all sides with the exception of the northeastern extent where the property boundary was reached. At the property boundary, available soil data indicate that likely concentrations of total petroleum hydrocarbon as gasoline and quantified as diesel are below commercial regulatory action levels for a commercial property.

- **Groundwater**: Elevated concentrations of petroleum hydrocarbons and associated compounds were found at the project site, and it has been identified as a potential source of petroleum hydrocarbon-affected groundwater on one or more hydraulically downgradient sites. Affected groundwater is roughly coincident with the affected soil and is bounded as well to the subject property on all sides except the northeastern boundary. By the time the affected groundwater reaches the site boundary, concentrations of total petroleum hydrocarbons have decreased significantly from the highest concentrations and possible free phase product found in the center of the property to levels below associated regulatory levels for non-drinking water.

- **Soil Vapors**: Soil vapor sampling did not identify widespread chemical vapors across the site except in very localized areas consistent with high concentrations of total petroleum hydrocarbon as gasoline in soil and/or groundwater. These chemical vapors were typically volatile organic compounds (VOCs) associated with petroleum fuels including benzene, xylenes, MTBE, ethylbenzene, and hexane. Naphthalene was found in one localized spot at an elevated concentration and may be related to historical uses of the subject property as a lumber yard. Scattered occurrences of chloroform were found along the subject property boundaries with Old County Road and Bransten Road at concentrations above regulatory action levels. The source of the chloroform is unknown and may be related to water and/or sewer leaks on- or off the subject property.

841 – 851 Old County Road – The properties have been investigated for soil and groundwater contamination over the years and have been found to have groundwater contaminated with petroleum hydrocarbon, benzene, and chloroform originating from 833 Old County Road. Although multiple businesses at this property have been listed as handling hazardous materials, no violations were ever issued.

The project site is currently an open but inactive fuel leak case with the Regional Water Quality Control Board (RWQCB).

The proposed project includes a subterranean garage that would require removal of all soil within the bounds of the project site to a depth of approximately 25 feet, which would effectively remediate the environmental concerns associated with the on-site soil contamination. This soil excavation process would allow for discovery and removal of all suspected or unknown subsurface features that could be contributing to off-site or downgradient contamination levels. These would be managed properly and transported off site.

Mitigation Measure

Haz-1: **Adherence to Remediation Measures.** The applicant shall work with RWQCB to re-activate the fuel leak case and prepare and implement an agency approved remediation plan. The plan may include preparation of a Site Mitigation Plan to provide procedures and protocols for excavation, waste classification, and transportation/disposal of the contaminated soil; design of an excavation dewatering treatment system to manage the residual contamination in groundwater and excavation water generated during remediation and grading activities and potential off-site up-gradient considerations; evaluation and design, if needed, of a soil vapor barrier extension to the waterproofing system for some or all of the perimeter subterranean garage walls to mitigate chemically-affected soil vapor from migrating onto the project site; and further assessment of adjacent down-gradient properties, as required by the RWQCB, to evaluate conditions following completion of the on-site remediation and subgrade construction activities.

Existing Buildings – All existing structures on the project site were constructed in or before the 1970s and therefore have the potential for both asbestos containing materials and lead-based paint.

Mitigation Measure

Haz-2: **Lead-Based Paint and Asbestos Abatement**. Prior to demolition, the project sponsor shall demonstrate that buildings have been assessed for asbestos-containing materials and lead-based paint and that any suspected such materials have been abated by a licensed abatement contractor and disposed of according to all state and local regulations.

Implementation of mitigation measures Haz-1 and Haz-2 would requirement implementation of a Remediation Plan in coordination with RWQCB to address existing site contamination and hazardous building material assessment and abatement prior to demolition of existing buildings, which would reduce the effects of hazardous materials from the soil or demolition to ***less than significant with mitigation***.

c) Hazardous Materials Near Schools

No school is located within one-quarter mile of the project site. Therefore, the project would have ***no impact*** with respect to hazardous materials near schools.

e) Airport Hazards

The closest airport is the San Carlos Airport, approximately 0.4 miles from the project site. According to the Airport Land Use Compatibility Plan, the project site is within the Airport Influence Area (Area B). The site is not within a primary flight path but is within the traffic pattern zone. Office and R&D uses are identified as compatible uses in this zone. The majority of the site has an allowable height of 155 feet above mean sea level. Factoring in the height of the site, the highest rooftop elements would reach maximum heights of approximately 132 feet above mean sea level, which would be below the FAA height limits. Because of the location within the Airport Land Use Compatibility Plan area, the project would be subject to Airport Land Use Commission approval to receive confirmation that their proposed building is compatible with height constraints and would not include elements dangerous to aircraft such as blinking lights, smoke columns, or attraction of birds.[13] The project appears to be in conformance with the applicable rules. There are no other airports, either public or private within the vicinity of the project. There would be a ***less than significant impact*** related to airport hazards.

[13] City/County Association of Governments of San Mateo County, Adopted October 2015, *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport*, Exhibits 4-3 and 4-4 and p. 4-26.

f) Emergency Response Plan

The project would not include any changes to existing public roadways that provide emergency access to the site or surrounding area. The proposed project would be designed to comply with the California Fire Code and the City Fire Marshal's code requirements that require on site access for emergency vehicles, a standard condition for any new project approval.

No substantial obstruction in public rights-of-way has been proposed with the project's construction activities. However, any construction activities can result in temporary intermittent roadway obstructions, but these would be handled through standard procedures with the City to ensure adequate clearance is maintained.

Therefore, with compliance with applicable regulations and standard procedures, the impact with respect to impairment or interference with an Emergency Response or Evacuation Plan would be ***less than significant***.

g) Wildland Fire

The project site is located in an urbanized area removed from areas typically subject to wildland fire.[14] Therefore, the project would have ***no impact*** related to wildland fire.

[14] City of San Carlos, *San Carlos 2030 General Plan EIR*, June 2009, p. 4.6-18.

10. HYDROLOGY AND WATER QUALITY Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			☒	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			☒	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would: i) result in substantial erosion or siltation on- or off-site; ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			☒	
d) In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?			☒	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			☒	

This section utilizes information from the Design-Level Geotechnical Investigation prepared for the applicants by Cornerstone Earth Group, dated July 16, 2021, which is available as part of the project application materials.

a) <u>Water Quality and Discharge</u>

Water quality is regulated by both State and Federal agencies under the authority of the Clean Water Act (CWA). Projects that have the potential to degrade water quality are subject to the regulations of those agencies. Operational activities may involve common urban pollutants such as surface litter, oil, gasoline, grease, paint, fertilizers, pesticides, and herbicides. Construction activities involving soils disturbances have the potential to result in increased erosion and sedimentation to surface waters, and could produce contaminated storm water runoff, a major contributor to the degradation of water quality.

The proposed project is located in an industrially zoned area and would include a net reduction of impervious surfaces with new landscaped areas. The project reduces the amount of impervious surface and includes a plan for stormwater retention on-site in compliance with regulations. During construction, the City would require the project to develop and implement BMPs to control erosion associated with construction such as watering the exposed soil, and permanent features to treat stormwater runoff. The impervious surface coverage is reduced to 89% (from 92.5% coverage) with the addition of landscaped areas in compliance with Section 18.07.040 of the San Carlos Municipal Code.

Stormwater runoff water quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program (established through the CWA). The NPDES program objective is to control and reduce pollutants to water bodies from surface water discharges. Locally, the program is administered by the Bay Area Regional Water Quality Control Board (RWQCB). Compliance with the NPDES Permit is mandated by State and Federal statutes and regulations. The City of San Carlos participates in San Mateo's Stormwater Management Plan, which outlines maintenance activities to be undertaken by cities; targets industrial and illicit discharge; describes public information about stormwater; provides guidance to cities for construction permits; and establishes monitoring programs to measure the success of the other portions of the plan. Compliance with the NPDES Permit is mandated by State and Federal statutes and regulations. The municipalities in San Mateo County have to require post-construction stormwater controls as part of their obligations under Provision C.3 of the countywide municipal stormwater NPDES permit, which is similar to other municipal stormwater permits in the Bay Area. Any new construction would be subject to Provision C.3, which requires: pollutant removal treatment systems, operation and maintenance of treatment measures, and a limitation on increase of peak stormwater runoff discharge rates. Project applicants must prepare and implement a Stormwater Control Plan, as detailed in **Standard Condition: Stormwater Control Plan**, included in Table 1, containing treatment and source control measures that meet the "maximum extent practicable" standard as specified in the NPDES permit and the SMCWPPP C.3 Guidebook. Project applicants must also prepare a Stormwater Facility Operation and Maintenance Plan and execute agreements to ensure the stormwater treatment and flow-control facilities are maintained in perpetuity.

The proposed project would retain much of the existing stormwater control system while also adding additional water efficient landscaping, including green terraces and patios. The project has prepared preliminary stormwater treatment plans and C.3 worksheets demonstrating the change in impervious area at the site and appropriateness of stormwater system elements. The proposed project would reduce the impervious surfaces by 4,576 square feet to 132,784 square feet, representing a post-project condition with impervious surfaces on 89% of the site. The use of additional street-level flow through planters is not proposed, as the project would be built on top of an underground parking garage. There are currently two locations along Bransten Road and Commercial Street that are designated for flow-through treatment planters to treat roof runoff. The project applicants are requesting a 45% reduction in LID treatment measures, due to the project's qualification as a "Special Project" Category C. As detailed in the Geotechnical Investigation, stormwater infiltration locations within 10 feet of the buildings would create a geotechnical hazard. Details of the on-site stormwater system will be finalized through compliance with C.3 requirements.

Through compliance with post-construction requirements in Standard Condition: Stormwater Control Plan related to implementation of the NPDES permit C.3 requirements, including project preparation and implementation of a Stormwater Control Plan and Stormwater Facility Operation and Maintenance Plan, the long-term volume of water and water quality impacts from project operation would be ***less than significant*** and the project would comply with applicable water quality control regulations.

b) Groundwater Recharge and Supplies

The groundwater at the site is not used by this or other projects as a water supply. Additionally, the project would comply with stormwater drainage requirements (see item a above). The project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge and would have a less than significant impact related to groundwater.

As discussed in more detail in the Section 7: Geology and Soils, project construction activities would require excavation and related dewatering activities. Because groundwater at the site is not used for drinking water or for aquatic habitat and draw-down from dewatering activities would be temporary, this would not be considered a significant impact on groundwater supplies.

As discussed under this Section 10(a) above, the project would comply with stormwater drainage requirements. The project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge, and would have a ***less than significant*** impact related to groundwater.

c) Drainage Pattern Alteration

As discussed under item a, the site is currently fully developed, and runoff drains to the City's storm drainage system. The project would reduce impervious site area and slow and treat run-off with bio-retention areas prior to discharge into the storm drainage system. Through compliance with applicable regulations, as detailed in **Standard Condition: Stormwater Control Plan**, included in Table 1, the runoff from the site would be the same or reduced from that existing and would not cause erosion, siltation, or flooding. Project impacts related to alteration of drainage patterns would be ***less than significant***.

d) Inundation

The project is not located within a Federal Emergency Management Agency (FEMA) Flood Zone and is therefore not considered to be subject to a substantial risk of flooding.[15] The project site is not located within an area subject to inundation in the event of a failure of any dam.[16] The project site is not located in an area that is protected by levees.

A tsunami or seiche originating in the Pacific Ocean would lose much of its energy passing through San Francisco Bay. Areas most likely to be inundated are those at or below sea level and within 1½ miles of the shoreline. The site is approximately 2¾ miles inland from the San Francisco Bay shoreline. The site elevation is also more than 66 inches above mean sea level, which is the projected potential sea-level rise by 2100.[17] Relatedly, the site is mapped by the State of California Tsunami Inundation Map as not being within an inundation area.[18] Additionally, the site is not located proximate to a hillside that could generate mudflow.

Therefore, the potential for inundation due to tsunami, seiche, dam or levee failure, sea level rise, or mudflow would be ***less than significant***.

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15 Federal Emergency Management Agency (FEMA), effective 4/5/2019, Flood Insurance Rate Map (FIRM), Map Number 06081C0042F, available at https://www.fema.gov/flood-maps.

16 City of San Carlos, *San Carlos 2030 General Plan*, p.194.

17 California Department of Water Resources, California Climate Science and Data for Water Resources Management, June 2015.

18 California Emergency Management Agency, Tsunami Inundation Map for Emergency Planning, Redwood Point/Palo Alto Quadrangle, June 15, 2099, available at http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps.

11. LAND USE AND PLANNING Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			☒	

a) Physical Division of a Community

The project involves redevelopment of a currently-developed site and does not involve any physical changes that would have the potential to divide an established community (***no impact***).

b) Conflict with Land Use Plan

An environmental impact could occur when a project conflicts with a policy or regulation intended to avoid or reduce an environmental impact. The following discussion does not replace or preclude a consistency assessment for project approval considerations, which take into account more than potential impacts to the environment.

The site is currently zoned IH (Heavy Industrial), under which R&D use is explicitly allowed and office use is allowed with a conditional use permit. The applicant is proposing approval under a Planned Development (PD) rezone, which would define development standards including intensity, height, setbacks, etc.

The potential for the project, including the requested rezoning, to result in environmental impacts have been individually considered in all topic areas in this document and would not result in any significant impacts following mitigation. Therefore, the project would not conflict with a land use plan, policy, or regulation in a way that would result in a significant environmental impact and would have a ***less than significant*** impact with regard to land use plan conflicts.

12. MINERAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				☒

a, b) Mineral Resources

San Carlos, including the project site, contains no known mineral resources.[19] The project would have ***no impact*** with regard to mineral resources.

[19] City of San Carlos, *San Carlos 2030 General Plan*, p.111.

13. NOISE Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		☒		
b) Generation of excessive groundborne vibration or groundborne noise levels?		☒		
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			☒	

This section utilizes information from the Noise Assessment prepared for the applicant by Coffman Engineers and dated April 14, 2022, included in full as Attachment D.

a) Excessive Noise

Construction Noise

Standard construction practices and hours would be followed, consistent with City regulations. Construction equipment that generates excessive noise, such as pile drivers and blasting equipment, are not expected to be used in this project. The acoustical analysis estimated both the energy average of sound (Leq) and the single loudest piece of equipment (Lmax) and found that the Leq would range from 58 to 65 dBA, and the Lmax would range from 58 to 68 dBA. The City's noise ordinance limits during construction hours are 55 dBA L50 (measured using Leq) and 70 dBA Lmax. While the project construction would possibly exceed the L50 limit, the City's Municipal Code includes exemptions for construction activities conducted during certain daytime hours. As detailed in **Standard Condition: Construction Noise**, included in Table 1, the San Carlos Noise Ordinance (Chapter 9.30 of the Municipal Code) restricts construction activities to the hours of 8:00 AM to 5:00 PM on weekdays, 9:00 AM to 5:00 PM on Saturdays. All construction on the project would be conducted within the allowable hours. The impacts from noise generated by construction of the project would be ***less than significant***.

Operational Noise

Operation of an office/R&D use does not typically produce substantial levels of noise. Traffic-related noise impacts generally occur with at least a doubling of traffic volumes on roadways adjacent to areas already at or above acceptable noise conditions. As detailed in the traffic study

(Attachment E), the net new traffic would be well below a doubling of volumes on area roadways and would therefore not result in traffic-related noise impacts.

The project intends to support unspecified research and life science tenants and therefore may have various pieces of mechanical equipment on the rooftops, including heat pumps, cooling towers and air handling units. Because the specific tenants and equipment has not yet been determined, the following measure would be implemented to ensure rooftop equipment noise levels would not result in a significant impact on the closest residential area.

Mitigation Measure

Noise-1: **Rooftop Mechanical Equipment Noise Assessment.** The applicant shall conduct a detailed mechanical noise analysis once rooftop equipment has been selected. If any equipment exceeds 87 dBA at 5 feet, provide silencers, barriers, or other noise mitigation treatments to reduce expected noise levels from the mechanical equipment to within the noise ordinance limits.

Except in an emergency situation, the standby generators would be run during monthly testing during daytime hours. Even if both generators (should a tenant install a second generator) be tested at the same time, the noise level would be below local noise limits.

The impacts from noise generated by operation of the project would be ***less than significant with mitigation***.

b) Groundborne Vibration

Operation of an office/R&D use would not produce substantial levels of off-site vibration.

Typically, the most groundborne vibration would be caused by construction equipment during demolition, site excavation, and grading. Vibratory rollers, large bulldozers and loaded trucks carrying soil would produce the most vibrations. Construction vibration is evaluated to determine if it would result in building damage or annoyance at residential areas. Proposed construction activities do not include vibration-generation with the potential to impact the closest residential uses at over 500 feet away.

For structural damage to engineered concrete and masonry buildings like the adjacent structures, the California Department of Transportation recommends a vibration limit of 0.3 in/sec peak particle velocity (PPV). The project would be considered to result in a potentially significant vibration impact if it were to result in groundborne vibration levels exceeding 0.3 in/sec PPV at the adjacent commercial buildings, as that is the vibration level considered to have the potential to cause damage to such structures.

The Acoustical Analysis projected that construction-related vibration levels at nearby commercial buildings could exceed the damage threshold of 0.3 in/sec PPV if the following construction equipment were to be utilized within 5 feet of the adjacent buildings: Vibratory Rollers (up to 1.23 PPV at 5 feet), Large Bulldozers (up to 0.52 PPV at 5 feet), and Loaded Trucks (up to 0.45 PPV at 5 feet). Further analysis of vibratory roller vibration shows that at distances farther than 20 feet from existing structures, the vibration levels fall below the criteria. For other equipment such as large bulldozers and loaded trucks, vibration levels are expected to fall below the criteria at about 10 feet from the existing structures. The following mitigation measure would reduce the risk of structural damage to nearby structures due to construction vibration.

Mitigation Measure
Noise-2: **Construction Vibration Reduction and Monitoring.** Wherever feasible, operation of vibratory rollers shall be avoided within 20 feet of existing buildings and operation of other construction equipment such as large bulldozers or loaded trucks shall be avoided within 10 feet of existing structures on adjacent lots. If vibratory rollers must operate within 20 feet of existing buildings or other major construction equipment must operate within 10 feet of existing buildings, then a vibration monitoring plan shall be prepared and implemented to monitor construction vibration at the nearest structures.

With implementation of mitigation measure Noise-2, which requires setbacks for high vibration-generating construction work or vibration monitoring, the impact from groundborne vibrations during construction would be ***less than significant with mitigation***.

c) Airport Noise

The closest airport to the project site is the San Carlos Airport, approximately 0.5 miles to the south. The project site is within the boundary of the Airport Land Use Compatibility Plan (ALUCP) but is not within the area substantially impacted by airplane flyover noise (expected to be 60 dBA or less).[20] Impacts related to excessive aircraft noise exposure would be ***less than significant***.

[20] City/County Association of Governments of San Mateo County, Adopted October 2015, Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport, Exhibit 4.1.

14. POPULATION AND HOUSING Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			☒	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				☒

a) Substantial Population Growth

While neither housing nor population are directly created as a result of this project, employment opportunities can indirectly increase population and the demand for housing.

The General Plan estimated job growth in San Carlos of 8,530 jobs between 2005 and 2035, which would raise the projected jobs-to-housing ratio from 1.4 in 2010 to 1.7 in 2035. The trends in job growth and jobs-to-housing ratio are similar to those county-wide and consistent with regional projections, and the General Plan EIR concluded the impact related to population growth would be less than significant.[21, 22]

Plan Bay Area 2050 is the current regional long-range plan charting the course for the future of the nine-county San Francisco Bay Area. Plan Bay Area 2050 focuses on four key issues — the economy, the environment, housing, and transportation. Plan Bay Area 2050 estimates a total addition of 1,403,000 total jobs to the Bay Area between 2015 and 2050. The project's addition of up to 1,085 employees would increase jobs in the City and region incrementally. Compared to the total jobs projection for the entire Bay Area, the addition of 1,085 jobs would not be substantial or unplanned. The location of an employment center near local and regional transit (see Section 17: Transportation) would be consistent with Plan Bay Area 2050 goals to reduce vehicle travel while meeting area demand for growth.

Therefore, the proposed project represents a small portion of the job growth identified for the area, so resultant potential for population growth would not be substantial and unplanned, and the project would have a ***less than significant*** impact related to population growth.

b) Displacement of Housing or People

There is currently no housing or people at the site that would be displaced by the project. The project would have ***no impact*** related to displacement of housing or people.

[21] City of San Carlos, San Carlos 2030 General Plan, Housing Element, pp.11, 12.

[22] City of San Carlos, *San Carlos 2030 General Plan EIR*, June 2009, Chapter 4.10: Population and Housing.

15. PUBLIC SERVICES Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services?	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Fire protection			☒	
b) Police protection			☒	
c) Schools			☒	
d) Parks			☒	
e) Other public facilities			☒	

a-e) Public Services

The proposed project is located on a developed site within San Carlos that is already served by public services. The project would not directly add population, and an office/R&D use would not be anticipated to substantially increase utilization of public services, such that new or physically altered facilities would be required. The minimal increases in demand for services expected with the worker population and potential indirect population growth (see Section 14: Population and Housing), would be offset through payment of development fees and annual taxes, a portion of which go toward ongoing provision of and improvements to public services. Therefore, the impact to public services would be ***less than significant***.

16. RECREATION Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.			☒	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.			☒	

a-b) <u>Recreation</u>

As an office/R&D project, the proposed project would not construct or substantially increase the use of public recreational facilities. On-site open space would be provided for employees in the form of a courtyard between the two buildings and upper-level terraces. The use of public recreational facilities would not be anticipated to increase substantially due to project employees such that physical deterioration would occur, or construction or expansion would be necessary. Therefore, the impact related to recreation would be ***less than significant***.

17. TRANSPORTATION Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			☒	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			☒	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm)?			☒	
d) Result in inadequate emergency services?			☒	

This section utilizes information from the CEQA Transportation Analysis prepared for this analysis by W-Trans, dated November 3, 2022, and included in full as Attachment E.

a) Circulation System Plans and Facilities

The Transportation Analysis assessed pedestrian, bicycle, and transit access and circulation and consistency with applicable regulations.

Pedestrians and Bicyclists: Sidewalks and crosswalks are provided on most streets in the immediate vicinity of the proposed project. Sidewalks exist along both sides of Industrial Road, as well as Old County Road, except for the segment south of Montgomery Street where there is only sidewalk on the east side. Currently, only intermittent sidewalks are available on Commercial Street, however a new sidewalk along the south side between Old County Road and Industrial Road has been proposed as part of a separate project. A pedestrian tunnel provides access from El Camino to Old County Road, under the above-grade Caltrain tracks.

Bicycle access to the proposed project site is currently available as Class II bike lanes on Old County Road and Industrial Road. All other streets in the project area require bicyclists to ride in the street and/or on sidewalks. A number of improvements to bicycle lanes around the project site are anticipated under the *City of San Carlos Bicycle and Pedestrian Master Plan*, 2020.

In order to provide improved and continuous access between the project site and San Carlos Caltrain Station and SamTrans bus stops along El Camino Real, the project would also include the following changes to the existing pedestrian and bicycle network:

- Demolish and reconstruct the sidewalks along the project frontages along Bransten Road, Commercial Street and Old County Road. This would include ADA-compliant curb ramps and improved sidewalks.

- Construct a new Class IV Bikeway along the western side of Old County Road between Bransten Road and Commercial Street. It is noted that Old County Road north of Bransten Road would remain a Class III Bike Route until additional portions of the Old Country Road Class IV Bikeway is completed by others. The detailed design of the transition between the styles of bike lane is undergoing review and has not yet been finalized.

- Establishment of a bicycle crosswalk across Old County Road at the intersection of Old County Road/Bransten Road that connects the future Class IV Bikeway on Old County Road with Bransten Road.

All of these changes are required to be designed and constructed to meet City standards and would not increase hazards due to a geometric design feature or incompatible use. Therefore, the impact to pedestrian and bicycle facilities would be ***less than significant***.

Transit: Existing transit service to the study area is provided by Caltrain, and San Mateo County Transit District (SamTrans). The project site is located approximately 0.46 miles from the Caltrain station, and 0.1 miles from bus stops offering service from Route 397 (San Francisco to Palo Alto), Route 398 (San Francisco to Redwood City) and Route ECR (Daly City CART station to Palo Alto). As a project close to transit stops, the project is expected to generate trips via transit services. According to state CEQA guidelines, the addition of new transit riders should not be treated as an adverse impact because such development also improves regional flow by adding less vehicle travel onto the regional network. Therefore, the project is anticipated to have a ***less than significant*** impact on transit facilities and services.

Local Residential Streets: The City is working separately with local residents of the East San Carlos Neighborhood who are concerned about cut through traffic on their local streets. Based on analysis of the project trip generation, TDM plan reduction, trip distribution pattern and likely paths of travel, the number of cars from this project estimated to use local streets to travel between Old County Road and Industrial Road does not exceed the standards set by the City of San Carlos Neighborhood Traffic Management Program for a local street, and therefore does not qualify as a significant impact under CEQA.

Per Senate Bill 743 discussed under item b) below, auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion are no longer considered as a basis for determining significant impacts under CEQA. The following discussion is provided for informational purposes and to demonstrate compliance with circulation system roadway policies and is based on the Transportation Operations Analysis prepared by W-Trans, which is available as part of the project application.

The proposed project would generate an average of 2,346 net new trips daily, with 295 new trips during the AM peak hour and 237 new trips during the PM peak hour. The Transportation Operations Analysis concluded that with implementation of improvements included in the City's Transportation Improvement Fee Program, the project would not cause any study intersections or freeway segments to degrade from acceptable operations to unacceptable operations. While some intersections / freeway segments operate at conditions considered unacceptable under existing and/or cumulative conditions, the project's contribution to those intersections would be below applicable threshold levels. Therefore, the project would be consistent with applicable circulation system roadway planning and policies and would have a ***less than significant*** impact on the circulation system.

b) Vehicle Circulation and Congestion

Senate Bill (SB) 743 changes CEQA transportation impact analysis significance criteria to eliminate auto delay, level of service (LOS), and similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA (although a jurisdiction may choose to maintain these measures under its General Plan). The changes in CEQA Guidelines to implement SB 743 present vehicles miles traveled (VMT) as an appropriate measure of transportation impacts.

This discussion is a summary of the data, analysis, and conclusions in the complete Transportation Analysis, included in full as Attachment E.

Because the project site is currently occupied by commercial uses, the trip generation of those businesses was estimated and deducted from the trip generation of the proposed project. The proposed project would fit under both "Research and Development Center" and "General Office Building" land uses listed in the current *Trip Generation Manual*[23]. For a conservative analysis, and to be consistent with other recently analyzed Life Sciences office projects in San Carlos, the higher daily trip generation rate for "Research and Development Center" and the peak hour trip generation rates for "General Office Building" were applied to approximate the number of vehicle trips generated by the proposed project based on the proposed square footage. The number of employees was estimated using an occupancy of approximately one employee per 300 square feet of office space, giving an estimate of 1,085 employees.

Consistent with both the California Office of Planning and Research's (OPR) publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory* (2018) and the City of San Carlos' *Transportation Significance Criteria Implementing Vehicle Miles Traveled* (2020), a proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact. Under OPR's publication, as well as CEQA Guidelines Section 15064.3(b)(1), "generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact." The project is located within 0.5 miles of the El Camino Real transit corridor (a high quality transit corridor). However, under the City's policies, as an office project, the VMT should be analyzed for potential impact. The C/CAG-VTA Bi-County Model was used to determine the VMT per service population baseline for the planning area, based on the "existing" year of 2019, to be 17.0 miles per day. Using a threshold of 15 percent below existing VMT, the significance threshold for the City of San Carlos would be 14.5 miles per day per employee. (See Attachment E for additional detail.)

A TDM plan is required for the proposed project to meet the City of San Carlos' development guidelines, as detailed in **Standard Conditions: Transportation Demand Management**, included in Table 1, which would further reduce traffic generated by the project and contribute to use of alternate modes discussed above. The proposed draft TDM plan is estimated to reduce VMT by 21.7% (see Attachment E for details), but a more conservative estimate of 20% is used to compare against significance thresholds. The TDM plan must be completed and approved by the City prior to the first certificate of occupancy for the project, outlining the required 20% reduction, program and service measures, planning and design measures, monitoring, reporting, and assurance of success of the plan.

[23] Institute of Transportation Engineers, Trip Generation Manual, 11th Edition, 2021.

The estimated project VMT Service Population was calculated and compared against the significance threshold, with and without the reduced rate with implementation of the required TDM program, as summarized in **Table 9** below.

Table 9: Project Vehicle Miles Traveled

Daily Trips	Baseline VMT Rate	Significance Threshold (15% Below Baseline)	Project VMT Rate	Project VMT Rate (with TDM)
Employment-based VMT per Service Population	17.0	14.5	15.2	12.2

Note: VMT Rate is measured in VMT per Service Population; Project Reduced VMT Rate is 15.2 less 20%
Source: W-Trans CEQA Transportation Analysis, 2022, Table 5 in Attachment E.

The estimated VMT per Service Population for this development, without considering the TDM measures required by the City of San Carlos Municipal Code, is 15.2 miles per day per employee. Taking into account implementation of the requirements in Standard Condition: Transportation Demand Management, the estimated VMT per employee for the project would be 12.2 miles, which is less than the 14.5 VMT threshold for office projects, resulting in a ***less than significant*** impact.

c) Hazards

The Transportation Analysis evaluated the sight distance at both project driveways and the proximity of the accesses to adjacent intersections. Vehicles would access the project site from driveways on Commercial Street and Bransten Road, with each driveway providing access to both the parking garage and the main internal roadway. Pedestrian entrances would face Old County Road, Bransten Road and Commercial Street, and walkways would connect the two buildings.

Sight distance at both driveways was found to be more than adequate compared to criteria in the *Highway Design Manual* published by Caltrans.

The vehicle queue for the westbound approach to Old County Road (on Commercial Street) was found on analysis to extend beyond and block access to the project site driveway on Commercial Street during peak hours. However, in the event the driveway is blocked, motorists would access the site via the Bransten Road driveway. As such, the queue on Commercial Street would not be a significant impact.

All roadway modifications proposed by the project would be designed and constructed to meet current City standards. None of the proposed changes, including changes to sidewalks, crosswalks, bicycle facilities, and travel lanes would increase hazards due to geometric design features. Overall, the project would have a ***less than significant*** impact.

d) Emergency Access

All driveways and internal roadways would be designed and constructed to meet current City standards, ensuring adequate emergency access. Emergency vehicles would access the project site via driveways on Commercial Street and Bransten Road. While the project would add project-generated traffic, all roadway users must yield the right-of-way to emergency vehicles. The project would have a ***less then significant*** impact on emergency access.

18. TRIBAL CULTURAL RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		☒		

a) Tribal Cultural Resources

A record search of the Native American Heritage Commission Sacred Lands File was completed for the project and indicated there are no known sacred lands present in the vicinity of the site (see Attachment B). While no tribes have requested consultation for project in this area, notice was sent to listed tribes on February 10, 2022, per recommendation of the Native American Heritage Commission. One response was received within the required 30 response period from the Indian Canyon Band of Costanoan Ohlone People requesting tribal cultural resource monitoring during ground disturbance activities.

The records search performed by the Northwest Information Center (included in Attachment B) indicated that there is a moderate to high potential for the inadvertent discovery of previously unrecorded Native American resources based on the characteristics of the site and history of the region.

Mitigation Measures Culture-1, Culture-2, and **Culture-3** would require appropriate monitoring and proper handling of any discoveries and would also reduce the potential impact related to unknown tribal cultural resources.

Compliance with the protection procedures specified in Mitigation Measures Culture-1, Culture-2, and Culture-3 and Standard Condition: Protection of Human Remains would require that if any previously-unknown tribal cultural resources and/or human remains are discovered, these would be handled appropriately and the impact of the project would be ***less than significant with mitigation***.

19. UTILITIES AND SERVICE SYSTEMS Would the project	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			☒	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			☒	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			☒	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			☒	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			☒	

a, d-e) Utilities

The project would result in redevelopment of a site already provided with utilities and services. Utility connections would be made to lines in adjacent streets that are either already existing or will be upgraded through coordination with the nearby Alexandria Center for Life Science project. Certified professionals have prepared utility plans for the project (see Figure 5), which are reviewed by City staff, and utility providers would provide will-serve letters prior to issuance of construction permits. No capacity concerns have been raised that are not being addressed by the planned improvements. The project would comply with the City's requirements for waste and recycling. Therefore, while the project would be denser than what is existing on the site and could have a greater demand for utilities and generation of wastewater and solid waste, this would be served by existing facilities and existing regulations and processes would ensure the lines and connections to the site are appropriately sized. The impact on utilities and service systems would be ***less than significant***.

b) Water Supply

The discussion under this topic utilizes information from the Water Supply Assessment prepared for the applicants pursuant to Senate Bill 610 by EKI Environment & Water, Inc., dated October 2022, which incorporates a letter of formal approval by Cal Water and which is available as part of the project application materials.

The purpose of a Water Supply Assessment is to evaluate whether a water provider has sufficient water supply to meet the current and planned water demands within its service area, including the demands associated with the proposed project, during normal and dry hydrologic years over a 20-year time horizon. Cal Water's Bear Gulch, Mid-Peninsula, and South San Francisco Districts share one contractual allocation of supply (referred to as their Individual Supply Guarantee or ISG) from the City and County of San Francisco's Regional Water System, and thus Cal Water manages the supplies for all three Districts collectively. Cal Water's ISG for the three Peninsula Districts is 39,993 acre-feet per year. The Region Water System has historically met demand in its service area in all year types. Future water availability is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. In addition, statewide regulations and other factors can impact the system reliability. For example, the adoption of the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) is anticipated to reduce reliability during drought years in the future. The Cal Water Mid-Peninsula District Water Shortage Contingency Plan and Development Offset Program (discussed below) are being implemented to address future supply reliability.

If the "worst-case" supply scenario under the Bay-Delta Plan Amendment is implemented, shortfalls of up to 53% are projected during drought years. To address these future dry-year shortfalls, Cal Water would enact its Water Shortage Contingency Plan, which includes Mandatory Staged Restrictions of Water Use. The overall reduction goals in the Water Shortage Contingency Plan are established for six drought stages and address water demand reductions over 50%. The Water Shortage Contingency Plans for all three Peninsula Districts were revised as part of the 2020 UWMP update process and include detailed information about how drought risks are evaluated by Cal Water on an annual basis to determine the potential need for reductions.

In July 2021, Cal Water began preparation of a Development Offset Program for its three Peninsula Districts. The purpose of the Development Offset Program is to ensure that overall customer demand for water does not exceed available current or future supply under a range of hydrologic conditions, and to ensure the availability of water for residential, commercial, and other purposes for future water use in the three Peninsula Districts. As approved by the California Public Utilities Commission, the Development Offset Program will require any new residential, commercial, or industrial development within any of the three Peninsula Districts that is projected to increase demand by more than 50 acre-feet per year to pay a special facilities fee, referred to as a developer offset fee, consisting of a fee of $15,400 per acre-feet of net demand increase.

The WSA prepared for this project utilized the historic water usage at the site (average of 2.1 acre-feet per year) and water usage estimation methodology per Cal Water preferences to project that the average annual net increase in water demand for the proposed project would total 46 acre-feet per year. This total includes all indoor and outdoor water usage.

This WSA concluded that the three Peninsula Districts' contractual ISG allocation of 39,993 acre-feet per year is sufficient to meet projected future demands with the proposed project having a minimal impact of less than 50 acre-feet per year. Future demands of the three Peninsula Districts, inclusive of the proposed project, are projected to reach, at most, 85% of Cal Water's contractual ISG allocation in normal hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the Mid-Peninsula District Water Shortage Contingency Plan and Development Offset Program. Because the water demand estimated for the project is less than 50 acre-feet per year, this project is not required to contribute to the Development Offset Program. Therefore, because the Water Supply Assessment prepared in collaboration with Cal Water determined that there would be adequate water supply, the project impact related to water supply would be ***less than significant***.

The project would also implement relevant water efficiency standards. The City of San Carlos has adopted green building standards and water efficient landscaping ordinances consistent with previous versions of the CalGreen building standards and the California Model Water Efficient Landscape Ordinance (MWELO). As part of state requirements, all new developments must comply with these efficiency standards. As such, the project development is expected to implement a number of water-efficient features, including, but not limited to:

- Use of low-flow lavatory faucets, kitchen faucets, toilets, and urinals in accordance with CalGreen Code; and
- Inclusion of low-water use landscaping and high-efficiency irrigation systems to minimize outdoor water use in accordance with MWELO.

c) <u>Wastewater</u>

Increased wastewater production due to the Alexandria Center for Life Science (ACLS) project, as well as other potential projects in the area, was modeled by civil engineering company Mott MacDonald. The report indicated that with the increased wastewater generated by the ACLS project, there would be a bottleneck due to a section of 8-inch diameter sewer pipe under Industrial Road that connects a 15-inch pipe on Commercial Street to the 21-inch main on Industrial Road. The ACLS project would upsize the 8-inch section to a 15-inch pipe and remove the bottleneck.

This project would connect to the wastewater pipe under Commercial Street, which connects to the studied area and would go through the upgraded pipe. With the larger flow capacity of the 15-inch pipe, the project would have a ***less than significant*** impact.

20. WILDFIRE If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				☒

a-d) Wildfire Risk and Emergency Response

The project site is within the developed urban area of San Carlos, which is not located in a very high fire hazard severity zone.[24, 25] The proposed project would have ***no impact*** related to wildfire.

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[24] California Department of Forestry and Fire Protection. 2007. San Mateo County Fire Hazard Severity Zones in State Responsibility Area. Available: https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/.

[25] Department of Forestry and Fire Protection Fire and Resource Assessment Program, *San Mateo County Very High Fire Hazard Severity Zones*, November 24, 2008, available at: https://osfm.fire.ca.gov/media/6800/fhszl_map41.pdf.

21. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		☒		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		☒		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		☒		

a) Environmental Quality

With the implementation of mitigation measures Bio-1 to protect nesting birds during construction and Culture-1 through Culture-3 to address the potential discovery of currently unknown cultural, tribal cultural, or paleontological resources at the site, the project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community. The project would not impact rare or endangered wildlife species or eliminate important examples of the major periods of California history or prehistory.

b) Cumulative Impacts

The project would not result in adverse impacts that are individually limited but cumulatively considerable, including effects for which project-level mitigation were identified to reduce impacts to less than significant levels. All potential effects of the project were assessed in the context of area development, including specifically assessment of emissions impacts analyzed against cumulative thresholds per the Air District recommendations. Project-specific impacts would be less than significant with implementation of mitigation measures identified in this document, including mitigation measure Air-1 to address construction period dust and emissions, and Noise-2 to reduce ambient noise pollution, and would not result in contribution of considerable levels to cumulative impacts.

c) Adverse Effects on Human Beings

The project would not result in substantial adverse effects on human beings, either directly or indirectly. Mitigation Measures Air-1, Geo-1, Haz-1, Haz-2, Noise-1, and Noise-2 would minimize the potential for safety impacts related to construction-period emissions, appropriate techniques for safety during excavation and dewatering and building construction, disturbance of site contaminants, and noise and vibration levels from construction and operational equipment. Therefore, the potential adverse effects on human beings would be less than significant with mitigation.

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AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

ATTACHMENT A

to the
841 Old County Road Project Initial Study / Mitigated Negative Declaration

803 – 851 OLD COUNTY ROAD AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

San Carlos, California

May 6, 2022
Revised November 4, 2022

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Introduction

The purpose of this report is to address air quality, community health risk, and greenhouse gas (GHG) impacts associated with the proposed office/research and development/life science project located at 803 – 851 Old County Road in San Carlos, California. The air quality and GHG impacts from this project would be associated with demolition of the existing land uses, construction of the new buildings and infrastructure, and operation of the project. Air pollutants and GHG emissions associated with construction and operation of the project were predicted using appropriate computer models. In addition, the potential project health risk impacts (includes construction and operation) and the impact of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The existing project site is occupied by a garden supply center, kennels, and a tree services office. This project proposes to demolish the existing uses and construct a total of 339,733 square feet (sf) of office/research & development/life science space split between two buildings, a north building and a south building. The first building will be a five stories and 204,057-sf, followed by a four-story, 135,676-sf building. Two levels of parking will also be provided in an underground lot that will span the entire project site. In addition, the project proposes to include two stand-by diesel emergency generators on the northeastern boundary of the project, one for the base buildings and one for the future tenant. The project also proposes to include a cooling tower on the roof of the south building. Construction is proposed to begin in January 2022 and be completed by January 2025.

Air Quality Setting

The project is located in San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[2] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the site are the residents in the multi-family housing southwest of the project site. There are additional sensitive receptors at farther distances to the south, west, and north of the project site. The Children's Place Preschool and Little Learners Preschool are also near the project site. The project will not introduce new sensitive (i.e., residential) receptors.

[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[3]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[4] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have

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[3] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

[4] California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[5] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages

[5] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.

community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[6] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is not within a designated CARE area and not within a BAAQMD overburdened area as identified by CalEnviroScreen 4.0 as the project site is scored at the 31st percentile. The nearest sensitive receptors are scored at the 12th percentile.

The BAAQMD *California Environmental Quality Act (CEQA) Air Quality Guidelines*[7] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for TACs, odors, and greenhouse gas (GHG) emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of their *CEQA Guidelines*. In May 2011, the updated BAAQMD *CEQA Air Quality Guidelines* were amended to include a risk and hazards threshold for new receptors and modify procedures for assessing impacts related to risk and hazard impacts.

BAAQMD Rules and Regulations

Combustion equipment associated with the proposed project that includes new diesel engines to power generators and a cooling tower that would establish new sources of particulate matter and gaseous emissions. Emissions would primarily result from the testing of the emergency backup generators. Certain emission sources would be subject to BAAQMD Regulations and Rules. The District's rules and regulations that may apply to the project include:

- Regulation 1 – General Provisions
  - Rule 1-30: Public Nuisance
- Regulation 2 – Permits
  - Rule 2-1: General Requirements
  - Rule 2-2: New Source Review
  - Rule 2-5: New Source Review of Toxic Air Contaminants
- Regulation 6 – Particulate Matter and Visible Emissions
  - Rule 6-2: Commercial Cooking Equipment

[6] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 11/23/2021.
[7] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May. (Updated May 2017)

Rule 6-3: Wood-Burning Devices
Rule 6-7: Odorous Substances

- Regulation 9 – Inorganic Gaseous Pollutants
  Rule 9-1: Sulfur Dioxide
  Rule 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, And Process Heaters
  Rule 9-8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines

Permits

Rule 2-1-301 requires that any person installing, modifying, or replacing any equipment, the use of which may reduce or control the emission of air contaminants, shall first obtain an Authority to Construct (ATC).

Rule 2-1-302 requires that written authorization from the BAAQMD in the form of a Permit to Operate (PTO) be secured before any such equipment is used or operated.

Rule 2-1 lists sources that are exempt from permitting.

New Source Review

Rule 2-2, New Source Review (NSR), applies to all new and modified sources or facilities that are subject to the requirements of Rule 2-1-301. The purpose of the rule is to provide for review of such sources and to provide mechanisms by which no net increase in emissions will result.

Rule 2-2-301 requires that an applicant for an ATC or PTO apply Best Available Control Technology (BACT) to any new or modified source that results in an increase in emissions and has emissions of precursor organic compounds, non-precursor organic compounds, NOx, SO_2, PM_{10}, or CO of 10.0 pounds or more per highest day. Based on the estimated emissions from the proposed project, BACT will be required for NOx emissions from the diesel-fueled generator engines.

Rule 2-5 applies to new and modified sources of TAC emissions. BAAQMD evaluates the TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. Toxics BACT (or TBACT) is applied to any new or modified source of TACs where the source risk is a cancer risk greater than 1.0 in one million and/or a chronic hazard index greater than 0.20. Permits are not issued for any new or modified source that has risks or net project risks that exceed a cancer risk of 10.0 in one million or a chronic or acute hazard index of 1.0.

Stationary Diesel Airborne Toxic Control Measure

The BAAQMD administers the CARB's Airborne Toxic Control Measure (ACTM) for Stationary Diesel engines (section 93115, title 17 CA Code of Regulations). The project's stationary sources will be new stationary emergency stationary emergency standby diesel engines larger than 50 hp. These limits vary based on maximum engine power. All engines are limited to PM emission rates of 0.15 g/hp-hour, regardless of size. This ACTM limits engine operation 50 hours per year for routine testing and maintenance.

Offsets

Rule 2-2-302 require that offsets be provided for a new or modified source that emits more than 10 tons per year of NOx or precursor organic compounds. It is not expected that emissions of any pollutant will exceed the offset thresholds.

Prohibitory Rules

Regulation 6 pertains to particulate matter and visible emissions. Although the engines will be fueled with diesel, they will be modern, low emission engines. Thus, the engines are expected to comply with Regulation 6.

Rule 6-3 applies to emissions from wood-burning devices. Effective November 1, 2016, no person or builder shall install a wood-burning device in a new building construction.

Rule 9-1 applies to sulfur dioxide. The engines will use ultra-low sulfur diesel fuel (less than 15 ppm sulfur) and will not be a significant source of sulfur dioxide emissions and are expected to comply with the requirements of Rule 9-1.

Rule 9-7 limits the emissions of NOx CO from industrial, institutional and commercial boilers, steam generators and process heaters. This regulation typically applies to boilers with a heat rating of 2 million British Thermal Units (BTU) per hour

Rule 9-8 prescribes NOx and CO emission limits for stationary internal combustion engines. Since the proposed engines will be used with emergency standby generators, Regulation 9-8-110 exempts the engines from the requirements of this Rule, except for the recordkeeping requirements (9-8-530) and limitations on hours of operation for reliability-related operation (maintenance and testing). The engines will not operate more than 50 hours per year, which will satisfy the requirements of 9-8-111.

BACT for Diesel Generator Engines

Since the generators will be used exclusively for emergency use during involuntary loss of power, the BACT levels listed for IC compression engines in the BAAQMD BACT Guidelines would apply. These are provided for two separate size ranges of diesel engines:

> I.C. Engine – Compression Ignition >50hp and <1.000hp: BAAQMD applies BACT 2 emission limits based on the ATCM for stationary emergency standby diesel engines larger than 50 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 3.0 to 3.5 grams per horsepower hour (g/hp-hr). The PM (PM10 or PM2.5) limit is 0.15 g/hp-hr per CARB's ACTM.

I.C. Engine – Compression Ignition >999hp: BAAQMD applies specific BACT emission limits for stationary emergency standby diesel engines equal or larger than 1,000 brake-horsepower (BHP). NOx emission factor limit is subject to the CARB ACTM that ranges from 0.5 g/hp-hr. The PM (PM10 or PM2.5) limit is 0.02 g/hp-hr. POC (i.e., ROG) limits are 0.14 g/hp-hr.

City of San Carlos 2030 General Plan

The San Carlos 2030 General Plan's Environmental Management Element includes policies and actions to reduce exposure of the City's sensitive population to exposure of air pollution, toxic air contaminants, and GHG emissions. The following policies and actions are applicable to the proposed project:

Policies

Policy EM-6.1: Support and comply with the BAAQMD, State and federal standards and policies that improve air quality in the Bay Area.

Policy EM-6.2: Support and encourage commercial uses to adopt environmentally friendly technologies and reduce the release of pollutants.

Policy EM-6.3: Support the reduction of emissions of particulates from wood burning appliances, construction activity, automobiles, trucks and other sources.

Policy EM-6.6: BAAQMD recommended measures to reduce PM_{10} and exhaust emissions associated with construction shall be applied to new development in San Carlos.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the CEQA Air Quality Guidelines in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 1. Impacts above the threshold are considered potentially significant.

Table 1. BAAQMD CEQA Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 $\mu g/m^3$	0.8 $\mu g/m^3$	
Greenhouse Gas Emissions			
Land Use Projects – direct and indirect emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020)		
Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.			

Per discussion with BAAQMD staff, in circumstances where a cumulative Health Risk and Hazards threshold is exceeded, a project's contribution would be considered cumulatively considerable if the project's risk exceeds the single source threshold.[8]

[8] Per email from BAAQMD, Areana Flores, on February 23, 2021.

AIR QUALITY IMPACTS AND MITIGATION MEASURES

Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is the regional agency responsible for overseeing compliance with State and federal laws, regulations, and programs within the San Francisco Bay Area Air Basin (SFBAAB). BAAQMD, with assistance from the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC), prepares and implements specific plans to meet the applicable laws, regulations, and programs. The most recent and comprehensive of which is the *Bay Area 2017 Clean Air Plan*.[9] The primary goals of the Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions and protect the climate. The BAAQMD has also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality and GHG impacts. In formulating compliance strategies, BAAQMD relies on the planned land uses identified in local general plans. Land use planning affects vehicle travel, which, in turn, affects region-wide emissions of air pollutants and GHGs.

Conclusion AIR-1

The 2017 Clean Air Plan, adopted by BAAQMD in April 2017, includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. General plans must show consistency with the control measures listed within the Clean Air Plan. However, at the project-level, there are no consistency measures or thresholds. Despite this, the proposed project would not conflict with the latest Clean Air planning efforts since 1) the project would have construction and operational emissions below the BAAQMD thresholds (see Impact 2 below) and 2) the project would be considered urban infill, 3) the project would be located near employment centers, and 4) the project would be located near transit with regional connections.

Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

The Bay Area is considered a non-attainment area for ground-level O_3 and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for O_3, $PM_{2.5}$ and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for O_3 precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types, size, and anticipated construction schedule were input to

[9] Bay Area Air Quality Management District (BAAQMD), 2017. *Final 2017 Clean Air Plan.*

CalEEMod. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[10] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

<u>CalEEMod Inputs</u>

Land Uses

The proposed restaurant project land uses were entered into CalEEMod as described in Table 2.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet	Acreage
Research & Development	339.73	1000sf	339,733	3.41
Enclosed Parking with Elevator	748	Parking Space	299,200	

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario including equipment list and schedule, were based on information generated using CalEEMod defaults for a project of this type and size that was reviewed and modified by the project applicant.

The construction equipment worksheets included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays were based on CalEEMod defaults and adjusted by the applicant where necessary. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2022, with no construction equipment present on the project site until February 2022, and would be built out over a period of approximately 36 months, or 773 construction workdays. The earliest year of full operation was assumed to be 2026.

Construction Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil

[10] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory

material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and grading were estimated from the provided demolition and grading volumes and assuming each truck could carry 10 tons per load. The number of concrete and asphalt total haul trips were provided and converted to total one-way trips, assuming two trips per round-trip delivery.

The construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in San Mateo County for the years 2022 - 2025 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2021 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Worker Trips[1]	Vendor Trips[1]	Haul Trips[2]	
Vehicle mix[1]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HDDT	
Trip Length (miles)	10.8	7.3	20.0	CalEEMod default distance with 5-min truck idle time.
Demolition	300	-	546	3,700 tons of building and 900 tons of pavement demolition. CalEEMod default worker trips.
Below Grade Garage Excavation	975	-	15,125	121,000-cy soil export. CalEEMod default worker trips.
Below Grade Foundations	250	-	-	CalEEMod default worker trips.
Garage Concrete	20,358	9,135	8,080	4,040 cement round trips. CalEEMod default worker and vendor trips.
Phase 1 – Building Construction North	42,120	18,900	380	190 cement round trips. CalEEMod default worker and vendor trips.
Phase 1 – Site	1,600	-	26	13 asphalt round trips. CalEEMod default worker trips.
Phase 2 – Building Construction South	46,800	21,000	590	295 cement round trips. CalEEMod default worker and vendor trips.
Phase 2 - Site	1,600	-	24	12 asphalt round trips. CalEEMod default worker trips.

Notes: [1] Based on 2022-2025 EMFAC2021 light-duty vehicle fleet mix for San Mateo County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed. Cement and asphalt trips estimated based on data provided by the applicant.

Conclusion AIR-2.1

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions and dividing those emissions by the number of active workdays during that year. Table 4 shows the annualized average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 4, predicted annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

Table 4. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
2022	0.16	1.87	0.09	0.06
2023	0.13	1.56	0.08	0.05
2024 + 2025	1.97	1.65	0.09	0.05
Average Daily Construction Emissions Per Year (pounds/day)				
2022 (235 construction workdays)	1.34	15.88	0.76	0.51
2023 (261 construction workdays)	0.98	11.92	0.61	0.37
2024 + 2025 (278 construction workdays)	14.18	11.90	0.62	0.37
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices*.

***Mitigation Measure AQ-1:* Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future employees and two emergency generators. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to estimate emissions from operation of the proposed project.

<u>CalEEMod Inputs</u>

Land Uses

The project operational land uses were entered into CalEEMod as described above for the construction period modeling.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2026 if construction begins in 2022.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. Therefore, the project-specific daily trip generation rate provided by the traffic consultant was entered into the model.[11] The project would produce 3,606 daily trips. When considering the 1,260 existing use trips applied in the traffic analysis, the project would result in 2,346 net daily trips. The daily trip generation was calculated using the size of the project land uses and the adjusted total automobile trips per land use. The Saturday and Sunday trip rates were adjusted by multiplying the ratio of the CalEEMod default rates for Saturday and Sunday trips to the default weekday rate with the project-specific daily weekday trip rate. The default trip types and lengths specified by CalEEMod were used.

EMFAC2021 Adjustment

The vehicle emission factors and fleet mix used in CalEEMod are based on EMFAC2017, which is an older CARB emission inventory for on road and off-road mobile sources. Since the release of CalEEMod Version 2020.4.0, new emission factors have been produced by CARB. EMFAC2021 became available for use in January 2021. It includes the latest data on California's car and truck fleets and travel activity. The CalEEMod default vehicle emission factors and fleet mix were updated using the emission rates and fleet mix from EMFAC2021. On road emission rates from 2026 San Mateo County were used (See *Attachment 3*). More details about the updates in emissions calculation methodologies and data are available in the EMFAC2021 Technical Support Document.[12]

Energy

The City of San Carlos has banned natural gas from new construction.[13] As a result, the energy intensity factor for natural gas in CalEEMod was set to zero. GHG emissions modeling includes those indirect emissions from electricity consumption. The model has a default rate of 0 pounds of CO_2 per megawatt of electricity produced, which is based on Peninsula Clean Energy's 2019 emissions rate.

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[11] W-Trans, 803-851 Old County Road Project Memorandum of Transportation Analysis Assumptions, February 15, 2022.

[12] See CARB 2021: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/road-documentation/msei-modeling-tools-emfac

[13] City of San Carlos Local Building Energy Standards, Reach Code, URL: https://www.cityofsancarlos.org/Home/ShowDocument?id=6531

Project Generator

The project proposes to include one stand-by emergency diesel generator located on the northeastern boundary of the property to power both buildings in the event of a power failure. The project also proposes to leave room for a second generator to be installed by the tenant. The day-1 standby generator will be a 450-kilowatt (kW) generator powered by a 600-horsepower (hp) engine. The tenant generator is expected to be a 500kW generator powered by a 670hp engine. These generators would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that both generators would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

Project Cooling Tower

The project would include one cooling tower to be located on the top of the southern building. Based on information provided by the applicant, the cooling tower would have a water flow rate of 4,500 gallons per minute (GPM), using public water with an average total dissolved solids (TDS) of 72 parts per million (ppm), and a mist eliminator efficiency of 0.005 percent. Details of the cooling tower PM emissions calculations are provided in *Attachment 3*.

Other Inputs

Default model assumptions for emissions associated with solid waste generation use were applied to the project. Water/wastewater use was changed to 100% aerobic conditions to represent wastewater treatment plant conditions since the project site would not send wastewater to septic tanks or facultative lagoons.

Existing Uses

The existing site consists of 2,800-sf of General Light Industrial, 6,800-sf of Nursery (Garden Center), and 16,450-sf of Pet Day Care Center land use types. The Unrefrigerated Warehouse - No Rail land use type was substituted for the Nursery since CalEEMod does not have a Nursery land use type. Based on the traffic consultant’s project-specific trip generation rates for the existing land uses, the existing conditions at the site account for 1,260 trips. A CalEEMod run for existing land uses was developed for this project.

<u>Conclusion AIR-2.2</u>

Annual emissions were predicted using CalEEMod and daily emissions were estimating assuming 365 days of operation. Table 5 shows average daily construction emissions of ROG, NO_X, total PM_{10}, and total $PM_{2.5}$ during operation of the project. The operational period emissions would not exceed the BAAQMD significance thresholds.

Table 5. Operational Period Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
2026 Annual Project Operational Emissions (*tons/year*)	2.54	1.15	2.43	0.63
2022 Existing Use Operational Emissions (*tons/year*)	0.57	0.48	0.71	0.18
Net Total Operating Emissions	1.96	0.66	1.73	0.45
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	*No*	*No*	*No*	*No*
2025 Daily Project Operational Emissions (*pounds/day*)[1]	10.77	3.63	9.47	2.45
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	*No*	*No*	*No*	*No*
Note: [1]Assumes 365-day operation.				

Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations?

Project impacts related to increased community risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity or by significantly exacerbating existing cumulative TAC impacts. This project would introduce new sources of TACs during construction (i.e., on-site construction and truck hauling emissions) and operation (i.e., stationary and mobile sources).

Project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. The project would include the installation of two stand-by generators powered by a diesel engine and a cooling tower, which would produce TAC and air pollutant emissions. Traffic generated by the project would consist of mostly light-duty gasoline-powered vehicles, which would produce TAC and air pollutant emissions.

Project impacts to existing sensitive receptors were addressed for temporary construction activities and long-term operational conditions. There are also several sources of existing TACs and localized air pollutants in the vicinity of the project. The impact of the existing sources of TAC was also assessed in terms of the cumulative risk which includes the project contribution.

Community Risk Methodology

Community risk impacts were addressed by predicting increased cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The risk impacts from the project are the combination of risk from construction and operation sources. These sources include on-site construction activity, construction truck hauling, project generator use, and increased traffic from the project. To evaluate the increased cancer risks from the project, a 30-year exposure period was used, per BAAQMD guidance,[14] with the sensitive receptors being exposed to both project construction and operation emissions during this timeframe.

The project increased cancer risk is computed by summing the project construction cancer risk and operation cancer risk contribution. Unlike, the increased maximum cancer risk, the annual $PM_{2.5}$ concentration, and HI values are not additive but based on an annual maximum risk for the entirety of the project. The project maximally exposed individual (MEI) is identified as the sensitive receptor that is most impacted by the project's construction and operation.

The methodology for computing community risks impacts is contained in *Attachment 1*. This involved the calculation of TAC and $PM_{2.5}$ emissions, dispersion modeling of these emissions, and computations of cancer risk and non-cancer health effects.

Modeled Sensitive Receptors

Receptors for this assessment included locations where sensitive populations would be present for
extended periods of time (i.e., chronic exposures). This includes the nearby existing residences south, west, and north of the project site, as well as The Children's Place Preschool and Little Learners Preschool, as shown in Figure 1. Residential receptors are assumed to include all receptor groups (i.e., third trimester, infants, children, and adults) with almost continuous exposure to project emissions. Based on information gathered from the websites for each preschool, children at both locations are expected to range in ages from 2 – 5 years old.

Community Risks from Project Construction

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose health risks for sensitive receptors such as surrounding residents. The primary community risk impacts associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust (i.e., DPM) poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[15] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

<u>Construction Emissions</u>

The CalEEMod and EMFAC2021 models provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages of 0.12 tons (232 pounds).

[14] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.
[15] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.03 tons (52 pounds) for the overall construction period.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[16] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area sources.[17] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a five-year meteorological data set (2011-2015) from the San Carlos Airport prepared for use with the AERMOD model by the BAAQMD. Construction emissions were modeled as occurring daily between 8:00 a.m. to 5:00 p.m., when the majority of construction

[16] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.
[17] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm

activity would occur. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2022 - 2025 periods were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 5 feet (1.5 meters), 15 feet (4.5 meters), and 25 feet (7.6 meters) were used to represent the breathing heights on the first, second, and third floors of sensitive receptors in the residences near the site. A receptor height of 3 feet (1 meter) was used for both preschools.

<u>Summary of Construction Community Risk Impacts</u>

The increased cancer risk calculations were based on applying the BAAQMD recommended age sensitivity factors to the TAC concentrations, as described in *Attachment 1*. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period. Child exposures were assumed to occur at the preschools.

The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI values was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 $\mu g/m^3$.

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors to find the MEI. Results of this assessment indicated that the MEI most affected by construction was located on the first floor (5 feet above ground) of the multi-family residence to the southwest of the project. The location of the MEI and nearby sensitive receptors are shown in Figure 1. Table 6 lists the community risks from construction at the location of the residential MEI. *Attachment 4* to this report includes the emission calculations used for the construction modeling and the cancer risk calculations.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum $PM_{2.5}$ concentrations associated with construction activities at the nearby preschools. The maximum increased cancer risks were adjusted using child exposure parameters. The uncontrolled cancer risk, $PM_{2.5}$ concentration, and HI at the nearby preschools do not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 5. Children at both preschools would not have exposure to the project's operational generators. Both preschools admit children from ages 2 through 5. By the time construction would end, the children present at each preschool would have graduated and be elsewhere. Therefore, those children would have no exposure to the operation of the project generators, only project construction.

Figure 1. Location of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impact (MEI)

Community Risks from Project Operation

Operation of the project would have long-term emissions from mobile sources (i.e., traffic) and stationary sources (i.e., generators and cooling towers). While these emissions would not be as intensive at or near the site as construction activity, they would contribute to long-term effects to sensitive receptors.

Project Traffic

Diesel powered vehicles are the primary concern with local traffic-generated TAC impacts. This project would generate a net of 2,346 daily trips[18] with a majority of the trips being from light-duty gasoline-powered vehicles (i.e., passenger cars). The project is not anticipated to generate large amounts of truck trips that would involve diesel vehicles. Per BAAQMD recommended risks and methodology, a road with less than 10,000 total vehicle per day is considered a low-

[18] W-Trans, *803-851 Old County Road Project Memorandum of Transportation Analysis Assumptions*, February 15, 2022.

impact source of TACs and do not need to be considered in the CEQA analysis.[19] In addition, projects with the potential to cause or contribute to increased cancer risk from traffic include those that have attract high numbers of diesel-powered on road trucks or use off-road diesel equipment on site, such as a distribution center, a quarry, or a manufacturing facility, may potentially expose existing or future planned receptors to substantial cancer risk levels and/or health hazards. This is not a project of concern for non-BAAQMD permitted mobile sources. Emissions from project traffic are considered negligible and not included within this analysis.

Project Stand-By Diesel Generator

The project proposes to include one stand-by emergency diesel generator located on the northeastern boundary of the property to power both buildings in the event of a power failure. The project also proposes to leave room for a second generator to be installed by the tenant. The day-1 standby generator will be a 450-kilowatt (kW) generator powered by a 600-horsepower (hp) engine. The tenant generator is expected to be a 500kW generator powered by a 670hp engine. These generators would be tested periodically and power the buildings in the event of a power failure. For modeling purposes, it was assumed that both generators would be operated primarily for testing and maintenance purposes. CARB and BAAQMD requirements limit these engine operations to 50 hours each per year of non-emergency operation. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

These diesel engines would be subject to CARB's Stationary Diesel Airborne Toxics Control Measure (ATCM) and require permits from the BAAQMD, since they will be equipped with an engine larger than 50-HP. As part of the BAAQMD permit requirements for toxics screening analysis, the engine emissions will have to meet Best Available Control Technology for Toxics (TBACT) and pass the toxic risk screening level of less than ten in a million. The risk assessment would be prepared by BAAQMD. Depending on results, BAAQMD would set limits for DPM emissions (e.g., more restricted engine operation periods). Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality community risk impact.

To obtain an estimate of potential cancer risks and $PM_{2.5}$ impacts from operation of the emergency generators the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby residences, students). The same receptors and breathing heights used in the construction dispersion modeling were used for the generator model. Additionally, the same BAAQMD San Carlos Airport meteorological data was used. Stack parameters (stack height, exhaust flow rate, and exhaust gas temperature) for modeling the generators was based on BAAQMD default parameters for emergency generators.[20] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator operation could occur at any time of the day (24 hours per day, 365 days per year).

[19] Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en
[20] The San Francisco Community Risk Reduction Plan: Technical Support Document, BAAQMD, San Francisco Dept. of Public Health, and San Francisco Planning Dept., December 2012

To calculate the increased cancer risk from the generators at the MEI, the cancer risks were also adjusted for exposure duration to account for the MEI being exposed to construction for the first two years of the 30-year period. The exposure duration was adjusted for 26 years of exposure. Table 6 lists the community risks from stand-by diesel generators at the location of residential MEI. The emissions and health risk calculations for the proposed generators are included in *Attachment 4*.

Project Cooling Towers

The project would include one cooling tower on the roof of the proposed southern building. Particulate matter emissions from evaporative cooling can occur and are a result of evaporation of liquid water entrained in the discharge air stream and carried out of the tower as "drift" droplets that contain dissolved solids in the water. Drift droplets that evaporate can produce small particulate matter (i.e., PM_{10} and $PM_{2.5}$) emissions. These emissions are generated when the drift droplets evaporate and leave the particulate matter formed by crystallization of dissolved solids. The cooling towers are not powered by a diesel engine, so no DPM emissions would be produced.

For the health risk assessment, the $PM_{2.5}$ emissions from evaporative cooling were calculated based on a worst-case assumptions including use of evaporative cooling for 100 percent of the time, a water flow rate of 4,500 gallons per minute (gpm), use of 0.005 percent drift eliminators, a total dissolved solids (TDS) concentration of 72 parts per million (ppm) in the recirculating water.[21] Based on a calculated total drift rate, recirculating water TDS concentration of 72 ppm, and PM fractions based on SCAQMD,[22] the $PM_{2.5}$ emissions were calculated as 0.01 tons per year.

To obtain an estimate of potential $PM_{2.5}$ concentrations from operation of the cooling towers, the U.S. EPA AERMOD dispersion model was used to calculate the annual $PM_{2.5}$ concentration at off-site sensitive receptor locations (nearby childcare/school and residences). The same receptors, breathing heights, and BAAQMD San Carlos International Airport meteorological data used in the construction dispersion modeling were used for the generator models. Volume source parameters for modeling the cooling tower were based on project-specific cooling tower parameters (i.e., length of side, release height, emission rate (flow rate, TDS, mist eliminator efficiency)). Annual $PM_{2.5}$ concentrations were modeled assuming that cooling tower would operate at any time of the day (24 hours per day, 365 days per year).

The annual $PM_{2.5}$ concentration were based on an annual maximum risk. Table 6 lists the community risks from cooling towers at the location of childcare MEI and residential maximum receptor. The particulate matter emissions for the proposed cooling towers are included in *Attachment 5*.

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[21] Recirculating water flow rate and maximum TDS concentration provided by the applicant.

[22] South Coast AQMD, *Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A.* October 2006. Web: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf

Laboratories

This type of project may include research and manufacturing type laboratories. Since a specific user or type of lab use is not known at this time, it is not possible to predict whether there would be any TAC emissions and, if so, the quantities that would be emitted. Typically, laboratory uses have fume hoods and would employ appropriate exhaust systems to control any emission of air pollutants. Emissions of air pollutants or TACs are subject to BAAQMD permitting requirements that would require the District to apply all applicable rules and regulations to limit or control these emissions. Regulation 2, Rule 1: General Requirements, and Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants would apply to any potential emissions from these sources. The District's risk policy is to not issue a permit to any source that would cause a cancer risk of greater than 10 chances per million.

Summary of Project-Related Community Risks at the Offsite Project MEI

The cumulative risk impacts from a project are the combination of construction and operation sources. These sources include on-site construction activity and the project generator and cooling tower. The project impact is computed by adding the construction cancer risk for an infant to the increased cancer risk for the project operational conditions for the roadway and generator at the MEI over a 30-year period. The project MEI is identified as the sensitive receptor that is most impacted by the project's construction and operation.

For this project, the sensitive receptor identified in Figure 1 as the construction MEI is also the project MEI. At this location, the MEI would be exposed to 4 year of construction cancer risks and 26 years of operational (includes stand-by generators and cooling tower) cancer risks. The cancer risks from construction and operation of the project were summed together. Unlike the increased maximum cancer risk, the annual $PM_{2.5}$ concentration and HI risks are not additive but based on an annual maximum risk for the entirety of the project.

Project risk impacts are shown in Table 6. The unmitigated maximum cancer risks, annual $PM_{2.5}$ concentration, and Hazard Index from construction activities at the residential project MEI location would not exceed the single-source significance thresholds.

Table 6. Construction and Operation Risk Impacts at the Off-Site Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction (Years 0 - 4) Unmitigated		4.10 (infant)	0.02	<0.01
Project Generator Operation (Years 4 - 30)		0.11 (child)	0.01	<0.01
Project Cooling Towers (Years 4 - 30)		-	<0.01	-
Total/Maximum Project Impact (Years 0 - 30) Unmitigated		4.21 (infant)	0.02	<0.01
	BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
Most Affected Preschool – Children's Place Preschool				
Project Construction	Unmitigated	0.70 (child)	0.01	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*

Cumulative Community Risks of all TAC Sources at the Off-Site Project MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include freeways or highways, rail lines, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area indicates that traffic on El Camino Real, Old County Road, and Commercial Street would exceed 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. Caltrain rail lines are located near the project site. A review of BAAQMD's stationary source map website identified ten stationary sources with the potential to affect the project MEI. Figure 2 shows the location of the sources affecting the MEI. Community risk impacts from these sources upon the MEI reported in Table 7. Details of the modeling and community risk calculations are included in *Attachment 5.*

Figure 2. Project Site, Project Generators, and Nearby TAC and $PM_{2.5}$ Sources

Rail Line Community Risk Impacts

The Caltrain analysis for this project was borrowed from the *Illingworth & Rodkin, Inc.* analysis for the 960 Industrial Road and 915 Commercial Street project, henceforth known in this report as the Alexandria Center for Life Sciences (ACLS) project. The ACLS project is located across Commercial Street from the project site in this analysis. As a result, the MEI for this project is located near the MEI for the ACLS project, but is further away from the rail line. As such, the unmodified inclusion of this CalTrain analysis is considered a conservative approach to analyzing the rail line impacts at the project MEI.

The Caltrain rail lines are about 80 feet southwest of the site. Rail activity on these lines currently generates TAC and $PM_{2.5}$ emissions from locomotive exhaust. These rail lines are used primarily for Caltrain passenger service; however, there is some freight service by trains using diesel-fueled locomotives. Based on the current Caltrain schedule effective August 30, 2021 there are 104 trains that pass the project site during weekdays and 32 on weekends. In addition to the passenger trains there are about four freight trains that use the rail lines on a daily basis.[23]

[23] U.S. Department of Transportation, Federal Railroad Administration. U.S. DOT Crossing Inventory Form for Crossing 754935A. September 2, 2019.

Currently, all of Caltrain's trains use diesel locomotives. The Peninsula Corridor Electrification Project is a key component of the Caltrain Modernization Program that would electrify the Caltrain Corridor from San Francisco to the Tamien Caltrain station in San José. As part of the program to modernize operation of the Caltrain rail corridor between San José and San Francisco, Caltrain is planning to phase in the change from using diesel locomotives to use of electric trains.[24] This plan was formally adopted on January 8, 2015[25] and electrified service is anticipated to begin in late 2024.[26]

Caltrain plans are that initial service between San José and San Francisco would use a mixed fleet of electric and diesel locomotives, with approximately 75 percent of the service being electric and 25 percent being diesel. After the initial implementation period, diesel locomotives would be replaced with electric trains over time as they reach the end of their service life. Caltrain's diesel-powered locomotives would continue to be used to provide service between the San José Diridon Station and Gilroy. It is expected that all of the San José to San Francisco fleet would be electric trains about five to eight years after initial electric service begins.[27]

Starting in 2024 with Caltrain electrification, there would be 24 daily weekday trips and 4 daily weekend trips using trains with diesel locomotives[28]. On an annual average basis this would be a total of 18 daily trains using diesel locomotives. Use of these diesel trains by Caltrain between San Francisco and San Jose would be phased out over time and replaced by electric trains. All trains used for freight service were assumed to use diesel powered locomotives.

Rail Line Emissions

For this evaluation it was assumed that during the period from 2022 through 2024 all trains would continue to use diesel locomotives. Along the rail line near the project site there would be a total of 83 daily trains using diesel locomotives on an annual average basis. Starting in 2025 when Caltrain electrification occurs there would be 24 daily weekday trips and 4 daily weekend trips using trains with diesel locomotives[29]. On an annual average basis there would be a total of 18 daily trains using diesel locomotives. Although these diesel locomotives would be replaced over time with electric locomotives, it was conservatively assumed for this evaluation that diesel emissions would remain at the 2025 levels in the future. All trains used for freight service were assumed to use diesel powered locomotives. In the vicinity of the project site all trains were assumed to be traveling at an average speed 40 mph.

DPM and $PM_{2.5}$ emissions from trains on the rail line were calculated using EPA emission factors for locomotives[30] and CARB adjustment factors to account for fuels used in California[31]. Caltrain's current locomotive fleet consists of twenty-three 3,200 hp locomotives of model year

[24] Caltrain, 2014. *Peninsula Corridor Electrification Project. Final Environmental Impact Report.* December 2014.
[25] Caltrain, 2015. *Peninsula Corridor Electrification Fact Sheet.* May 2015.
[26] Caltrain, 2021. *Caltrain Electrification Delayed to 2024*. June 3, 2021. See: *www.caltrain.com/about/MediaRelations/news/Caltrain_Electrification_Delayed_to_2024.html*
[27] Caltrain 2015. *Short Range Transit Plan:FY2015-2024*. October 1, 2015.
[28] Caltrain 2015. *Short Range Transit Plan:FY2015-2024*. October 1, 2015.
[29] Caltrain 2015. *Short Range Transit Plan:FY2015-2024*. October 1, 2015.
[30] *Emission Factors for Locomotives*, USEPA 2009 (EPA-420-F-09-025)
[31] *Offroad Modeling, Change Technical Memo*, Changes to the Locomotive Inventory, CARB July 2006.

or overhaul date of 1999 or later, three 3,200 hp locomotives of model year 1998, and six 3,600 hp locomotives of model year 2003.[32] The current fleet average locomotive engine size is about 3,285 hp. In estimating diesel emissions for 2021 through 2024 prior to electrification a fleet average locomotive engine size of 3,285 hp was used. When electrification occurs, Caltrain will initially retain the six 3,600 hp locomotives and the three model year 1998 3,200 hp locomotives[33]. In estimating diesel locomotive emissions for the case of electrification, an average locomotive horsepower of 3,467 hp was used. Emissions from the freight trains were calculated assuming they would use two diesel locomotives with 2,300 hp engines (total of 4,600 hp) and would be traveling at 40 mph. Since the exposure duration used in calculating residential cancer risks is 30 years (in this case the period from 2021 through 2050), the passenger and freight train average DPM and $PM_{2.5}$ emissions were calculated based on average EPA emission factors for the periods 2021-2024 and 2025-2050.

<u>Local Roadways – El Camino Real, Old County Road, Commercial Street</u>

A refined analysis of potential health impacts from vehicle traffic on El Camino Real, Old County Road, and Commercial Street was conducted. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on the roadway near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Emission Rates

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on both roadways using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for $PM_{2.5}$. All $PM_{2.5}$ emissions from all vehicles were used, rather than just the $PM_{2.5}$ fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce $PM_{2.5}$. Additionally, $PM_{2.5}$ emissions from vehicle tire and brake wear and from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (San Mateo County), type of road (major/collector), truck percentage for non-state highways in San Mateo County (3.13 percent),[34] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2022 – construction start year), and season (annual).

In order to estimate TAC and $PM_{2.5}$ emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI and project site, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2022 (first project

[32] Caltrain *Commute Fleets*. Available at: http://www.caltrain.com/about/statsandreports.html. Accessed January 4, 2022.
[33] Caltrain 2015. *Short Range Transit Plan:FY2015-2024*. October 1, 2015.
[34] Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

construction year). Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CT-EMFAC2017. Year 2022 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

The average daily traffic (ADT) for El Camino Real, Old County Road, and Commercial Street was based on traffic data and trip generation data for the ACLS project. Assuming a full build out of the ACLS project results in operational trips from that project of 23,472 trips. The calculated ADT on El Camino Real was 35,086 vehicles. The ADTs for Old County Road and Commercial Street also included the operational trips of the ACLS project, even though that project will not be fully constructed until 2029. The calculated ADT for Old County Road and Commercial Street was 34,472 vehicles. Average hourly traffic distributions for San Mateo County roadways were developed using the EMFAC model,[35] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. An average travel speed of 35 mph on El Camino Real and Old County Road, and 25 mph on Commercial Street, was used for all hours of the day based on posted speed limit signs on the roadways.

Caltrain and Roadway Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the U.S. EPA AERMOD dispersion model, which is recommended by the BAAQMD for this type of analysis.[36] TAC and $PM_{2.5}$ emissions from the nearby Caltrain line and each roadway within about 1,000 feet of the project site were evaluated with the model. Emissions from vehicle traffic and train travel were modeled in AERMOD using a series of volume sources along a line (line volume sources), with line segments used to represent opposing travel lanes on each roadway, and the Caltrain rail line. The same meteorological data and off-site sensitive receptors used in the previous project dispersion modeling were used in the highway and roadway modeling. Other inputs to the model included road geometry, hourly traffic emissions, and receptor locations and heights. Annual TAC and $PM_{2.5}$ concentrations for 2022 from traffic on each local roadway were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 5 feet (1.5 meters) to represent the breathing heights on the first floor of the nearby residence. Community risk impacts from the rail line and roadways sources upon the MEI are reported in Table 7 and calculations are included in *Attachment 5*.

<u>Stationary Sources</u>

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2018* geographic information system (GIS) map website.[37] This mapping tool identifies the location of nearby stationary sources and their

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[35] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2014 does not include Burden type output with hour by hour traffic volume information.
[36] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012
[37] BAAQMD, Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

estimated risk and hazard impacts. Ten sources were identified using this tool, however, only seven sources will still be operational upon completion of this project. The three other sources are to be demolished as part of this project or the ACLS project. The BAAQMD GIS website did not provide screening risks and hazards for all sources, so a stationary source information request was submitted to BAAQMD. Further, the adjacent ACLS project is anticipated to include 12 diesel-fired emergency generators. The effects of those generators on the project MEI are included in this analysis.

The screening risk and hazard levels for the sources were adjusted for distance using BAAQMD's *Gasoline Dispensing Facility, Diesel Internal Combustion Engine, and Generic Equipment Distance Adjustment Multiplier Tools*. Estimated community risk values for the permitted stationary source is listed in Table 7.

Stationary-Source: CEMEX Construction Materials Pacific, LLC (Plant #2939)

The project site is near a ready-mix concrete manufacturing plant, CEMEX Construction Materials Pacific, LLC, that is permitted to operate as Plant #2939. Concrete plants are a source of $PM_{2.5}$ emissions associated with the pulverization of raw material, kiln burning, clinker production and storage, and other processes at the facility. BAAQMD provides screening $PM_{2.5}$ risk predictions for this facility through their Source Risk & Hazards Screening Report that was ran on December 1, 2021. The screening annual $PM_{2.5}$ concentration at the facility was reported at 8.5 ug/m^3. However, this is an over prediction because BAAQMD uses maximum permitted values rather than actual production values. Since screening projections indicated the annual $PM_{2.5}$ emissions would be above the single-source threshold, the next step in this evaluation was to conduct a more refined screening assessment of the facility based on additional tools. This involves obtaining actual emissions data for the facility reported by the California Air Resource Boards' California Emissions Inventory Data Analysis and Reporting System (CEIDARS) and conducting dispersion modeling.

For modeling fugitive $PM_{2.5}$ emissions, an area source with a near-ground level release height of 7 feet (2 meters) was used. The emission rate for the area source was based on the size of the parcel the CEMEX plant is located on, and the $PM_{2.5}$ emissions reported in 2019 to CEIDARS. It is assumed that the emissions generated by the CEMEX plant would be distributed evenly over the entire area source. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For this reason, a 7-foot release height was used as the average release height across the CEMEX site.

Stationary-Source: ACLS Project (960 Industrial Road and 915 Commercial Street)

The project site is adjacent to the ongoing construction of the ACLS project, located at 960 Industrial Road and 915 Commercial Street. That project is expected to construct a total of 12 generators, six of which would be 1,500-kW diesel-fired emergency generators powered by 2,000-hp engines, three would be 1,250-kW diesel-fired emergency generators powered by 1,675-hp engines, and the final three would be 1,000-kW diesel-fired emergency generators powered by 1,350-hp engines. Even though this adjacent project isn't projected to finish construction until 2029, operation of all generators is included in this analysis.

To obtain an estimate of potential cancer risks and $PM_{2.5}$ impacts from operation of the emergency generators at the project MEI, the U.S. EPA AERMOD dispersion model was used to calculate the maximum annual DPM concentration at off-site sensitive receptor locations (nearby childcare/school and residences). The same receptors, breathing heights, and BAAQMD San Carlos Airport meteorological data used in the construction dispersion modeling were used for the generator models. Stack parameters for modeling the generators were based on BAAQMD default parameters (i.e., exhaust gas flowrate, stack diameter, stack height, and exhaust gas temperature) for stand-by diesel generators.[38] Annual average DPM and $PM_{2.5}$ concentrations were modeled assuming that generator testing could occur at any time of the day (24 hours per day, 365 days per year).

Construction Risk Impacts from Nearby Developments

A. **ACLS Project** – this project is located at 960 Industrial Road and 915 Commercial Street, approximately 65 feet southeast of the project site. The project proposes the construction of 1,734,532-sf of Research and Development space across multiple life science buildings. The ACLS project has been analyzed by *Illingworth & Rodkin, Inc.* and is proposed to have simultaneous construction with this project. The MEI for this project was included in the analysis for the ACLS project, but was not the MEI for the ACLS project. However, for conservatism, the risk values from the ACLS project are applied to this project's MEI as if it were the MEI for the ACLS project. There are a number of other development projects approved by the City of San Carlos. With the exception of the ACLS Project mentioned above, none of the other approved projects are within the 1,000-foot influence area of this project. Other projects could be proposed within the 1,000-foot influence area of this project. However, such projects would not affect the significance conclusions made in this analysis and would require their own analysis to determine the effects of their construction and operation on surrounding sensitive receptors.

Conclusion AIR-3

Table 7 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by project construction and operation (i.e., the project MEI). As shown in Table 7, the MEI would experience a significant cumulative impact with respect to $PM_{2.5}$ concentration. As noted in the Significance Thresholds section, in circumstances where a cumulative risk threshold is exceeded, a project's contribution would be considered cumulatively considerable if the project's risk exceeds the single source threshold. The project's unmitigated $PM_{2.5}$ concentration represents about 1.4 percent of the total cumulative concentration and does not exceed the single source threshold. Because the project's community risk would not exceed the single source thresholds, the project would not be considered to have a cumulatively significant

[38] Bay Area Air Quality Management District, San Francisco Department of Public Health, and San Francisco Planning Department, 2012. *The San Francisco Community Risk Reduction Plan: Technical Support Document,* BAAQMD, December. Web: https://www.gsweventcenter.com/Appeal_Response_References/2012_1201_BAAQMD.pdf

impact on the MEI as the contribution from the project is not cumulatively considerable. The cumulative cancer risk, HI, and annual $PM_{2.5}$ concentrations by source are provided in Table 7. As shown, cumulative $PM_{2.5}$ concentration thresholds at the MEI are exceeded primarily due to the MEI's location near one significant source of TAC emissions: CEMEX Construction Materials Pacific, LLC. This existing source of TAC emissions is shown by BAAQMD to exceed the single source threshold. This source is permitted by BAAQMD and subject to CARB and EPA permitting requirements.

Table 7. Cumulative Community Risk Impacts at the Location of the Project MEI

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts			
Total/Maximum Project Impact (Years 0-30) Unmitigated	4.21 (infant)	0.02	<0.01
BAAQMD Single-Source Threshold	***10***	***0.3***	***1.0***
Exceed Threshold? Unmitigated	*No*	*No*	*No*
Additional Cumulative Sources			
El Camino Real, ADT 35,086	4.43	0.28	<0.01
Old County Road, ADT 34,472	3.42	0.13	<0.01
Commercial Street, ADT 34,472	1.31	0.04	<0.01
Caltrain and freight rail[1]	28.80	0.06	<0.01
ACLS project Generators[2]	<0.01	<0.01	<0.01
CEMEX Construction Materials Pacific, LLC (Facility ID #2939, Ready-Mix Concrete Manufacturing), MEI at 1000+ feet[3]	0.36	0.67	0.01
Royalite Manufacturing Inc (Facility ID #10925, Metal Coating Operation), MEI at 1000+ feet	<0.01	<0.01	<0.01
Nxedge San Carlos (Facility ID #20582, Generator, Boilers, Solvent Coating Operations), MEI at 1000+ feet	0.10	0.01	<0.01
Grove Construction (Facility ID #24886, Sub-slab Vapor Mitigation System), MEI at 1000+ feet	0.02	-	<0.01
Plantation Coffee Roastery (Facility ID #23758, Coffee Roaster), MEI at 950 feet	<0.01	<0.01	<0.01
Nielsen Automotive Inc (Facility ID #103155, Gas Dispensing Facility), MEI at 220 feet	1.93	-	0.01
City of San Carlos – Corporation Yard (Facility ID #108501, Gas Dispensing Facility), MEI at 1000+ feet	0.14	<0.01	<0.01
ACLS project Construction Emissions – 65 feet southeast	7.03	0.19	<0.03
Combined Sources Unmitigated	<51.78	**<1.44**	<0.16
BAAQMD Cumulative Source Threshold	***100***	***0.8***	***10.0***
Exceed Threshold? Unmitigated	*No*	***Yes***	*No*

[1]For a conservative analysis, planned electrification of Caltrain was not factored into this analysis.
[2]Emissions from all generators at the ACLS project have been modeled in AERMOD
[3]The annual $PM_{2.5}$ concentration for the CEMEX source was modeled using AERMOD.

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's

GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 80 percent below 1990 levels.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State's main strategies to reduce GHGs from business-as-usual emissions projected in 2020 back down to 1990 levels. Business-as-usual (BAU) is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 million metric tons (MMT) of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a greenhouse gas emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*.[39] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB is currently working on a second update to the Scoping Plan to reflect

[39] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

the 2030 target set by Executive Order B-30-15 and codified by SB 32. The proposed Scoping Plan Update was published on January 20, 2017 as directed by SB 32 companion legislation AB 197. The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and obtain the statewide goals.

The new Scoping Plan establishes a strategy that will reduce GHG emissions in California to meet the 2030 target (note that the AB 32 Scoping Plan only addressed 2020 targets and a long-term goal). Key features of this plan are:

- Cap and Trade program places a firm limit on 80 percent of the State's emissions;
- Achieving a 50-percent Renewable Portfolio Standard by 2030 (currently at about 29 percent statewide);
- Increase energy efficiency in existing buildings;
- Develop fuels with an 18-percent reduction in carbon intensity;
- Develop more high-density, transit-oriented housing;
- Develop walkable and bikeable communities;
- Greatly increase the number of electric vehicles on the road and reduce oil demand in half;
- Increase zero-emissions transit so that 100 percent of new buses are zero emissions;
- Reduce freight-related emissions by transitioning to zero emissions where feasible and near-zero emissions with renewable fuels everywhere else; and
- Reduce "super pollutants" by reducing methane and hydrofluorocarbons or HFCs by 40 percent.

In the updated Scoping Plan, CARB recommends statewide targets of no more than 6 metric tons (MT) CO_2e per capita (statewide) by 2030 and no more than 2 metric tons CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term State emissions reduction goal of 80 percent below 1990 levels by 2050.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g. Association of Bay Area Governments [ABAG] and Metropolitan Transportation Commission [MTC]) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2017 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[40] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2019 California Building Standard Code) was effective as of January 1, 2020.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during

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[40] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.

the planning and building permit process. The current energy efficiency standards (2019 Energy Code) replaced the 2016 Energy Code as of January 1,2020. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[41]

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[42] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations and are regularly updated on a 3-year cycle. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen standards have recently been updated (2022 version) to require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness and the actual installation of EV chargers. The 2022 CALGreen standards include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation[43]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

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[41] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

[42] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August

[43] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* December.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2018, total gross nationwide GHG emissions were 6,676.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[44] These emissions were lower than peak levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2017 emissions.[45] In 2017, GHG emissions from statewide emitting activities were 424 MMT. The 2017 emissions have decreased by 14 percent since peak levels in 2004 and are 7 MMT below the 1990 emissions level and the State's 2020 GHG limit. Per capita GHG emissions in California have dropped from a 2001 peak of 14.1 MT per person to 10.7 MT per person in 2017. The most recent Bay Area emission inventory was computed for the year 2011.[46] The Bay Area GHG emission were 87 MMT. As a point of comparison, statewide emissions were about 444 MMT in 2011

City of San Carlos 2030 General Plan

The City of San Carlos General Plan 2030 includes policies and programs to reduce exposure of the City's sensitive population to exposure of air pollution, TACs, and GHG emissions. The following policies and programs are applicable to the proposed project:

Policies

Policy EM-7.1: Take appropriate action to address climate change and reduce greenhouse gas emissions.

Policy EM-7.3: Participate in regional, State, and federal efforts to reduce greenhouse gas emissions and mitigate the impacts resulting from climate change.

Policy EM-7.6: Support greenhouse gas (GHG) emission reduction measures and climate change resiliency strategies that are cost effective and help create an environmentally sustainable, livable, and equitable community. The cost of implementation to the City and private sector shall be considered prior to the adoption of any GHG reduction strategy.

BAAQMD GHG Significance Thresholds

The BAAQMD's CEQA Air Quality Guidelines do not use quantified thresholds for projects that are in a jurisdiction with a qualified GHG reductions plan (i.e., a Climate Action Plan). The plan has to address emissions associated with the period that the project would operate (e.g., beyond year 2020). For quantified emissions, the guidelines recommended a GHG threshold of 1,100 metric tons or 4.6 metric tons (MT) per capita. These thresholds were developed based on

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[44] United States Environmental Protection Agency, 2020. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018*. April. Web: https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-main-text.pdf

[45] CARB. 2019. *2019 Edition, California Greenhouse Gas Emission Inventory: 2000 – 2017*. Web: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf

[46] BAAQMD. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. January. Web: http://www.baaqmd.gov/~/media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf accessed Nov. 26, 2019.

meeting the 2020 GHG targets set in the scoping plan that addressed AB 32. Development of the project would occur beyond 2020, so a threshold that addresses a future target is appropriate.

This assessment uses a "Substantial Progress" efficiency metric of 2.8 MT CO_2e/year/service population and a bright-line threshold of 660 MT CO_{2e}/year based on the GHG reduction goals of EO B-30-15. The service population metric of 2.8 is calculated for 2030 based on the 1990 inventory and the projected 2030 statewide population and employment levels.[47] The 2030 bright-line threshold is a 40 percent reduction of the 2020 1,100 MT CO_{2e}/year threshold. Evidence published by the State indicates the AB 32 goal of reducing statewide GHG emissions to 1990 levels was met prior to 2020. Current State plans are to further reduce emissions to 40% below 1990 levels by 2030. Assuming statewide emissions are at 1990 levels or lower in 2020, it would be logical to reduce the BAAQMD-recommended threshold for meeting the AB 32 threshold by 40% to develop a threshold for 2030.

Since BAAQMD has now adopted their new thresholds of significance for operational GHG emissions from land use projects, this assessment also measures compliance against those new thresholds. The following framework is how BAAQMD will determine GHG significance moving forward[48].

A. Projects must include, at a minimum, the following project design elements:
    a. Buildings
        i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
        ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    b. Transportation
        i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
            1. Residential Projects: 15 percent below the existing VMT per capita
            2. Office Projects: 15 percent below the existing VMT per employee
            3. Retail Projects: no net increase in existing VMT
        ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

[47] Bay Area Air Quality Management District, 2016. *CLE International 12th Annual Super-Conference CEQA Guidelines, Case Law and Policy Update*. December.
[48] Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Any new land use project would have to include either section A or B from the above list, not both, to be considered in compliance for GHG emissions from project operation.

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

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above within the construction period emissions. CalEEMod output is included in *Attachment 2*.

Service Population Emissions

The project service population efficiency rate is based on the number of future employees. For this project, the traffic consultant provided their estimate for the service population, which was also used for this analysis, of 1,085 employees[49].

GHG Emissions

GHG emissions associated with construction were computed at 2,272 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. As is standard practice, construction emissions have been amortized over the average 40-year life-space of a building and added to the operational emissions for analysis.

The CalEEMod model, along with the project vehicle trip generation rates, was used to estimate daily emissions associated with operation of the fully-developed site under the proposed project. As shown in Table 12, net annual GHG emissions resulting from operation of the proposed

[49] W-Trans, *803-851 Old County Road Project Memorandum of Transportation Analysis Assumptions*, February 15, 2022.

project are predicted to be, when including amortized construction GHG emissions, 1,695 MT of CO_2e in 2030. The service population emission for the year 2030, when including amortized construction GHG emissions, is predicted to be 2.32 MT/CO_{2e}/year/service population.

Conclusion GHG-1

To be considered an exceedance, the project must exceed both the GHG significance threshold in metric tons per year and the service population significance threshold in the future year of 2030. The project would exceed the annual emissions bright-line threshold of 660 MT CO_2e/year in 2030 but not the service population significance threshold. Therefore, the GHG emissions from the project would be considered less than significant.

Table 9. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Existing Use	Proposed Project	Net Increase
Construction (amortized)	0.00	56.8	56.8
Area	0.00	0.02	0.02
Energy Consumption	18.61	0.00	-18.61
Mobile	791.30	2,351.59	1,560.29
Solid Waste Generation	15.72	12.99	-2.73
Water Usage	3.98	102.55	98.57
Total (MT CO_{2e}/year)	829.61	2,523.95	1,694.34
Bright-Line Significance Threshold			***660 MT CO_2e/year***
Exceeds Bright-Line Threshold?			***Yes***
Service Population Emissions (MT CO_{2e}/year/service population)		2.32	1.56
Service Population Significance Threshold		***2.8 in 2030***	***2.8 in 2030***
Exceeds Service Population Threshold?		***No***	***No***
Exceeds Both Significance Thresholds?		***No***	***No***

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

The proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficacy standards. To avoid interference with statewide GHG reduction measures identified in CARB's Scoping Plan and SB 100 goals, the project would include the following standard requirements:

1. Avoid construction of new natural gas connections for the residential building,
    - Conforms – compliance with City Reach Code would prohibit natural gas infrastructure in new buildings.
2. Avoid wasteful or inefficient use of electricity,

- Conforms – would meet CALGreen Building Standards Code requirements that are considered to be energy efficient.

3. Include electric vehicle charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and
    - Conforms – project would provide 75 EV standard spaces, 2 EV accessible spaces, and 1 EV van accessible space.
4. Reduce VMT per service population by 15 percent over regional average.
    - Conforms – With implementation of a City-required TDM Plan to achieve a 20% reduction in vehicle trips, the project was calculated to achieve greater than 20% VMT reductions for resultant VMT rates at least 15 percent below the county average.[50] The San Mateo countywide average VMT rate for employment based VMT per service population is 17.0. After mitigation, the project's reduced VMT rate is 12.2, a 28% reduction.

Conclusion GHG-2

Conformity with the requirements outlined in *Impact GHG-2* would also constitute conformity with the newly adopted BAAQMD GHG thresholds since these requirements align with the standard requirements outlined by BAAQMD as their GHG thresholds for land use projects[51]. Since four out of four requirements are met, the project's GHG impacts would be considered less than significant, and conformity with the new BAAQMD GHG thresholds are met.

[50] W-Trans, 841 Old County Road CEQA Transportation Analysis

[51] Justification Report: BAAQMD CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Project and Plans. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-thresholds-2022/justification-report-pdf.pdf?la=en

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute increased cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction and operational criteria air pollutant. The operational output for existing and 2030 project uses is also included in this attachment. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 5 includes the cumulative community risk calculations, modeling results, and health risk calculations from sources affecting the MEI.

Attachment 1: Health Risk Calculation Methodology

Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[52] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[53] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[54] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

<u>Cancer Risk</u>

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile

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[52] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[53] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[54] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

The health risk parameters used in this evaluation are summarized as follows:

Parameter	Exposure Type →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

* For worker exposures (adult) the exposure duration and frequency are 25 years 250 days/year and FAH is not applicable.

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter (µg/m^3).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Input Assumptions and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: **803 - 851 Old County Road**

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	____________ **Dwelling Units**	**3.41** **total project acres disturbed**	
	____________ **s.f. residential**		**Pile Driving? Y/N? No**
	____________ **s.f. retail**		
	339,733 **s.f. office/commercial**		**Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/N? __N__**
	____________ **s.f. other, specify:**		**IF YES (if BOTH separate values) -->**
	270,872 **s.f. parking garage**	**748** **spaces**	**Kilowatts/Horsepower: __________**
	____________ **s.f. parking lot**	____________ **spaces**	**Fuel Type: ____________**
			Location in project (Plans Desired if Available):
Construction Hours	**am to**	**pm**	

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Abatement	**Start Date:**	**1/3/2022**	**Total phase:**	**25**			**Overall Import/Export Volumes**
		End Date:	**2/4/2022**					
						0	0	**Abatement completed with hand tools only using permanent power**
						0	0	
	Other Equipment?							
	Demolition	**Start Date:**	**2/7/2022**	**Total phase:**	**20**			**Overall Import/Export Volumes**
		End Date:	**3/7/2022**					
1	Concrete/Industrial Saws	81	0.73	1	2.5	0.125	148	**Demolition Volume**
3	Excavators	158	0.38	8	20	8	28819	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	247	0.4	4	10	2	7904	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37	0		0	0	
	Other Equipment?							__3700__ Hauling volume (tons)
								Any pavement demolished and hauled **900 tons**
	Below Grade Garage Excavation and Grading	**Start Date:**	**3/8/2022**	**Total phase:**	**65**			
		End Date:	**6/8/2022**					**Soil Hauling Volume**
2	Excavators	158	0.38	8	65	8	62442	Export volume = __121000__ cubic yards
1	Graders	187	0.41	8	6	0.73846154	3680	Import volume = __0__ cubic yards
1	Rubber Tired Dozers	247	0.4	8	6	0.73846154	4742	
0	Scrapers	367	0.48	0	0	0	0	
2	Tractors/Loaders/Backhoes	97	0.37	8	32	3.93846154	18376	
	Other Equipment?							
	Below Grade Garage Foundations	**Start Date:**	**5/24/2022**	**Total phase:**	**50**			
		End Date:	**8/5/2022**					
1	Excavators	158	0.38	8	50	8	24016	
1	Tractors/Loaders/Backhoes	97	0.37	8	25	4	7178	
	Other Equipment?							
	Garage Concrete	**Start Date:**	**6/23/2022**	**Total phase:**	**87**			**Cement Trucks __4040__ Total Round-Trips**
		End Date:	**10/27/2022**					
1	Cranes	231	0.29	8	87	8	46625	Electric? (Y/N) _Y__ Otherwise assumed diesel
3	Forklifts	89	0.2	6	87	6	27875	Liquid Propane (LPG)? (Y/N) __N_ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	20	1.83908046	9946	Or temporary line power? (Y/N) __Y_
0	Tractors/Loaders/Backhoes	97	0.37	0	0			
0	Welders	46	0.45			0	0	
	Other Equipment?							
	Phase 1 - Building Construction North	**Start Date:**	**10/28/2022**	**Total phase:**	**180**			**Cement Trucks __190__ Total Round-Trips**
		End Date:	**7/21/2023**					
1	Cranes	231	0.29	8	180	8	96466	Electric? (Y/N) __Y_ Otherwise assumed diesel
3	Forklifts	89	0.2	6	180	6	57672	Liquid Propane (LPG)? (Y/N) __N_ Otherwise Assumed diesel
0	Generator Sets	84	0.74	0	0	0	0	Or temporary line power? (Y/N) _Y__
2	Tractors/Loaders/Backhoes	97	0.37	8	40	1.77777778	22970	
3	Welders	46	0.45	8	20	0.88888889	9936	
	Other Equipment?							
	Phase 1 - Site	**Start Date:**	**7/24/2023**	**Total phase:**	**80**			
		End Date:	**11/14/2023**					
2	Pavers	130	0.42	8	5	0.5	4368	
2	Paving Equipment	132	0.36	8	5	0.5	3802	**Asphalt? _338__ cubic yards or ___13_ round trips?**
2	Rollers	80	0.38	8	5	0.5	2432	
2	Tractors/Loaders/Backhoes	97	0.37	8	75	3	43068	
	Other Equipment?							
	Phase 2 - Building Construction South	**Start Date:**	**12/15/2023**	**Total phase:**	**200**			**Cement Trucks __295__ Total Round-Trips**
		Start Date:	**10/2/2024**					
1	Cranes	231	0.29	8	200	8	107184	Electric? (Y/N) _Y__ Otherwise assumed diesel
3	Forklifts	89	0.2	6	200	6	64080	Liquid Propane (LPG)? (Y/N) _N__ Otherwise Assumed diesel
0	Generator Sets	84	0.74	0	0	0	0	Or temporary line power? (Y/N) __Y_
2	Tractors/Loaders/Backhoes	97	0.37	8	40	1.6	22970	
3	Welders	46	0.45	8	20	0.8	9936	
	Other Equipment?							
	Phase 2 - Site	**Start Date:**	**10/3/2024**	**Total phase:**	**80**			
		Start Date:	**1/30/2025**					
2	Pavers	130	0.42	8	5	0.5	4368	
2	Paving Equipment	132	0.36	8	5	0.5	3802	**Asphalt? _312__ cubic yards or __12__ round trips?**
2	Rollers	80	0.38	8	5	0.5	2432	
2	Tractors/Loaders/Backhoes	97	0.37	8	75	3	43068	
	Other Equipment?							
						#DIV/0!	0	
						#DIV/0!	0	
Building - Interior/Architectural Coating		**Start Date:**		**Total phase:**	**0**			
		End Date:						
0	Air Compressors	78	0.48	0	0	#DIV/0!	0	
0	Aerial Lift	62	0.31	0	0	#DIV/0!	0	
	Other Equipment?							

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

Complete one sheet for each project component

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	**CO2e**	
Year	Tons				MT	
Construction Equipment						
2022	0.09	0.87	0.04	0.04	138.81	
2023	0.06	0.59	0.03	0.03	85.96	
2024 + 2025	1.90	0.68	0.03	0.03	106.19	
EMFAC						
2022	0.07	1.00	0.05	0.02	599.61	
2023	0.07	0.97	0.05	0.02	656.30	
2024 + 2025	0.07	0.98	0.05	0.02	684.92	
Total Construction Emissions by Year						
2022	0.16	1.87	0.09	0.06	738.42	
2023	0.13	1.56	0.08	0.05	742.25	
2024 + 2025	1.97	1.65	0.09	0.05	791.10	
	Total Construction Emissions					
Tons	2.26	5.08	0.26	0.16	2271.78	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2022	1.34	15.88	0.76	0.51		**235**
2023	0.98	11.92	0.61	0.37		**261**
2024 + 2025	14.18	11.90	0.62	0.37		**278**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	16.50	39.71	1.99	1.24	0.00	
Average	5.83	13.12	0.66	0.41	0.00	774.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Operational Criteria Air Pollutants						
Unmitigated	ROG	NOX	Total PM10	Total PM2.5		
Year	Tons					
Total	2.54	1.15	2.43	0.63		
	Existing Use Emissions					
Total	0.57	0.48	0.71	0.18		
	Net Annual Operational Emissions					
Tons/year	1.96	0.66	1.73	0.45		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	10.77	3.63	9.47	2.45		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Area	0.02	0.00	0.02	0.00
Energy	0.00	18.61	0.00	18.61
Mobile	2351.59	791.30	2351.59	791.30
Waste	12.99	15.72	12.99	15.72
Water	102.55	3.98	102.55	3.98
TOTAL	2467.15	829.61	2467.14	829.61
Net GHG Emissions		1637.54		1637.53
Service Population	1085.00			
Per Capita Emissions		2.27		1.51

Traffic Consultant Trip Gen						CalEEMod Default			
Land Use		**Size**	**Daily Trips**	**New Trips**	**Weekday Trip Gen**		**Weekday**	**Sat**	**Sun**
Research & Development		325.473	3606	3606	***11.08***		11.26	1.9	1.11
	Reduction		*0*			*Rev*		***1.87***	***1.09***
	Reduction		*0*						

Traffic Consultant Trip Gen - Existing Use					CalEEMod Default			
Land Use	**Size**	**Daily Trips**	**New Trips**	**Weekday Trip Gen**		**Weekday**	**Sat**	**Sun**
General Light Industrial	2.8	14	477	***4.87***		4.96	1.99	5
					Rev		***1.95***	***4.91***
Unrefrigerated Warehouse - No Rail	6.8	463	463	***68.09***		1.74	1.74	1.74
					Rev		***68.09***	***68.09***
Pet Day Care Center	16.45	783	783	***47.60***		47.62	6.22	5.84
					Rev		***6.22***	***5.84***

Date: 3/4/2022 11:37 AM

21-197 803-851 Old County Road - San Mateo County, Annual

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

21-197 803-851 Old County Road
San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	339.73	1000sqft	3.41	339,733.00	0
Enclosed Parking with Elevator	748.00	Space	0.00	299,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2026
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Assume peninsula

Land Use - Applicant provided square footage, and lot acreage. Parking spaces from plot plan.

Construction Phase - Phase dates and lengths provided by applicant

Off-road Equipment - AC phase just for coatings.

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment -

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment - Construction equipment info provided by applicant.

21-197 803-851 Old County Road - San Mateo County, Annual

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

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment - Construction equipment info provided by applicant.

Trips and VMT - All trips entered into EMFAC2021

Demolition -

Grading -

Vehicle Trips - 11.08 ITE 11th Gen rate for R&D.

Vehicle Emission Factors - Emission factors from EMFAC2021

Energy Use - No Natural gas usage

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i, BMP

Fleet Mix - Fleet Mix from EMFAC2021

Stationary Sources - Emergency Generators and Fire Pumps - Generator information supplied by applicant as 450kW and 500kW. Engine sizes assumed.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	169867	169967
tblAreaCoating	Area_Nonresidential_Interior	509600	509900
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	8.00	65.00
tblConstructionPhase	NumDays	230.00	87.00
tblConstructionPhase	NumDays	230.00	180.00
tblConstructionPhase	NumDays	18.00	80.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	18.00	80.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24NG	17.67	0.00
tblFleetMix	HHD	1.9940e-003	7.1990e-003
tblFleetMix	HHD	1.9940e-003	7.1990e-003
tblFleetMix	LDA	0.46	0.43
tblFleetMix	LDA	0.46	0.43
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT2	0.24	0.29
tblFleetMix	LDT2	0.24	0.29

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD1	0.03	0.03
tblFleetMix	LHD2	6.5760e-003	7.5870e-003
tblFleetMix	LHD2	6.5760e-003	7.5870e-003
tblFleetMix	MCY	0.03	4.3200e-003
tblFleetMix	MCY	0.03	4.3200e-003
tblFleetMix	MDV	0.15	0.17
tblFleetMix	MDV	0.15	0.17
tblFleetMix	MH	2.7100e-003	6.6100e-004
tblFleetMix	MH	2.7100e-003	6.6100e-004
tblFleetMix	MHD	0.01	0.01
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	1.4220e-003	4.8150e-003
tblFleetMix	OBUS	1.4220e-003	4.8150e-003
tblFleetMix	SBUS	4.2900e-004	4.2000e-004
tblFleetMix	SBUS	4.2900e-004	4.2000e-004
tblFleetMix	UBUS	5.5300e-004	1.8380e-003
tblFleetMix	UBUS	5.5300e-004	1.8380e-003
tblGrading	MaterialExported	0.00	121,000.00
tblLandUse	LandUseSquareFeet	339,730.00	339,733.00
tblLandUse	LotAcreage	7.80	3.41
tblLandUse	LotAcreage	6.73	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.10
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	1.80
tblOffRoadEquipment	UsageHours	8.00	0.70
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.50
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	0.70
tblOffRoadEquipment	UsageHours	7.00	1.80
tblOffRoadEquipment	UsageHours	7.00	1.60
tblOffRoadEquipment	UsageHours	8.00	3.90
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	8.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.90
tblOffRoadEquipment	UsageHours	8.00	0.80

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblSolidWaste	SolidWasteGenerationRate	25.82	25.83
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	600.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	670.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	366.00	0.00
tblTripsAndVMT	HaulingTripNumber	15,125.00	0.00
tblTripsAndVMT	VendorTripNumber	105.00	0.00
tblTripsAndVMT	VendorTripNumber	105.00	0.00
tblTripsAndVMT	VendorTripNumber	105.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblTripsAndVMT	WorkerTripNumber	234.00	0.00
tblTripsAndVMT	WorkerTripNumber	234.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	234.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	47.00	0.00
tblVehicleEF	HHD	0.03	0.26
tblVehicleEF	HHD	0.18	0.24
tblVehicleEF	HHD	3.0000e-006	1.0000e-006
tblVehicleEF	HHD	5.33	4.67
tblVehicleEF	HHD	0.98	1.62
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	918.32	754.99
tblVehicleEF	HHD	1,552.18	1,706.42

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	HHD	0.30	0.27
tblVehicleEF	HHD	0.15	0.12
tblVehicleEF	HHD	0.25	0.27
tblVehicleEF	HHD	3.0000e-006	1.0000e-006
tblVehicleEF	HHD	5.18	3.87
tblVehicleEF	HHD	2.98	2.37
tblVehicleEF	HHD	2.40	2.76
tblVehicleEF	HHD	3.5170e-003	2.8090e-003
tblVehicleEF	HHD	0.06	0.09
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.0000e-006	4.0000e-006
tblVehicleEF	HHD	3.3650e-003	2.6810e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.7260e-003	8.6280e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	2.0000e-006	3.0000e-006
tblVehicleEF	HHD	4.0000e-006	4.9900e-004
tblVehicleEF	HHD	2.2300e-004	1.5400e-004
tblVehicleEF	HHD	0.36	0.28
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	1.0400e-004	1.1170e-003
tblVehicleEF	HHD	1.4000e-005	3.0000e-006
tblVehicleEF	HHD	8.1670e-003	6.2420e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	4.0000e-006	4.9900e-004
tblVehicleEF	HHD	2.2300e-004	1.5400e-004
tblVehicleEF	HHD	0.42	0.57

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	0.22	0.27
tblVehicleEF	HHD	1.0400e-004	1.1170e-003
tblVehicleEF	HHD	1.6000e-005	3.0000e-006
tblVehicleEF	LDA	1.2190e-003	1.4700e-003
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.43	0.50
tblVehicleEF	LDA	1.93	2.58
tblVehicleEF	LDA	216.60	234.63
tblVehicleEF	LDA	46.19	61.06
tblVehicleEF	LDA	3.3450e-003	3.3860e-003
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.14	0.20
tblVehicleEF	LDA	0.04	6.3890e-003
tblVehicleEF	LDA	1.1380e-003	1.0580e-003
tblVehicleEF	LDA	1.5520e-003	1.8410e-003
tblVehicleEF	LDA	0.02	2.2360e-003
tblVehicleEF	LDA	1.0480e-003	9.7400e-004
tblVehicleEF	LDA	1.4270e-003	1.6920e-003
tblVehicleEF	LDA	0.03	0.23
tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	4.4790e-003	5.5190e-003
tblVehicleEF	LDA	0.03	0.18
tblVehicleEF	LDA	0.16	0.25
tblVehicleEF	LDA	2.1430e-003	2.3190e-003
tblVehicleEF	LDA	4.5700e-004	6.0400e-004
tblVehicleEF	LDA	0.03	0.23

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LDA	0.07	0.07
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	6.5080e-003	8.0440e-003
tblVehicleEF	LDA	0.03	0.18
tblVehicleEF	LDA	0.18	0.28
tblVehicleEF	LDT1	1.8700e-003	3.5960e-003
tblVehicleEF	LDT1	0.04	0.08
tblVehicleEF	LDT1	0.55	0.90
tblVehicleEF	LDT1	2.04	3.87
tblVehicleEF	LDT1	256.44	305.82
tblVehicleEF	LDT1	54.67	79.07
tblVehicleEF	LDT1	3.8820e-003	6.2380e-003
tblVehicleEF	LDT1	0.02	0.03
tblVehicleEF	LDT1	0.04	0.08
tblVehicleEF	LDT1	0.16	0.29
tblVehicleEF	LDT1	0.04	8.0030e-003
tblVehicleEF	LDT1	1.3340e-003	1.4570e-003
tblVehicleEF	LDT1	1.7860e-003	2.3270e-003
tblVehicleEF	LDT1	0.02	2.8010e-003
tblVehicleEF	LDT1	1.2270e-003	1.3400e-003
tblVehicleEF	LDT1	1.6420e-003	2.1390e-003
tblVehicleEF	LDT1	0.03	0.39
tblVehicleEF	LDT1	0.08	0.11
tblVehicleEF	LDT1	0.03	0.00
tblVehicleEF	LDT1	7.4400e-003	0.02
tblVehicleEF	LDT1	0.06	0.31
tblVehicleEF	LDT1	0.18	0.38
tblVehicleEF	LDT1	2.5380e-003	3.0230e-003
tblVehicleEF	LDT1	5.4100e-004	7.8200e-004

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

tblVehicleEF	LDT1	0.03	0.39
tblVehicleEF	LDT1	0.08	0.11
tblVehicleEF	LDT1	0.03	0.00
tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	0.06	0.31
tblVehicleEF	LDT1	0.20	0.42
tblVehicleEF	LDT2	1.7740e-003	1.7890e-003
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.53	0.58
tblVehicleEF	LDT2	2.45	2.85
tblVehicleEF	LDT2	266.61	314.27
tblVehicleEF	LDT2	57.23	79.26
tblVehicleEF	LDT2	4.0120e-003	4.2030e-003
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.18	0.24
tblVehicleEF	LDT2	0.04	7.7090e-003
tblVehicleEF	LDT2	1.2490e-003	1.1420e-003
tblVehicleEF	LDT2	1.6240e-003	1.8740e-003
tblVehicleEF	LDT2	0.02	2.6980e-003
tblVehicleEF	LDT2	1.1500e-003	1.0510e-003
tblVehicleEF	LDT2	1.4930e-003	1.7230e-003
tblVehicleEF	LDT2	0.03	0.18
tblVehicleEF	LDT2	0.07	0.05
tblVehicleEF	LDT2	0.04	0.00
tblVehicleEF	LDT2	6.7290e-003	6.6320e-003
tblVehicleEF	LDT2	0.05	0.14
tblVehicleEF	LDT2	0.21	0.27
tblVehicleEF	LDT2	2.6370e-003	3.1060e-003

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LDT2	5.6600e-004	7.8400e-004
tblVehicleEF	LDT2	0.03	0.18
tblVehicleEF	LDT2	0.07	0.05
tblVehicleEF	LDT2	0.04	0.00
tblVehicleEF	LDT2	9.7820e-003	9.6640e-003
tblVehicleEF	LDT2	0.05	0.14
tblVehicleEF	LDT2	0.22	0.30
tblVehicleEF	LHD1	4.5140e-003	4.8760e-003
tblVehicleEF	LHD1	5.4950e-003	4.5650e-003
tblVehicleEF	LHD1	9.5940e-003	0.02
tblVehicleEF	LHD1	0.18	0.20
tblVehicleEF	LHD1	0.48	0.64
tblVehicleEF	LHD1	0.94	2.37
tblVehicleEF	LHD1	8.47	8.15
tblVehicleEF	LHD1	737.51	728.24
tblVehicleEF	LHD1	10.85	18.41
tblVehicleEF	LHD1	7.2000e-004	5.6800e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.05	0.03
tblVehicleEF	LHD1	0.30	0.30
tblVehicleEF	LHD1	0.24	0.37
tblVehicleEF	LHD1	8.6800e-004	6.2400e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.8230e-003	9.3120e-003
tblVehicleEF	LHD1	6.7560e-003	8.0740e-003
tblVehicleEF	LHD1	2.1800e-004	1.5000e-004
tblVehicleEF	LHD1	8.3100e-004	5.9700e-004
tblVehicleEF	LHD1	0.03	0.03

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LHD1	2.4560e-003	2.3280e-003
tblVehicleEF	LHD1	6.4180e-003	7.6900e-003
tblVehicleEF	LHD1	2.0100e-004	1.3800e-004
tblVehicleEF	LHD1	1.0160e-003	0.08
tblVehicleEF	LHD1	0.04	0.02
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	6.6400e-004	0.00
tblVehicleEF	LHD1	0.07	0.05
tblVehicleEF	LHD1	0.14	0.12
tblVehicleEF	LHD1	0.05	0.09
tblVehicleEF	LHD1	8.2000e-005	7.9000e-005
tblVehicleEF	LHD1	7.1980e-003	7.1160e-003
tblVehicleEF	LHD1	1.0700e-004	1.8200e-004
tblVehicleEF	LHD1	1.0160e-003	0.08
tblVehicleEF	LHD1	0.04	0.02
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	6.6400e-004	0.00
tblVehicleEF	LHD1	0.09	0.06
tblVehicleEF	LHD1	0.14	0.12
tblVehicleEF	LHD1	0.05	0.10
tblVehicleEF	LHD2	2.7780e-003	2.7520e-003
tblVehicleEF	LHD2	5.2910e-003	4.5630e-003
tblVehicleEF	LHD2	5.4930e-003	9.8130e-003
tblVehicleEF	LHD2	0.14	0.14
tblVehicleEF	LHD2	0.45	0.40
tblVehicleEF	LHD2	0.54	1.29
tblVehicleEF	LHD2	13.15	13.03
tblVehicleEF	LHD2	714.58	767.93
tblVehicleEF	LHD2	7.23	9.65

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LHD2	1.6420e-003	1.5760e-003
tblVehicleEF	LHD2	0.06	0.08
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.33	0.42
tblVehicleEF	LHD2	0.14	0.20
tblVehicleEF	LHD2	1.4300e-003	1.3600e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.1600e-004	7.1000e-005
tblVehicleEF	LHD2	1.3680e-003	1.3010e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.6940e-003	2.6520e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.0700e-004	6.5000e-005
tblVehicleEF	LHD2	5.2600e-004	0.05
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.5200e-004	0.00
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.07	0.06
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	LHD2	1.2600e-004	1.2500e-004
tblVehicleEF	LHD2	6.9000e-003	7.3970e-003
tblVehicleEF	LHD2	7.2000e-005	9.5000e-005
tblVehicleEF	LHD2	5.2600e-004	0.05
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.02	0.02

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LHD2	3.5200e-004	0.00
tblVehicleEF	LHD2	0.11	0.09
tblVehicleEF	LHD2	0.07	0.06
tblVehicleEF	LHD2	0.03	0.05
tblVehicleEF	MCY	0.32	0.14
tblVehicleEF	MCY	0.25	0.16
tblVehicleEF	MCY	18.15	10.37
tblVehicleEF	MCY	9.30	7.65
tblVehicleEF	MCY	212.73	186.06
tblVehicleEF	MCY	59.56	43.37
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	6.7190e-003
tblVehicleEF	MCY	1.15	0.50
tblVehicleEF	MCY	0.27	0.11
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.1750e-003	2.0430e-003
tblVehicleEF	MCY	3.0860e-003	3.7110e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.0290e-003	1.9080e-003
tblVehicleEF	MCY	2.8900e-003	3.4790e-003
tblVehicleEF	MCY	0.60	3.07
tblVehicleEF	MCY	0.50	3.55
tblVehicleEF	MCY	0.35	0.00
tblVehicleEF	MCY	2.16	0.86
tblVehicleEF	MCY	0.41	3.70
tblVehicleEF	MCY	1.92	1.17
tblVehicleEF	MCY	2.1050e-003	1.8390e-003
tblVehicleEF	MCY	5.8900e-004	4.2900e-004
tblVehicleEF	MCY	0.60	0.07

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MCY	0.50	3.55
tblVehicleEF	MCY	0.35	0.00
tblVehicleEF	MCY	2.70	1.05
tblVehicleEF	MCY	0.41	3.70
tblVehicleEF	MCY	2.09	1.27
tblVehicleEF	MDV	1.7570e-003	1.9290e-003
tblVehicleEF	MDV	0.05	0.07
tblVehicleEF	MDV	0.52	0.58
tblVehicleEF	MDV	2.51	2.91
tblVehicleEF	MDV	319.87	375.63
tblVehicleEF	MDV	67.56	94.16
tblVehicleEF	MDV	5.2310e-003	4.9850e-003
tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.19	0.27
tblVehicleEF	MDV	0.04	7.7320e-003
tblVehicleEF	MDV	1.2510e-003	1.1370e-003
tblVehicleEF	MDV	1.6150e-003	1.8700e-003
tblVehicleEF	MDV	0.02	2.7060e-003
tblVehicleEF	MDV	1.1530e-003	1.0470e-003
tblVehicleEF	MDV	1.4850e-003	1.7190e-003
tblVehicleEF	MDV	0.04	0.20
tblVehicleEF	MDV	0.08	0.06
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	6.7990e-003	7.4810e-003
tblVehicleEF	MDV	0.05	0.15
tblVehicleEF	MDV	0.22	0.31
tblVehicleEF	MDV	3.1610e-003	3.7120e-003
tblVehicleEF	MDV	6.6900e-004	9.3100e-004

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MDV	0.04	0.20
tblVehicleEF	MDV	0.08	0.06
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	9.8500e-003	0.01
tblVehicleEF	MDV	0.05	0.15
tblVehicleEF	MDV	0.24	0.34
tblVehicleEF	MH	5.1820e-003	7.1470e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.37	0.57
tblVehicleEF	MH	1.73	2.16
tblVehicleEF	MH	1,396.02	1,665.32
tblVehicleEF	MH	16.23	21.04
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	0.90	1.10
tblVehicleEF	MH	0.23	0.27
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	2.3700e-004	2.8300e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2820e-003	3.3260e-003
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	2.1800e-004	2.6000e-004
tblVehicleEF	MH	0.22	18.29
tblVehicleEF	MH	0.02	5.00
tblVehicleEF	MH	0.10	0.00
tblVehicleEF	MH	0.04	0.05
tblVehicleEF	MH	5.1170e-003	0.12

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.6100e-004	2.0800e-004
tblVehicleEF	MH	0.22	18.29
tblVehicleEF	MH	0.02	5.00
tblVehicleEF	MH	0.10	0.00
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	5.1170e-003	0.12
tblVehicleEF	MH	0.08	0.10
tblVehicleEF	MHD	3.9230e-003	0.02
tblVehicleEF	MHD	1.2630e-003	0.01
tblVehicleEF	MHD	9.2080e-003	0.01
tblVehicleEF	MHD	0.38	0.67
tblVehicleEF	MHD	0.18	0.28
tblVehicleEF	MHD	1.00	1.20
tblVehicleEF	MHD	60.51	145.05
tblVehicleEF	MHD	1,025.16	1,231.98
tblVehicleEF	MHD	9.37	10.40
tblVehicleEF	MHD	8.5730e-003	0.02
tblVehicleEF	MHD	0.13	0.14
tblVehicleEF	MHD	8.1030e-003	7.9490e-003
tblVehicleEF	MHD	0.32	0.78
tblVehicleEF	MHD	1.30	0.88
tblVehicleEF	MHD	1.66	1.29
tblVehicleEF	MHD	2.0600e-004	1.4680e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	6.2330e-003	9.8980e-003
tblVehicleEF	MHD	1.1600e-004	1.2900e-004
tblVehicleEF	MHD	1.9700e-004	1.4040e-003

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	5.9560e-003	9.4580e-003
tblVehicleEF	MHD	1.0700e-004	1.1800e-004
tblVehicleEF	MHD	2.5000e-004	0.02
tblVehicleEF	MHD	0.01	5.7950e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	1.6800e-004	0.00
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	5.7500e-004	1.3410e-003
tblVehicleEF	MHD	9.7860e-003	0.01
tblVehicleEF	MHD	9.3000e-005	1.0300e-004
tblVehicleEF	MHD	2.5000e-004	0.02
tblVehicleEF	MHD	0.01	5.7950e-003
tblVehicleEF	MHD	0.03	0.05
tblVehicleEF	MHD	1.6800e-004	0.00
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	0.02	0.05
tblVehicleEF	MHD	0.05	0.06
tblVehicleEF	OBUS	6.7250e-003	6.6740e-003
tblVehicleEF	OBUS	2.3110e-003	7.8490e-003
tblVehicleEF	OBUS	0.01	9.7750e-003
tblVehicleEF	OBUS	0.64	0.49
tblVehicleEF	OBUS	0.28	0.20
tblVehicleEF	OBUS	1.45	1.00
tblVehicleEF	OBUS	104.30	90.30
tblVehicleEF	OBUS	1,266.64	1,277.63
tblVehicleEF	OBUS	12.68	8.98

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.13	0.16
tblVehicleEF	OBUS	0.01	9.4470e-003
tblVehicleEF	OBUS	0.45	0.38
tblVehicleEF	OBUS	1.48	0.70
tblVehicleEF	OBUS	1.21	1.12
tblVehicleEF	OBUS	1.4700e-004	2.2800e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	7.7360e-003	8.1660e-003
tblVehicleEF	OBUS	1.4400e-004	9.5000e-005
tblVehicleEF	OBUS	1.4000e-004	2.1800e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.3880e-003	7.8060e-003
tblVehicleEF	OBUS	1.3200e-004	8.7000e-005
tblVehicleEF	OBUS	7.3600e-004	0.03
tblVehicleEF	OBUS	0.01	7.8480e-003
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	3.9100e-004	0.00
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	OBUS	9.9000e-004	8.5000e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.2600e-004	8.9000e-005
tblVehicleEF	OBUS	7.3600e-004	0.03
tblVehicleEF	OBUS	0.01	7.8480e-003
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	3.9100e-004	0.00
tblVehicleEF	OBUS	0.02	0.03

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.08	0.05
tblVehicleEF	SBUS	0.12	0.10
tblVehicleEF	SBUS	8.2290e-003	0.08
tblVehicleEF	SBUS	0.01	8.6540e-003
tblVehicleEF	SBUS	4.36	2.49
tblVehicleEF	SBUS	0.74	1.29
tblVehicleEF	SBUS	1.65	1.24
tblVehicleEF	SBUS	369.41	205.13
tblVehicleEF	SBUS	954.24	943.80
tblVehicleEF	SBUS	8.70	6.19
tblVehicleEF	SBUS	0.04	0.02
tblVehicleEF	SBUS	0.10	0.11
tblVehicleEF	SBUS	8.9290e-003	5.9080e-003
tblVehicleEF	SBUS	2.98	1.32
tblVehicleEF	SBUS	3.77	2.30
tblVehicleEF	SBUS	0.78	0.49
tblVehicleEF	SBUS	3.1040e-003	1.2450e-003
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	1.4100e-004	8.3000e-005
tblVehicleEF	SBUS	2.9700e-003	1.1900e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.5030e-003	2.5040e-003
tblVehicleEF	SBUS	0.02	9.9830e-003
tblVehicleEF	SBUS	1.3000e-004	7.6000e-005
tblVehicleEF	SBUS	7.2700e-004	0.05
tblVehicleEF	SBUS	8.9440e-003	0.01

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	SBUS	0.53	0.29
tblVehicleEF	SBUS	3.6900e-004	0.00
tblVehicleEF	SBUS	0.08	0.07
tblVehicleEF	SBUS	0.01	0.04
tblVehicleEF	SBUS	0.06	0.05
tblVehicleEF	SBUS	3.5400e-003	1.8780e-003
tblVehicleEF	SBUS	9.1900e-003	8.8440e-003
tblVehicleEF	SBUS	8.6000e-005	6.1000e-005
tblVehicleEF	SBUS	7.2700e-004	0.05
tblVehicleEF	SBUS	8.9440e-003	0.01
tblVehicleEF	SBUS	0.76	0.46
tblVehicleEF	SBUS	3.6900e-004	0.00
tblVehicleEF	SBUS	0.10	0.16
tblVehicleEF	SBUS	0.01	0.04
tblVehicleEF	SBUS	0.07	0.05
tblVehicleEF	UBUS	1.52	0.55
tblVehicleEF	UBUS	0.01	5.0270e-003
tblVehicleEF	UBUS	11.42	6.31
tblVehicleEF	UBUS	0.83	0.91
tblVehicleEF	UBUS	1,603.70	1,056.63
tblVehicleEF	UBUS	9.22	5.43
tblVehicleEF	UBUS	0.26	0.16
tblVehicleEF	UBUS	7.4890e-003	8.0120e-003
tblVehicleEF	UBUS	0.69	0.25
tblVehicleEF	UBUS	0.11	0.05
tblVehicleEF	UBUS	0.08	0.14
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	4.9940e-003	4.6950e-003
tblVehicleEF	UBUS	5.3000e-005	2.5000e-005

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	7.8010e-003	0.01
tblVehicleEF	UBUS	4.7760e-003	4.4860e-003
tblVehicleEF	UBUS	4.9000e-005	2.3000e-005
tblVehicleEF	UBUS	7.4200e-004	0.01
tblVehicleEF	UBUS	0.01	4.1030e-003
tblVehicleEF	UBUS	5.8200e-004	0.00
tblVehicleEF	UBUS	0.02	0.05
tblVehicleEF	UBUS	5.2500e-003	0.01
tblVehicleEF	UBUS	0.06	0.02
tblVehicleEF	UBUS	0.01	8.4680e-003
tblVehicleEF	UBUS	9.1000e-005	5.4000e-005
tblVehicleEF	UBUS	7.4200e-004	0.01
tblVehicleEF	UBUS	0.01	4.1030e-003
tblVehicleEF	UBUS	5.8200e-004	0.00
tblVehicleEF	UBUS	1.55	0.61
tblVehicleEF	UBUS	5.2500e-003	0.01
tblVehicleEF	UBUS	0.07	0.02
tblVehicleTrips	ST_TR	1.90	1.87
tblVehicleTrips	SU_TR	1.11	1.09
tblVehicleTrips	WD_TR	11.26	11.08
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	167,043,184.68	167,141,523.47
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

21-197 803-851 Old County Road - San Mateo County, Annual

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

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0882	0.8650	0.8937	1.5700e-003	0.0666	0.0429	0.1095	0.0168	0.0397	0.0564	0.0000	137.7426	137.7426	0.0427	0.0000	138.8103
2023	0.0604	0.5889	0.5360	9.8000e-004	0.0000	0.0286	0.0286	0.0000	0.0264	0.0264	0.0000	85.2918	85.2918	0.0266	0.0000	85.9570
2024	1.9028	0.6667	0.6245	1.1800e-003	0.0000	0.0310	0.0310	0.0000	0.0286	0.0286	0.0000	102.7193	102.7193	0.0320	0.0000	103.5203
2025	1.2500e-003	0.0123	0.0207	3.0000e-005	0.0000	5.3000e-004	5.3000e-004	0.0000	4.9000e-004	4.9000e-004	0.0000	2.6451	2.6451	8.6000e-004	0.0000	2.6665
Maximum	**1.9028**	**0.8650**	**0.8937**	**1.5700e-003**	**0.0666**	**0.0429**	**0.1095**	**0.0168**	**0.0397**	**0.0564**	**0.0000**	**137.7426**	**137.7426**	**0.0427**	**0.0000**	**138.8103**

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	0.0183	0.4834	0.8293	1.1200e-003	0.0300	2.1700e-003	0.0321	7.5500e-003	2.1700e-003	9.7200e-003	0.0000	98.4976	98.4976	0.0315	0.0000	99.2861
2023	0.0119	0.2595	0.4151	5.6000e-004	0.0000	1.9500e-003	1.9500e-003	0.0000	1.9500e-003	1.9500e-003	0.0000	48.5377	48.5377	0.0147	0.0000	48.9057
2024	1.8475	0.2937	0.4688	6.4000e-004	0.0000	2.2500e-003	2.2500e-003	0.0000	2.2500e-003	2.2500e-003	0.0000	54.8132	54.8132	0.0166	0.0000	55.2269

2025	5.8000e-004	0.0132	0.0227	3.0000e-005	0.0000	5.0000e-005	5.0000e-005	0.0000	5.0000e-005	5.0000e-005	0.0000	2.6451	2.6451	8.6000e-004	0.0000	2.6665
Maximum	**1.8475**	**0.4834**	**0.8293**	**1.1200e-003**	**0.0300**	**2.2500e-003**	**0.0321**	**7.5500e-003**	**2.2500e-003**	**9.7200e-003**	**0.0000**	**98.4976**	**98.4976**	**0.0315**	**0.0000**	**99.2861**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**8.50**	**50.79**	**16.34**	**37.50**	**54.99**	**93.77**	**78.55**	**54.98**	**93.25**	**87.52**	**0.00**	**37.73**	**37.73**	**37.71**	**0.00**	**37.73**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-3-2022**	**4-2-2022**	0.1661	0.1363
2	**4-3-2022**	**7-2-2022**	0.2343	0.1988
3	**7-3-2022**	**10-2-2022**	0.2913	0.0849
4	**10-3-2022**	**1-2-2023**	0.2590	0.0779
5	**1-3-2023**	**4-2-2023**	0.2533	0.0902
6	**4-3-2023**	**7-2-2023**	0.2561	0.0912
7	**7-3-2023**	**10-2-2023**	0.0611	0.0475
8	**10-3-2023**	**1-2-2024**	0.0795	0.0420
9	**1-3-2024**	**4-2-2024**	0.2326	0.0868
10	**4-3-2024**	**7-2-2024**	0.2326	0.0868
11	**7-3-2024**	**10-2-2024**	0.2020	0.0753
12	**10-3-2024**	**1-2-2025**	1.9528	1.9485
13	**1-3-2025**	**4-2-2025**	0.0121	0.0123
		Highest	1.9528	1.9485

2.2 Overall Operational

Unmitigated Operational

21-197 803-851 Old County Road - 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					
Area	1.5306	9.0000e-005	9.9700e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.9553	1.0001	7.9634	0.0265	2.3912	0.0159	2.4072	0.5968	0.0149	0.6117	0.0000	2,459.1164	2,459.1164	0.0988	0.1054	2,493.0057
Stationary	0.0521	0.1456	0.1329	2.5000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	24.1806	24.1806	3.3900e-003	0.0000	24.2654
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900
Water						0.0000	0.0000		0.0000	0.0000	59.1349	0.0000	59.1349	0.2035	0.1286	102.5459
Total	**2.5380**	**1.1458**	**8.1062**	**0.0268**	**2.3912**	**0.0236**	**2.4149**	**0.5968**	**0.0226**	**0.6194**	**64.3782**	**2,483.3165**	**2,547.6947**	**0.6157**	**0.2340**	**2,632.8276**

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	1.5306	9.0000e-005	9.9700e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.9553	1.0001	7.9634	0.0265	2.3912	0.0159	2.4072	0.5968	0.0149	0.6117	0.0000	2,459.1164	2,459.1164	0.0988	0.1054	2,493.0057
Stationary	0.0521	0.1456	0.1329	2.5000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	24.1806	24.1806	3.3900e-003	0.0000	24.2654
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900

21-197 803-851 Old County Road - San Mateo County, Annual

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

Water						0.0000	0.0000		0.0000	0.0000	59.1349	0.0000	59.1349	0.2035	0.1286	102.5459
Total	**2.5380**	**1.1458**	**8.1062**	**0.0268**	**2.3912**	**0.0236**	**2.4149**	**0.5968**	**0.0226**	**0.6194**	**64.3782**	**2,483.3165**	**2,547.6947**	**0.6157**	**0.2340**	**2,632.8276**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/7/2022	3/4/2022	5	20	
2	Below Grade Garage Excavation and Grading	Grading	3/8/2022	6/6/2022	5	65	
3	Below Grade Foundations	Trenching	5/24/2022	8/1/2022	5	50	
4	Garage Concrete	Building Construction	6/23/2022	10/21/2022	5	87	
5	Phase 1 - Building Construction North	Building Construction	10/28/2022	7/6/2023	5	180	
6	Phase 1 - Site	Paving	7/24/2023	11/10/2023	5	80	
7	Phase 2 - Building Construction South	Building Construction	12/15/2023	9/19/2024	5	200	
8	Phase 2 - Site	Paving	10/3/2024	1/22/2025	5	80	
9	Architechural Coating	Architectural Coating	10/3/2024	10/28/2024	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 5.69

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 509,600; Non-Residential Outdoor: 169,867; Striped Parking Area: 17,952

OffRoad Equipment

21-197 803-851 Old County Road - San Mateo County, Annual

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

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	0.10	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	2.00	247	0.40
Below Grade Garage Excavation and Grading	Excavators	2	8.00	158	0.38
Below Grade Garage Excavation and Grading	Graders	1	0.70	187	0.41
Below Grade Garage Excavation and Grading	Rubber Tired Dozers	1	0.70	247	0.40
Below Grade Garage Excavation and Grading	Tractors/Loaders/Backhoes	2	3.90	97	0.37
Below Grade Foundations	Excavators	1	8.00	158	0.38
Below Grade Foundations	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Garage Concrete	Cranes	1	8.00	231	0.29
Garage Concrete	Forklifts	3	6.00	89	0.20
Garage Concrete	Generator Sets	1	1.80	84	0.74
Phase 1 - Building Construction North	Cranes	1	8.00	231	0.29
Phase 1 - Building Construction North	Forklifts	3	6.00	89	0.20
Phase 1 - Building Construction North	Tractors/Loaders/Backhoes	2	1.80	97	0.37
Phase 1 - Building Construction North	Welders	3	0.90	46	0.45
Phase 1 - Site	Pavers	2	0.50	130	0.42
Phase 1 - Site	Paving Equipment	2	0.50	132	0.36
Phase 1 - Site	Rollers	2	0.50	80	0.38
Phase 1 - Site	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Phase 2 - Building Construction South	Cranes	1	8.00	231	0.29
Phase 2 - Building Construction South	Forklifts	3	6.00	89	0.20
Phase 2 - Building Construction South	Tractors/Loaders/Backhoes	2	1.60	97	0.37
Phase 2 - Building Construction South	Welders	3	0.80	46	0.45
Phase 2 - Site	Pavers	2	0.50	130	0.42
Phase 2 - Site	Paving Equipment	2	0.50	132	0.36
Phase 2 - Site	Rollers	2	0.50	80	0.38
Phase 2 - Site	Tractors/Loaders/Backhoes	2	3.00	97	0.37

21-197 803-851 Old County Road - San Mateo County, Annual

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

Architechural Coating	Air Compressors		0	0.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Below Grade Garage Excavation and Grading	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Below Grade Foundations	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Garage Concrete	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 - Building Construction North	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 - Site	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Building Construction South	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Site	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architechural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					

21-197 803-851 Old County Road - San Mateo County, Annual

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

Fugitive Dust					0.0396	0.0000	0.0396	5.9900e-003	0.0000	5.9900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.0976	0.1160	2.0000e-004		4.6800e-003	4.6800e-003		4.3100e-003	4.3100e-003	0.0000	17.4268	17.4268	5.6200e-003	0.0000	17.5672
Total	**0.0103**	**0.0976**	**0.1160**	**2.0000e-004**	**0.0396**	**4.6800e-003**	**0.0443**	**5.9900e-003**	**4.3100e-003**	**0.0103**	**0.0000**	**17.4268**	**17.4268**	**5.6200e-003**	**0.0000**	**17.5672**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

Fugitive Dust					0.0178	0.0000	0.0178	2.7000e-003	0.0000	2.7000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6200e-003	0.0798	0.1407	2.0000e-004		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	17.4267	17.4267	5.6200e-003	0.0000	17.5672
Total	**2.6200e-003**	**0.0798**	**0.1407**	**2.0000e-004**	**0.0178**	**3.2000e-004**	**0.0181**	**2.7000e-003**	**3.2000e-004**	**3.0200e-003**	**0.0000**	**17.4267**	**17.4267**	**5.6200e-003**	**0.0000**	**17.5672**

Mitigated Construction Off-Site

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

3.3 Below Grade Garage Excavation and 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					

21-197 803-851 Old County Road - San Mateo County, Annual

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

Fugitive Dust					0.0270	0.0000	0.0270	0.0108	0.0000	0.0108	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0219	0.2086	0.2976	4.8000e-004		0.0101	0.0101		9.2900e-003	9.2900e-003	0.0000	41.9319	41.9319	0.0136	0.0000	42.2710
Total	**0.0219**	**0.2086**	**0.2976**	**4.8000e-004**	**0.0270**	**0.0101**	**0.0371**	**0.0108**	**9.2900e-003**	**0.0201**	**0.0000**	**41.9319**	**41.9319**	**0.0136**	**0.0000**	**42.2710**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

Fugitive Dust					0.0121	0.0000	0.0121	4.8500e-003	0.0000	4.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0400e-003	0.2023	0.3518	4.8000e-004		7.8000e-004	7.8000e-004		7.8000e-004	7.8000e-004	0.0000	41.9319	41.9319	0.0136	0.0000	42.2709
Total	**7.0400e-003**	**0.2023**	**0.3518**	**4.8000e-004**	**0.0121**	**7.8000e-004**	**0.0129**	**4.8500e-003**	**7.8000e-004**	**5.6300e-003**	**0.0000**	**41.9319**	**41.9319**	**0.0136**	**0.0000**	**42.2709**

Mitigated Construction Off-Site

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

3.4 Below Grade Foundations - 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					

21-197 803-851 Old County Road - 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
Off-Road	7.1200e-003	0.0654	0.1094	1.7000e-004		3.2700e-003	3.2700e-003		3.0100e-003	3.0100e-003	0.0000	14.7562	14.7562	4.7700e-003	0.0000	14.8755
Total	**7.1200e-003**	**0.0654**	**0.1094**	**1.7000e-004**		**3.2700e-003**	**3.2700e-003**		**3.0100e-003**	**3.0100e-003**	**0.0000**	**14.7562**	**14.7562**	**4.7700e-003**	**0.0000**	**14.8755**

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.4600e-003	0.0739	0.1272	1.7000e-004		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	14.7561	14.7561	4.7700e-003	0.0000	14.8754

21-197 803-851 Old County Road - San Mateo County, Annual

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

Total	**2.4600e-003**	**0.0739**	**0.1272**	**1.7000e-004**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**14.7561**	**14.7561**	**4.7700e-003**	**0.0000**	**14.8754**

Mitigated Construction Off-Site

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

3.5 Garage Concrete - 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	0.0306	0.3139	0.2312	4.6000e-004		0.0158	0.0158		0.0147	0.0147	0.0000	40.7286	40.7286	0.0117	0.0000	41.0198
Total	**0.0306**	**0.3139**	**0.2312**	**4.6000e-004**		**0.0158**	**0.0158**		**0.0147**	**0.0147**	**0.0000**	**40.7286**	**40.7286**	**0.0117**	**0.0000**	**41.0198**

21-197 803-851 Old County Road - San Mateo County, Annual

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

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.3800e-003	0.0658	0.1137	1.5000e-004		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	13.1438	13.1438	4.2500e-003	0.0000	13.2500
Total	**3.3800e-003**	**0.0658**	**0.1137**	**1.5000e-004**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**13.1438**	**13.1438**	**4.2500e-003**	**0.0000**	**13.2500**

21-197 803-851 Old County Road - San Mateo County, Annual

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

Mitigated Construction Off-Site

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

3.6 Phase 1 - Building Construction North - 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	0.0183	0.1795	0.1396	2.6000e-004		9.0400e-003	9.0400e-003		8.3600e-003	8.3600e-003	0.0000	22.8992	22.8992	7.1100e-003	0.0000	23.0769
Total	**0.0183**	**0.1795**	**0.1396**	**2.6000e-004**		**9.0400e-003**	**9.0400e-003**		**8.3600e-003**	**8.3600e-003**	**0.0000**	**22.8992**	**22.8992**	**7.1100e-003**	**0.0000**	**23.0769**

Unmitigated Construction Off-Site

21-197 803-851 Old County Road - 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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8500e-003	0.0617	0.0960	1.3000e-004		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	11.2391	11.2391	3.3400e-003	0.0000	11.3225
Total	**2.8500e-003**	**0.0617**	**0.0960**	**1.3000e-004**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**11.2391**	**11.2391**	**3.3400e-003**	**0.0000**	**11.3225**

Mitigated Construction Off-Site

21-197 803-851 Old County Road - 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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Phase 1 - Building Construction North - 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	0.0493	0.4787	0.4007	7.7000e-004		0.0232	0.0232		0.0214	0.0214	0.0000	66.7150	66.7150	0.0207	0.0000	67.2316
Total	**0.0493**	**0.4787**	**0.4007**	**7.7000e-004**		**0.0232**	**0.0232**		**0.0214**	**0.0214**	**0.0000**	**66.7150**	**66.7150**	**0.0207**	**0.0000**	**67.2316**

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

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3000e-003	0.1797	0.2796	3.8000e-004		1.5900e-003	1.5900e-003		1.5900e-003	1.5900e-003	0.0000	32.7491	32.7491	9.6800e-003	0.0000	32.9911
Total	**8.3000e-003**	**0.1797**	**0.2796**	**3.8000e-004**		**1.5900e-003**	**1.5900e-003**		**1.5900e-003**	**1.5900e-003**	**0.0000**	**32.7491**	**32.7491**	**9.6800e-003**	**0.0000**	**32.9911**

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					

21-197 803-851 Old County Road - San Mateo County, Annual

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Phase 1 - Site - 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	7.1200e-003	0.0716	0.1034	1.5000e-004		3.5500e-003	3.5500e-003		3.2700e-003	3.2700e-003	0.0000	13.2143	13.2143	4.2700e-003	0.0000	13.3211
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1200e-003**	**0.0716**	**0.1034**	**1.5000e-004**		**3.5500e-003**	**3.5500e-003**		**3.2700e-003**	**3.2700e-003**	**0.0000**	**13.2143**	**13.2143**	**4.2700e-003**	**0.0000**	**13.3211**

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					

21-197 803-851 Old County Road - San Mateo County, Annual

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.9200e-003	0.0657	0.1135	1.5000e-004		2.5000e-004	2.5000e-004		2.5000e-004	2.5000e-004	0.0000	13.2143	13.2143	4.2700e-003	0.0000	13.3211
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.9200e-003**	**0.0657**	**0.1135**	**1.5000e-004**		**2.5000e-004**	**2.5000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**13.2143**	**13.2143**	**4.2700e-003**	**0.0000**	**13.3211**

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					

21-197 803-851 Old County Road - San Mateo County, Annual

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.8 Phase 2 - Building Construction South - 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	3.9500e-003	0.0386	0.0319	6.0000e-005		1.8700e-003	1.8700e-003		1.7300e-003	1.7300e-003	0.0000	5.3625	5.3625	1.6700e-003	0.0000	5.4042
Total	**3.9500e-003**	**0.0386**	**0.0319**	**6.0000e-005**		**1.8700e-003**	**1.8700e-003**		**1.7300e-003**	**1.7300e-003**	**0.0000**	**5.3625**	**5.3625**	**1.6700e-003**	**0.0000**	**5.4042**

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5000e-004	0.0140	0.0220	3.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	2.5743	2.5743	7.7000e-004	0.0000	2.5935
Total	**6.5000e-004**	**0.0140**	**0.0220**	**3.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**2.5743**	**2.5743**	**7.7000e-004**	**0.0000**	**2.5935**

Mitigated Construction Off-Site

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

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

3.8 Phase 2 - Building Construction South - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0635	0.6129	0.5416	1.0600e-003		0.0285	0.0285		0.0263	0.0263	0.0000	92.1438	92.1438	0.0286	0.0000	92.8593
Total	**0.0635**	**0.6129**	**0.5416**	**1.0600e-003**		**0.0285**	**0.0285**		**0.0263**	**0.0263**	**0.0000**	**92.1438**	**92.1438**	**0.0286**	**0.0000**	**92.8593**

Unmitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0112	0.2411	0.3779	5.2000e-004		2.0500e-003	2.0500e-003		2.0500e-003	2.0500e-003	0.0000	44.2378	44.2378	0.0131	0.0000	44.5659
Total	**0.0112**	**0.2411**	**0.3779**	**5.2000e-004**		**2.0500e-003**	**2.0500e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**44.2378**	**44.2378**	**0.0131**	**0.0000**	**44.5659**

Mitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

3.9 Phase 2 - Site - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4300e-003	0.0538	0.0829	1.2000e-004		2.5300e-003	2.5300e-003		2.3300e-003	2.3300e-003	0.0000	10.5755	10.5755	3.4200e-003	0.0000	10.6610
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.4300e-003**	**0.0538**	**0.0829**	**1.2000e-004**		**2.5300e-003**	**2.5300e-003**		**2.3300e-003**	**2.3300e-003**	**0.0000**	**10.5755**	**10.5755**	**3.4200e-003**	**0.0000**	**10.6610**

Unmitigated Construction Off-Site

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

Date: 3/4/2022 11:37 AM

21-197 803-851 Old County Road - San Mateo County, Annual

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

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	2.3400e-003	0.0526	0.0908	1.2000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	10.5755	10.5755	3.4200e-003	0.0000	10.6610
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3400e-003**	**0.0526**	**0.0908**	**1.2000e-004**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**10.5755**	**10.5755**	**3.4200e-003**	**0.0000**	**10.6610**

Mitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

3.9 Phase 2 - Site - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2500e-003	0.0123	0.0207	3.0000e-005		5.3000e-004	5.3000e-004		4.9000e-004	4.9000e-004	0.0000	2.6451	2.6451	8.6000e-004	0.0000	2.6665
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2500e-003**	**0.0123**	**0.0207**	**3.0000e-005**		**5.3000e-004**	**5.3000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**2.6451**	**2.6451**	**8.6000e-004**	**0.0000**	**2.6665**

Unmitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

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	5.8000e-004	0.0132	0.0227	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	2.6451	2.6451	8.6000e-004	0.0000	2.6665
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.8000e-004**	**0.0132**	**0.0227**	**3.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**2.6451**	**2.6451**	**8.6000e-004**	**0.0000**	**2.6665**

Mitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

3.10 Architechural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8339**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

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	1.8339					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8339**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9553	1.0001	7.9634	0.0265	2.3912	0.0159	2.4072	0.5968	0.0149	0.6117	0.0000	2,459.1164	2,459.1164	0.0988	0.1054	2,493.0057
Unmitigated	0.9553	1.0001	7.9634	0.0265	2.3912	0.0159	2.4072	0.5968	0.0149	0.6117	0.0000	2,459.1164	2,459.1164	0.0988	0.1054	2,493.0057

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Research & Development	3,764.21	635.30	370.31	7,098,639	7,098,639
Total	3,764.21	635.30	370.31	7,098,639	7,098,639

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

21-197 803-851 Old County Road - San Mateo County, Annual

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.430608	0.039010	0.288195	0.168896	0.033969	0.007587	0.012483	0.007199	0.004815	0.001838	0.004320	0.000420	0.000661
Research & Development	0.430608	0.039010	0.288195	0.168896	0.033969	0.007587	0.012483	0.007199	0.004815	0.001838	0.004320	0.000420	0.000661

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

21-197 803-851 Old County Road - San Mateo County, Annual

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

	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					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e

21-197 803-851 Old County Road - 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	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.62765e+006	0.0000	0.0000	0.0000	0.0000
Research & Development	2.52422e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.62765e+006	0.0000	0.0000	0.0000	0.0000
Research & Development	2.52422e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

21-197 803-851 Old County Road - 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	1.5306	9.0000e-005	9.9700e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Unmitigated	1.5306	9.0000e-005	9.9700e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207

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	0.1835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.2000e-004	9.0000e-005	9.9700e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**1.5306**	**9.0000e-005**	**9.9700e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.2000e-004	9.0000e-005	9.9700e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**1.5306**	**9.0000e-005**	**9.9700e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	59.1349	0.2035	0.1286	102.5459
Unmitigated	59.1349	0.2035	0.1286	102.5459

7.2 Water by Land Use

Unmitigated

21-197 803-851 Old County Road - San Mateo County, Annual

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

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	167.142 / 0	59.1349	0.2035	0.1286	102.5459
Total		**59.1349**	**0.2035**	**0.1286**	**102.5459**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	167.142 / 0	59.1349	0.2035	0.1286	102.5459
Total		**59.1349**	**0.2035**	**0.1286**	**102.5459**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

21-197 803-851 Old County Road - 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
	MT/yr			
Mitigated	5.2433	0.3099	0.0000	12.9900
Unmitigated	5.2433	0.3099	0.0000	12.9900

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Research & Development	25.83	5.2433	0.3099	0.0000	12.9900
Total		**5.2433**	**0.3099**	**0.0000**	**12.9900**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

21-197 803-851 Old County Road - 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	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Research & Development	25.83	5.2433	0.3099	0.0000	12.9900
Total		**5.2433**	**0.3099**	**0.0000**	**12.9900**

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
Emergency Generator	1	0	50	600	0.73	Diesel
Emergency Generator	1	0	50	670	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

21-197 803-851 Old County Road - 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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel	0.0521	0.1456	0.1329	2.5000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	24.1806	24.1806	3.3900e-003	0.0000	24.2654
Total	**0.0521**	**0.1456**	**0.1329**	**2.5000e-004**		**7.6600e-003**	**7.6600e-003**		**7.6600e-003**	**7.6600e-003**	**0.0000**	**24.1806**	**24.1806**	**3.3900e-003**	**0.0000**	**24.2654**

11.0 Vegetation

21-197 803-851 Old County Road - San Mateo County, Annual

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

21-197 803-851 Old County Road
San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	339.73	1000sqft	3.41	339,733.00	0
Enclosed Parking with Elevator	748.00	Space	0.00	299,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2030
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Assume peninsula

Land Use - Applicant provided square footage, and lot acreage. Parking spaces from plot plan.

Construction Phase - Operation Only

Off-road Equipment - Construction equipment info provided by applicant.

Off-road Equipment - Operation Only

Trips and VMT - All trips entered into EMFAC2021

Demolition -

Grading -

Vehicle Trips - 11.08 ITE 11th Gen rate for R&D.

Vehicle Emission Factors - Emission factors from EMFAC2021

Energy Use - No Natural gas usage

21-197 803-851 Old County Road - San Mateo County, Annual

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

Water And Wastewater - 100% aerobic

Construction Off-road Equipment Mitigation - All equipment t4i, BMP

Fleet Mix - Fleet Mix from EMFAC2021

Stationary Sources - Emergency Generators and Fire Pumps - Generator information supplied by applicant as 450kW and 500kW. Engine sizes assumed.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	169867	169967
tblAreaCoating	Area_Nonresidential_Interior	509600	509900
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	18.00	0.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24NG	17.67	0.00
tblFleetMix	HHD	1.7910e-003	7.3150e-003
tblFleetMix	HHD	1.7910e-003	7.3150e-003
tblFleetMix	LDA	0.43	0.39
tblFleetMix	LDA	0.43	0.39
tblFleetMix	LDT1	0.08	0.04
tblFleetMix	LDT1	0.08	0.04
tblFleetMix	LDT2	0.25	0.31
tblFleetMix	LDT2	0.25	0.31
tblFleetMix	LHD1	0.03	0.04

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblFleetMix	LHD1	0.03	0.04
tblFleetMix	LHD2	7.1360e-003	8.4120e-003
tblFleetMix	LHD2	7.1360e-003	8.4120e-003
tblFleetMix	MCY	0.03	4.4930e-003
tblFleetMix	MCY	0.03	4.4930e-003
tblFleetMix	MDV	0.16	0.18
tblFleetMix	MDV	0.16	0.18
tblFleetMix	MH	2.9170e-003	7.0600e-004
tblFleetMix	MH	2.9170e-003	7.0600e-004
tblFleetMix	MHD	0.01	0.01
tblFleetMix	MHD	0.01	0.01
tblFleetMix	OBUS	1.3500e-003	4.7190e-003
tblFleetMix	OBUS	1.3500e-003	4.7190e-003
tblFleetMix	SBUS	4.2100e-004	4.4200e-004
tblFleetMix	SBUS	4.2100e-004	4.4200e-004
tblFleetMix	UBUS	4.9600e-004	1.8230e-003
tblFleetMix	UBUS	4.9600e-004	1.8230e-003
tblLandUse	LandUseSquareFeet	339,730.00	339,733.00
tblLandUse	LotAcreage	7.80	3.41
tblLandUse	LotAcreage	6.73	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.50
tblOffRoadEquipment	UsageHours	6.00	0.50
tblOffRoadEquipment	UsageHours	8.00	3.00

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblSolidWaste	SolidWasteGenerationRate	25.82	25.83
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	600.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	670.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleEF	HHD	0.04	0.23
tblVehicleEF	HHD	0.19	0.18
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	5.46	4.57
tblVehicleEF	HHD	1.06	1.44
tblVehicleEF	HHD	0.04	0.02
tblVehicleEF	HHD	860.08	692.39
tblVehicleEF	HHD	1,405.74	1,514.61
tblVehicleEF	HHD	0.35	0.20
tblVehicleEF	HHD	0.14	0.11
tblVehicleEF	HHD	0.23	0.24
tblVehicleEF	HHD	3.0000e-006	0.00
tblVehicleEF	HHD	5.01	3.57
tblVehicleEF	HHD	2.73	1.87
tblVehicleEF	HHD	2.40	2.65
tblVehicleEF	HHD	2.7380e-003	2.0820e-003
tblVehicleEF	HHD	0.06	0.09
tblVehicleEF	HHD	0.04	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	2.6200e-003	1.9850e-003
tblVehicleEF	HHD	0.03	0.03

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	HHD	8.7570e-003	8.6350e-003
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	6.0000e-006	2.3600e-004
tblVehicleEF	HHD	3.2200e-004	6.5000e-005
tblVehicleEF	HHD	0.36	0.27
tblVehicleEF	HHD	5.0000e-006	0.00
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	1.5200e-004	3.9100e-004
tblVehicleEF	HHD	1.4000e-005	2.0000e-006
tblVehicleEF	HHD	7.5950e-003	5.6170e-003
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	3.0000e-006	2.0000e-006
tblVehicleEF	HHD	6.0000e-006	2.3600e-004
tblVehicleEF	HHD	3.2200e-004	6.5000e-005
tblVehicleEF	HHD	0.43	0.53
tblVehicleEF	HHD	5.0000e-006	0.00
tblVehicleEF	HHD	0.23	0.21
tblVehicleEF	HHD	1.5200e-004	3.9100e-004
tblVehicleEF	HHD	1.6000e-005	2.0000e-006
tblVehicleEF	LDA	8.5200e-004	1.0910e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.38	0.43
tblVehicleEF	LDA	1.70	2.12
tblVehicleEF	LDA	197.85	218.14
tblVehicleEF	LDA	41.93	56.38
tblVehicleEF	LDA	2.9620e-003	2.8890e-003
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.02	0.02

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LDA	0.12	0.18
tblVehicleEF	LDA	0.04	6.3460e-003
tblVehicleEF	LDA	8.6000e-004	8.0000e-004
tblVehicleEF	LDA	1.2290e-003	1.4710e-003
tblVehicleEF	LDA	0.02	2.2210e-003
tblVehicleEF	LDA	7.9200e-004	7.3600e-004
tblVehicleEF	LDA	1.1300e-003	1.3530e-003
tblVehicleEF	LDA	0.02	0.21
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.02	0.00
tblVehicleEF	LDA	2.9250e-003	3.8520e-003
tblVehicleEF	LDA	0.03	0.16
tblVehicleEF	LDA	0.12	0.20
tblVehicleEF	LDA	1.9570e-003	2.1560e-003
tblVehicleEF	LDA	4.1500e-004	5.5700e-004
tblVehicleEF	LDA	0.02	0.21
tblVehicleEF	LDA	0.06	0.06
tblVehicleEF	LDA	0.02	0.00
tblVehicleEF	LDA	4.2480e-003	5.6170e-003
tblVehicleEF	LDA	0.03	0.16
tblVehicleEF	LDA	0.13	0.22
tblVehicleEF	LDT1	1.1990e-003	2.2150e-003
tblVehicleEF	LDT1	0.03	0.06
tblVehicleEF	LDT1	0.44	0.66
tblVehicleEF	LDT1	1.81	2.84
tblVehicleEF	LDT1	236.05	285.53
tblVehicleEF	LDT1	50.08	72.58
tblVehicleEF	LDT1	3.1790e-003	4.5000e-003
tblVehicleEF	LDT1	0.02	0.03

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LDT1	0.03	0.05
tblVehicleEF	LDT1	0.14	0.23
tblVehicleEF	LDT1	0.04	7.9630e-003
tblVehicleEF	LDT1	9.9000e-004	1.0380e-003
tblVehicleEF	LDT1	1.3910e-003	1.7650e-003
tblVehicleEF	LDT1	0.02	2.7870e-003
tblVehicleEF	LDT1	9.1100e-004	9.5500e-004
tblVehicleEF	LDT1	1.2790e-003	1.6230e-003
tblVehicleEF	LDT1	0.03	0.31
tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.03	0.00
tblVehicleEF	LDT1	4.4220e-003	9.0470e-003
tblVehicleEF	LDT1	0.05	0.24
tblVehicleEF	LDT1	0.13	0.27
tblVehicleEF	LDT1	2.3360e-003	2.8230e-003
tblVehicleEF	LDT1	4.9600e-004	7.1700e-004
tblVehicleEF	LDT1	0.03	0.31
tblVehicleEF	LDT1	0.07	0.08
tblVehicleEF	LDT1	0.03	0.00
tblVehicleEF	LDT1	6.4520e-003	0.01
tblVehicleEF	LDT1	0.05	0.24
tblVehicleEF	LDT1	0.14	0.29
tblVehicleEF	LDT2	1.3110e-003	1.4510e-003
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.47	0.52
tblVehicleEF	LDT2	2.22	2.46
tblVehicleEF	LDT2	241.10	296.13
tblVehicleEF	LDT2	51.42	74.14
tblVehicleEF	LDT2	3.4280e-003	3.6740e-003

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.03	0.03
tblVehicleEF	LDT2	0.15	0.21
tblVehicleEF	LDT2	0.04	7.7670e-003
tblVehicleEF	LDT2	9.8200e-004	8.8300e-004
tblVehicleEF	LDT2	1.3140e-003	1.4990e-003
tblVehicleEF	LDT2	0.02	2.7180e-003
tblVehicleEF	LDT2	9.0400e-004	8.1200e-004
tblVehicleEF	LDT2	1.2080e-003	1.3780e-003
tblVehicleEF	LDT2	0.03	0.16
tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.03	0.00
tblVehicleEF	LDT2	4.7820e-003	5.1450e-003
tblVehicleEF	LDT2	0.05	0.12
tblVehicleEF	LDT2	0.16	0.22
tblVehicleEF	LDT2	2.3850e-003	2.9270e-003
tblVehicleEF	LDT2	5.0900e-004	7.3300e-004
tblVehicleEF	LDT2	0.03	0.16
tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.03	0.00
tblVehicleEF	LDT2	6.9400e-003	7.4940e-003
tblVehicleEF	LDT2	0.05	0.12
tblVehicleEF	LDT2	0.17	0.24
tblVehicleEF	LHD1	3.9860e-003	4.1000e-003
tblVehicleEF	LHD1	4.4850e-003	2.8900e-003
tblVehicleEF	LHD1	7.3910e-003	0.01
tblVehicleEF	LHD1	0.18	0.18
tblVehicleEF	LHD1	0.40	0.47
tblVehicleEF	LHD1	0.86	2.16

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LHD1	8.08	7.48
tblVehicleEF	LHD1	689.79	647.78
tblVehicleEF	LHD1	9.94	16.36
tblVehicleEF	LHD1	7.0800e-004	5.3200e-004
tblVehicleEF	LHD1	0.04	0.03
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	0.04	0.03
tblVehicleEF	LHD1	0.18	0.18
tblVehicleEF	LHD1	0.20	0.30
tblVehicleEF	LHD1	9.1600e-004	6.1700e-004
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	9.8940e-003	9.2640e-003
tblVehicleEF	LHD1	5.8960e-003	6.6480e-003
tblVehicleEF	LHD1	2.0100e-004	1.0400e-004
tblVehicleEF	LHD1	8.7600e-004	5.9000e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4740e-003	2.3160e-003
tblVehicleEF	LHD1	5.5970e-003	6.3310e-003
tblVehicleEF	LHD1	1.8500e-004	9.6000e-005
tblVehicleEF	LHD1	8.5500e-004	0.06
tblVehicleEF	LHD1	0.04	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.9000e-004	0.00
tblVehicleEF	LHD1	0.07	0.04
tblVehicleEF	LHD1	0.14	0.08
tblVehicleEF	LHD1	0.03	0.07
tblVehicleEF	LHD1	7.8000e-005	7.3000e-005
tblVehicleEF	LHD1	6.7280e-003	6.3250e-003
tblVehicleEF	LHD1	9.8000e-005	1.6200e-004

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LHD1	8.5500e-004	0.06
tblVehicleEF	LHD1	0.04	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	5.9000e-004	0.00
tblVehicleEF	LHD1	0.08	0.04
tblVehicleEF	LHD1	0.14	0.08
tblVehicleEF	LHD1	0.04	0.07
tblVehicleEF	LHD2	2.4420e-003	2.3110e-003
tblVehicleEF	LHD2	4.9160e-003	3.5820e-003
tblVehicleEF	LHD2	4.1310e-003	7.5520e-003
tblVehicleEF	LHD2	0.13	0.14
tblVehicleEF	LHD2	0.44	0.32
tblVehicleEF	LHD2	0.49	1.19
tblVehicleEF	LHD2	12.62	12.88
tblVehicleEF	LHD2	670.16	684.09
tblVehicleEF	LHD2	6.49	8.64
tblVehicleEF	LHD2	1.6020e-003	1.5980e-003
tblVehicleEF	LHD2	0.06	0.07
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.06	0.06
tblVehicleEF	LHD2	0.21	0.28
tblVehicleEF	LHD2	0.12	0.16
tblVehicleEF	LHD2	1.4740e-003	1.4290e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	1.0700e-004	5.0000e-005
tblVehicleEF	LHD2	1.4100e-003	1.3670e-003
tblVehicleEF	LHD2	0.04	0.03

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	LHD2	2.7060e-003	2.6170e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	9.9000e-005	4.6000e-005
tblVehicleEF	LHD2	4.2300e-004	0.03
tblVehicleEF	LHD2	0.02	8.3390e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	3.0400e-004	0.00
tblVehicleEF	LHD2	0.09	0.07
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.02	0.04
tblVehicleEF	LHD2	1.2100e-004	1.2300e-004
tblVehicleEF	LHD2	6.4670e-003	6.5820e-003
tblVehicleEF	LHD2	6.4000e-005	8.5000e-005
tblVehicleEF	LHD2	4.2300e-004	0.03
tblVehicleEF	LHD2	0.02	8.3390e-003
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	3.0400e-004	0.00
tblVehicleEF	LHD2	0.11	0.08
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.02	0.04
tblVehicleEF	MCY	0.32	0.13
tblVehicleEF	MCY	0.25	0.14
tblVehicleEF	MCY	17.76	9.71
tblVehicleEF	MCY	9.39	7.58
tblVehicleEF	MCY	212.58	185.26
tblVehicleEF	MCY	58.78	39.68
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	5.5840e-003
tblVehicleEF	MCY	1.14	0.47

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MCY	0.27	0.09
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	2.2180e-003	2.0690e-003
tblVehicleEF	MCY	3.0130e-003	3.6390e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	2.0680e-003	1.9300e-003
tblVehicleEF	MCY	2.8140e-003	3.4020e-003
tblVehicleEF	MCY	0.61	2.69
tblVehicleEF	MCY	0.49	3.54
tblVehicleEF	MCY	0.36	0.00
tblVehicleEF	MCY	2.13	0.79
tblVehicleEF	MCY	0.39	3.67
tblVehicleEF	MCY	1.89	1.03
tblVehicleEF	MCY	2.1040e-003	1.8310e-003
tblVehicleEF	MCY	5.8200e-004	3.9200e-004
tblVehicleEF	MCY	0.61	0.07
tblVehicleEF	MCY	0.49	3.54
tblVehicleEF	MCY	0.36	0.00
tblVehicleEF	MCY	2.68	0.98
tblVehicleEF	MCY	0.39	3.67
tblVehicleEF	MCY	2.06	1.12
tblVehicleEF	MDV	1.2400e-003	1.4660e-003
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.45	0.52
tblVehicleEF	MDV	2.21	2.46
tblVehicleEF	MDV	289.25	352.66
tblVehicleEF	MDV	60.44	87.77
tblVehicleEF	MDV	4.5060e-003	4.1700e-003
tblVehicleEF	MDV	0.02	0.03

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MDV	0.02	0.03
tblVehicleEF	MDV	0.15	0.22
tblVehicleEF	MDV	0.04	7.7870e-003
tblVehicleEF	MDV	9.5700e-004	8.5800e-004
tblVehicleEF	MDV	1.2840e-003	1.4690e-003
tblVehicleEF	MDV	0.02	2.7250e-003
tblVehicleEF	MDV	8.8200e-004	7.9000e-004
tblVehicleEF	MDV	1.1810e-003	1.3510e-003
tblVehicleEF	MDV	0.03	0.17
tblVehicleEF	MDV	0.07	0.05
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	4.5430e-003	5.3030e-003
tblVehicleEF	MDV	0.05	0.13
tblVehicleEF	MDV	0.16	0.24
tblVehicleEF	MDV	2.8580e-003	3.4850e-003
tblVehicleEF	MDV	5.9800e-004	8.6800e-004
tblVehicleEF	MDV	0.03	0.17
tblVehicleEF	MDV	0.07	0.05
tblVehicleEF	MDV	0.04	0.00
tblVehicleEF	MDV	6.5690e-003	7.7170e-003
tblVehicleEF	MDV	0.05	0.13
tblVehicleEF	MDV	0.18	0.26
tblVehicleEF	MH	4.0670e-003	4.8170e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.22	0.26
tblVehicleEF	MH	1.59	1.85
tblVehicleEF	MH	1,315.39	1,657.15
tblVehicleEF	MH	15.06	19.91
tblVehicleEF	MH	0.05	0.07

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	0.84	1.00
tblVehicleEF	MH	0.22	0.25
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	9.1290e-003	0.01
tblVehicleEF	MH	2.2300e-004	2.4800e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2890e-003	3.3360e-003
tblVehicleEF	MH	8.6970e-003	0.01
tblVehicleEF	MH	2.0500e-004	2.2800e-004
tblVehicleEF	MH	0.16	10.82
tblVehicleEF	MH	0.01	2.82
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.03	0.04
tblVehicleEF	MH	2.9870e-003	0.07
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	1.4900e-004	1.9700e-004
tblVehicleEF	MH	0.16	10.82
tblVehicleEF	MH	0.01	2.82
tblVehicleEF	MH	0.08	0.00
tblVehicleEF	MH	0.04	0.05
tblVehicleEF	MH	2.9870e-003	0.07
tblVehicleEF	MH	0.08	0.09
tblVehicleEF	MHD	3.9010e-003	0.02
tblVehicleEF	MHD	9.3700e-004	9.6240e-003
tblVehicleEF	MHD	8.5280e-003	9.1350e-003
tblVehicleEF	MHD	0.38	0.63

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MHD	0.14	0.16
tblVehicleEF	MHD	0.87	0.98
tblVehicleEF	MHD	55.53	130.08
tblVehicleEF	MHD	958.82	1,103.52
tblVehicleEF	MHD	8.66	9.48
tblVehicleEF	MHD	7.8550e-003	0.02
tblVehicleEF	MHD	0.12	0.13
tblVehicleEF	MHD	8.0480e-003	6.8930e-003
tblVehicleEF	MHD	0.29	0.66
tblVehicleEF	MHD	1.31	0.56
tblVehicleEF	MHD	1.67	1.12
tblVehicleEF	MHD	1.1600e-004	6.3600e-004
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	6.3200e-003	5.3910e-003
tblVehicleEF	MHD	1.1300e-004	1.1800e-004
tblVehicleEF	MHD	1.1100e-004	6.0800e-004
tblVehicleEF	MHD	0.06	0.02
tblVehicleEF	MHD	6.0400e-003	5.1470e-003
tblVehicleEF	MHD	1.0400e-004	1.0900e-004
tblVehicleEF	MHD	2.1500e-004	0.02
tblVehicleEF	MHD	0.01	3.9100e-003
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	1.5500e-004	0.00
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	5.2700e-004	1.1950e-003
tblVehicleEF	MHD	9.1510e-003	0.01
tblVehicleEF	MHD	8.6000e-005	9.4000e-005

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	MHD	2.1500e-004	0.02
tblVehicleEF	MHD	0.01	3.9100e-003
tblVehicleEF	MHD	0.02	0.04
tblVehicleEF	MHD	1.5500e-004	0.00
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.01	0.03
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	OBUS	6.7860e-003	6.9140e-003
tblVehicleEF	OBUS	1.7360e-003	0.01
tblVehicleEF	OBUS	0.01	8.2390e-003
tblVehicleEF	OBUS	0.67	0.50
tblVehicleEF	OBUS	0.22	0.16
tblVehicleEF	OBUS	1.34	0.83
tblVehicleEF	OBUS	104.99	88.87
tblVehicleEF	OBUS	1,195.47	1,192.98
tblVehicleEF	OBUS	11.93	7.62
tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.12	0.16
tblVehicleEF	OBUS	0.01	7.5270e-003
tblVehicleEF	OBUS	0.47	0.34
tblVehicleEF	OBUS	1.49	0.65
tblVehicleEF	OBUS	1.22	1.02
tblVehicleEF	OBUS	1.5600e-004	2.0700e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	8.0770e-003	7.6200e-003
tblVehicleEF	OBUS	1.4600e-004	8.4000e-005
tblVehicleEF	OBUS	1.4900e-004	1.9800e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	7.7140e-003	7.2850e-003

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	OBUS	1.3400e-004	7.7000e-005
tblVehicleEF	OBUS	6.9700e-004	0.03
tblVehicleEF	OBUS	0.01	6.5600e-003
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	3.8500e-004	0.00
tblVehicleEF	OBUS	0.01	0.02
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.07	0.04
tblVehicleEF	OBUS	9.9600e-004	8.3400e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.1800e-004	7.5000e-005
tblVehicleEF	OBUS	6.9700e-004	0.03
tblVehicleEF	OBUS	0.01	6.5600e-003
tblVehicleEF	OBUS	0.06	0.04
tblVehicleEF	OBUS	3.8500e-004	0.00
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	SBUS	0.16	0.11
tblVehicleEF	SBUS	5.7190e-003	0.07
tblVehicleEF	SBUS	0.01	8.9860e-003
tblVehicleEF	SBUS	5.81	2.80
tblVehicleEF	SBUS	0.52	0.91
tblVehicleEF	SBUS	2.02	1.22
tblVehicleEF	SBUS	372.76	200.53
tblVehicleEF	SBUS	883.04	857.53
tblVehicleEF	SBUS	11.09	6.59
tblVehicleEF	SBUS	0.04	0.02
tblVehicleEF	SBUS	0.08	0.09

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	SBUS	0.01	6.2860e-003
tblVehicleEF	SBUS	2.28	1.04
tblVehicleEF	SBUS	2.37	1.45
tblVehicleEF	SBUS	0.99	0.50
tblVehicleEF	SBUS	1.7990e-003	7.5800e-004
tblVehicleEF	SBUS	0.74	0.04
tblVehicleEF	SBUS	9.6950e-003	9.8790e-003
tblVehicleEF	SBUS	0.01	7.0920e-003
tblVehicleEF	SBUS	1.8900e-004	9.4000e-005
tblVehicleEF	SBUS	1.7210e-003	7.2300e-004
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.4240e-003	2.4700e-003
tblVehicleEF	SBUS	0.01	6.7620e-003
tblVehicleEF	SBUS	1.7400e-004	8.6000e-005
tblVehicleEF	SBUS	1.0240e-003	0.05
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.71	0.33
tblVehicleEF	SBUS	5.6900e-004	0.00
tblVehicleEF	SBUS	0.06	0.05
tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.08	0.05
tblVehicleEF	SBUS	3.5870e-003	1.8280e-003
tblVehicleEF	SBUS	8.5360e-003	8.0270e-003
tblVehicleEF	SBUS	1.1000e-004	6.5000e-005
tblVehicleEF	SBUS	1.0240e-003	0.05
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	1.03	0.51
tblVehicleEF	SBUS	5.6900e-004	0.00
tblVehicleEF	SBUS	0.07	0.13

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	SBUS	0.02	0.04
tblVehicleEF	SBUS	0.09	0.06
tblVehicleEF	UBUS	1.75	0.64
tblVehicleEF	UBUS	8.0630e-003	4.5120e-003
tblVehicleEF	UBUS	13.25	7.38
tblVehicleEF	UBUS	0.82	0.83
tblVehicleEF	UBUS	1,616.16	954.90
tblVehicleEF	UBUS	7.49	5.22
tblVehicleEF	UBUS	0.27	0.14
tblVehicleEF	UBUS	5.7250e-003	6.8380e-003
tblVehicleEF	UBUS	0.67	0.21
tblVehicleEF	UBUS	0.07	0.04
tblVehicleEF	UBUS	0.08	0.16
tblVehicleEF	UBUS	0.03	0.06
tblVehicleEF	UBUS	4.9300e-003	3.9500e-003
tblVehicleEF	UBUS	9.1000e-005	2.5000e-005
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	7.8010e-003	0.02
tblVehicleEF	UBUS	4.7140e-003	3.7730e-003
tblVehicleEF	UBUS	8.3000e-005	2.3000e-005
tblVehicleEF	UBUS	1.3500e-004	0.01
tblVehicleEF	UBUS	1.6730e-003	3.4250e-003
tblVehicleEF	UBUS	8.4000e-005	0.00
tblVehicleEF	UBUS	0.03	0.05
tblVehicleEF	UBUS	5.1800e-004	0.01
tblVehicleEF	UBUS	0.04	0.02
tblVehicleEF	UBUS	0.01	7.2300e-003
tblVehicleEF	UBUS	7.4000e-005	5.2000e-005
tblVehicleEF	UBUS	1.3500e-004	0.01

21-197 803-851 Old County Road - San Mateo County, Annual

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

tblVehicleEF	UBUS	1.6730e-003	3.4250e-003
tblVehicleEF	UBUS	8.4000e-005	0.00
tblVehicleEF	UBUS	1.79	0.69
tblVehicleEF	UBUS	5.1800e-004	0.01
tblVehicleEF	UBUS	0.04	0.02
tblVehicleTrips	ST_TR	1.90	1.87
tblVehicleTrips	SU_TR	1.11	1.09
tblVehicleTrips	WD_TR	11.26	11.08
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	IndoorWaterUseRate	167,043,184.68	167,141,523.47
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

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	1.5306	9.0000e-005	9.9500e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

21-197 803-851 Old County Road - San Mateo County, Annual

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

Mobile	0.7927	0.7951	6.8905	0.0250	2.3927	0.0127	2.4054	0.5973	0.0119	0.6092	0.0000	2,320.9358	2,320.9358	0.0828	0.0959	2,351.5873
Stationary	0.0521	0.1456	0.1329	2.5000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	24.1806	24.1806	3.3900e-003	0.0000	24.2654
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900
Water						0.0000	0.0000		0.0000	0.0000	59.1349	0.0000	59.1349	0.2035	0.1286	102.5459
Total	**2.3754**	**0.9408**	**7.0333**	**0.0253**	**2.3927**	**0.0204**	**2.4131**	**0.5973**	**0.0196**	**0.6169**	**64.3782**	**2,345.1359**	**2,409.5141**	**0.5997**	**0.2245**	**2,491.4092**

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	1.5306	9.0000e-005	9.9500e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.7927	0.7951	6.8905	0.0250	2.3927	0.0127	2.4054	0.5973	0.0119	0.6092	0.0000	2,320.9358	2,320.9358	0.0828	0.0959	2,351.5873
Stationary	0.0521	0.1456	0.1329	2.5000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	24.1806	24.1806	3.3900e-003	0.0000	24.2654
Waste						0.0000	0.0000		0.0000	0.0000	5.2433	0.0000	5.2433	0.3099	0.0000	12.9900
Water						0.0000	0.0000		0.0000	0.0000	59.1349	0.0000	59.1349	0.2035	0.1286	102.5459
Total	**2.3754**	**0.9408**	**7.0333**	**0.0253**	**2.3927**	**0.0204**	**2.4131**	**0.5973**	**0.0196**	**0.6169**	**64.3782**	**2,345.1359**	**2,409.5141**	**0.5997**	**0.2245**	**2,491.4092**

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

21-197 803-851 Old County Road - San Mateo County, Annual

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

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7927	0.7951	6.8905	0.0250	2.3927	0.0127	2.4054	0.5973	0.0119	0.6092	0.0000	2,320.9358	2,320.9358	0.0828	0.0959	2,351.5873
Unmitigated	0.7927	0.7951	6.8905	0.0250	2.3927	0.0127	2.4054	0.5973	0.0119	0.6092	0.0000	2,320.9358	2,320.9358	0.0828	0.0959	2,351.5873

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Research & Development	3,764.21	635.30	370.31	7,098,639	7,098,639
Total	3,764.21	635.30	370.31	7,098,639	7,098,639

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.392953	0.038140	0.309697	0.182164	0.036329	0.008412	0.012807	0.007315	0.004719	0.001823	0.004493	0.000442	0.000706

21-197 803-851 Old County Road - San Mateo County, Annual

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

Research & Development	0.392953	0.038140	0.309697	0.182164	0.036329	0.008412	0.012807	0.007315	0.004719	0.001823	0.004493	0.000442	0.000706

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.62765e+006	0.0000	0.0000	0.0000	0.0000

21-197 803-851 Old County Road - San Mateo County, Annual

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

Research & Development	2.52422e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	1.62765e+006	0.0000	0.0000	0.0000	0.0000
Research & Development	2.52422e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

21-197 803-851 Old County Road - 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
Mitigated	1.5306	9.0000e-005	9.9500e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Unmitigated	1.5306	9.0000e-005	9.9500e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207

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	0.1835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.1000e-004	9.0000e-005	9.9500e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**1.5306**	**9.0000e-005**	**9.9500e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

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	0.1835					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

21-197 803-851 Old County Road - San Mateo County, Annual

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

Consumer Products	1.3462					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.1000e-004	9.0000e-005	9.9500e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0194	0.0194	5.0000e-005	0.0000	0.0207
Total	**1.5306**	**9.0000e-005**	**9.9500e-003**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0194**	**0.0194**	**5.0000e-005**	**0.0000**	**0.0207**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	59.1349	0.2035	0.1286	102.5459
Unmitigated	59.1349	0.2035	0.1286	102.5459

7.2 Water by Land Use

Unmitigated

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

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

Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	167.142 / 0	59.1349	0.2035	0.1286	102.5459
Total		**59.1349**	**0.2035**	**0.1286**	**102.5459**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	167.142 / 0	59.1349	0.2035	0.1286	102.5459
Total		**59.1349**	**0.2035**	**0.1286**	**102.5459**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

21-197 803-851 Old County Road - San Mateo County, Annual

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

	MT/yr			
Mitigated	5.2433	0.3099	0.0000	12.9900
Unmitigated	5.2433	0.3099	0.0000	12.9900

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Research & Development	25.83	5.2433	0.3099	0.0000	12.9900
Total		**5.2433**	**0.3099**	**0.0000**	**12.9900**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000

21-197 803-851 Old County Road - San Mateo County, Annual

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

Research & Development	25.83	5.2433	0.3099	0.0000	12.9900
Total		**5.2433**	**0.3099**	**0.0000**	**12.9900**

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
Emergency Generator	1	0	50	600	0.73	Diesel
Emergency Generator	1	0	50	670	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/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
Equipment Type	tons/yr										MT/yr					

21-197 803-851 Old County Road - San Mateo County, Annual

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

Emergency Generator - Diesel (300 - 750 HP)	0.0521	0.1456	0.1329	2.5000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	24.1806	24.1806	3.3900e-003	0.0000	24.2654
Total	**0.0521**	**0.1456**	**0.1329**	**2.5000e-004**		**7.6600e-003**	**7.6600e-003**		**7.6600e-003**	**7.6600e-003**	**0.0000**	**24.1806**	**24.1806**	**3.3900e-003**	**0.0000**	**24.2654**

11.0 Vegetation

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

21-197 803-851 Old County Road Existing Use

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Day-Care Center	16.45	1000sqft	0.38	16,450.00	0
Unrefrigerated Warehouse-No Rail	6.80	1000sqft	0.16	6,800.00	0
General Light Industry	2.80	1000sqft	0.06	2,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2022
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Library land use type used for Nursery. Nursery land use not available in CalEEMod.

Construction Phase - Operation Only

Off-road Equipment - Operation Only

Vehicle Trips - Trip rates adjusted based on information provided by traffic consultant.

Vehicle Emission Factors - Emission factors from EMFAC2021

Fleet Mix - Fleet Mix from EMFAC2021

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	2.2470e-003	7.1773e-003

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblFleetMix	HHD	2.2470e-003	7.1773e-003
tblFleetMix	HHD	2.2470e-003	7.1773e-003
tblFleetMix	LDA	0.49	0.49
tblFleetMix	LDA	0.49	0.49
tblFleetMix	LDA	0.49	0.49
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT1	0.07	0.04
tblFleetMix	LDT2	0.22	0.25
tblFleetMix	LDT2	0.22	0.25
tblFleetMix	LDT2	0.22	0.25
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD1	0.02	0.03
tblFleetMix	LHD2	5.8150e-003	6.2253e-003
tblFleetMix	LHD2	5.8150e-003	6.2253e-003
tblFleetMix	LHD2	5.8150e-003	6.2253e-003
tblFleetMix	MCY	0.03	3.8922e-003
tblFleetMix	MCY	0.03	3.8922e-003
tblFleetMix	MCY	0.03	3.8922e-003
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MDV	0.14	0.15
tblFleetMix	MH	2.4690e-003	5.7217e-004
tblFleetMix	MH	2.4690e-003	5.7217e-004
tblFleetMix	MH	2.4690e-003	5.7217e-004
tblFleetMix	MHD	9.9900e-003	0.01
tblFleetMix	MHD	9.9900e-003	0.01
tblFleetMix	MHD	9.9900e-003	0.01

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblFleetMix	OBUS	1.5780e-003	5.0436e-003
tblFleetMix	OBUS	1.5780e-003	5.0436e-003
tblFleetMix	OBUS	1.5780e-003	5.0436e-003
tblFleetMix	SBUS	4.4000e-004	3.9279e-004
tblFleetMix	SBUS	4.4000e-004	3.9279e-004
tblFleetMix	SBUS	4.4000e-004	3.9279e-004
tblFleetMix	UBUS	6.3600e-004	1.8797e-003
tblFleetMix	UBUS	6.3600e-004	1.8797e-003
tblFleetMix	UBUS	6.3600e-004	1.8797e-003
tblVehicleEF	HHD	0.03	0.26
tblVehicleEF	HHD	0.17	0.28
tblVehicleEF	HHD	3.0000e-006	6.7753e-007
tblVehicleEF	HHD	4.86	4.44
tblVehicleEF	HHD	1.00	1.69
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	986.47	817.56
tblVehicleEF	HHD	1,722.89	1,847.10
tblVehicleEF	HHD	0.24	0.31
tblVehicleEF	HHD	0.16	0.13
tblVehicleEF	HHD	0.28	0.30
tblVehicleEF	HHD	3.0000e-006	7.7195e-007
tblVehicleEF	HHD	5.83	4.43
tblVehicleEF	HHD	4.02	3.26
tblVehicleEF	HHD	2.10	2.39
tblVehicleEF	HHD	5.0230e-003	3.8271e-003
tblVehicleEF	HHD	0.06	0.10
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	2.0000e-006	5.8093e-006

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	HHD	4.8060e-003	3.6571e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6930e-003	8.6225e-003
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	1.0000e-006	5.3415e-006
tblVehicleEF	HHD	3.0000e-006	9.9091e-004
tblVehicleEF	HHD	1.6300e-004	2.7701e-004
tblVehicleEF	HHD	0.36	0.29
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	0.09	0.05
tblVehicleEF	HHD	7.5000e-005	2.2865e-003
tblVehicleEF	HHD	1.5000e-005	3.6777e-006
tblVehicleEF	HHD	8.8510e-003	6.9761e-003
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	2.0000e-006	3.1058e-006
tblVehicleEF	HHD	3.0000e-006	9.9091e-004
tblVehicleEF	HHD	1.6300e-004	2.7701e-004
tblVehicleEF	HHD	0.42	0.58
tblVehicleEF	HHD	2.0000e-006	0.00
tblVehicleEF	HHD	0.27	0.33
tblVehicleEF	HHD	7.5000e-005	2.2865e-003
tblVehicleEF	HHD	1.7000e-005	4.0266e-006
tblVehicleEF	LDA	2.0280e-003	2.3194e-003
tblVehicleEF	LDA	0.05	0.07
tblVehicleEF	LDA	0.56	0.66
tblVehicleEF	LDA	2.27	3.35
tblVehicleEF	LDA	246.96	260.55
tblVehicleEF	LDA	52.49	67.65
tblVehicleEF	LDA	4.3020e-003	4.5172e-003

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	LDA	0.02	0.03
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.19	0.25
tblVehicleEF	LDA	0.04	6.4734e-003
tblVehicleEF	LDA	8.0000e-003	8.0000e-003
tblVehicleEF	LDA	1.3690e-003	1.2842e-003
tblVehicleEF	LDA	1.8120e-003	2.1481e-003
tblVehicleEF	LDA	0.02	2.2657e-003
tblVehicleEF	LDA	2.0000e-003	2.0000e-003
tblVehicleEF	LDA	1.2610e-003	1.1824e-003
tblVehicleEF	LDA	1.6660e-003	1.9752e-003
tblVehicleEF	LDA	0.03	0.27
tblVehicleEF	LDA	0.09	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	7.9910e-003	9.2860e-003
tblVehicleEF	LDA	0.03	0.21
tblVehicleEF	LDA	0.23	0.34
tblVehicleEF	LDA	2.4430e-003	2.5755e-003
tblVehicleEF	LDA	5.1900e-004	6.6878e-004
tblVehicleEF	LDA	0.03	0.27
tblVehicleEF	LDA	0.09	0.08
tblVehicleEF	LDA	0.03	0.00
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.21
tblVehicleEF	LDA	0.25	0.37
tblVehicleEF	LDT1	3.2790e-003	6.2872e-003
tblVehicleEF	LDT1	0.06	0.11
tblVehicleEF	LDT1	0.78	1.36
tblVehicleEF	LDT1	2.36	5.61

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	LDT1	287.63	330.88
tblVehicleEF	LDT1	61.36	87.79
tblVehicleEF	LDT1	5.4800e-003	9.5155e-003
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.06	0.13
tblVehicleEF	LDT1	0.21	0.39
tblVehicleEF	LDT1	0.04	8.0921e-003
tblVehicleEF	LDT1	8.0000e-003	8.0000e-003
tblVehicleEF	LDT1	1.7500e-003	1.9809e-003
tblVehicleEF	LDT1	2.2560e-003	3.0326e-003
tblVehicleEF	LDT1	0.02	2.8322e-003
tblVehicleEF	LDT1	2.0000e-003	2.0000e-003
tblVehicleEF	LDT1	1.6100e-003	1.8230e-003
tblVehicleEF	LDT1	2.0740e-003	2.7886e-003
tblVehicleEF	LDT1	0.05	0.54
tblVehicleEF	LDT1	0.12	0.16
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	0.01	0.03
tblVehicleEF	LDT1	0.07	0.45
tblVehicleEF	LDT1	0.27	0.57
tblVehicleEF	LDT1	2.8460e-003	3.2711e-003
tblVehicleEF	LDT1	6.0700e-004	8.6787e-004
tblVehicleEF	LDT1	0.05	0.54
tblVehicleEF	LDT1	0.12	0.16
tblVehicleEF	LDT1	0.05	0.00
tblVehicleEF	LDT1	0.02	0.04
tblVehicleEF	LDT1	0.07	0.45
tblVehicleEF	LDT1	0.30	0.62
tblVehicleEF	LDT2	2.6450e-003	2.6021e-003

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	0.66	0.74
tblVehicleEF	LDT2	2.77	3.68
tblVehicleEF	LDT2	306.08	343.01
tblVehicleEF	LDT2	65.86	87.58
tblVehicleEF	LDT2	5.3110e-003	5.5378e-003
tblVehicleEF	LDT2	0.03	0.04
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.25	0.32
tblVehicleEF	LDT2	0.04	7.7144e-003
tblVehicleEF	LDT2	8.0000e-003	8.0000e-003
tblVehicleEF	LDT2	1.4770e-003	1.3869e-003
tblVehicleEF	LDT2	1.8690e-003	2.1925e-003
tblVehicleEF	LDT2	0.02	2.7000e-003
tblVehicleEF	LDT2	2.0000e-003	2.0000e-003
tblVehicleEF	LDT2	1.3590e-003	1.2760e-003
tblVehicleEF	LDT2	1.7190e-003	2.0159e-003
tblVehicleEF	LDT2	0.04	0.22
tblVehicleEF	LDT2	0.09	0.07
tblVehicleEF	LDT2	0.04	0.00
tblVehicleEF	LDT2	0.01	0.01
tblVehicleEF	LDT2	0.05	0.17
tblVehicleEF	LDT2	0.28	0.37
tblVehicleEF	LDT2	3.0280e-003	3.3905e-003
tblVehicleEF	LDT2	6.5200e-004	8.6580e-004
tblVehicleEF	LDT2	0.04	0.22
tblVehicleEF	LDT2	0.09	0.07
tblVehicleEF	LDT2	0.04	0.00
tblVehicleEF	LDT2	0.02	0.01

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	LDT2	0.05	0.17
tblVehicleEF	LDT2	0.31	0.41
tblVehicleEF	LHD1	5.3000e-003	5.8431e-003
tblVehicleEF	LHD1	7.2240e-003	7.3839e-003
tblVehicleEF	LHD1	0.01	0.02
tblVehicleEF	LHD1	0.19	0.21
tblVehicleEF	LHD1	0.62	0.87
tblVehicleEF	LHD1	1.08	2.43
tblVehicleEF	LHD1	8.84	8.65
tblVehicleEF	LHD1	796.65	802.84
tblVehicleEF	LHD1	12.03	20.18
tblVehicleEF	LHD1	7.1700e-004	5.7945e-004
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.03	0.04
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.52	0.56
tblVehicleEF	LHD1	0.31	0.47
tblVehicleEF	LHD1	7.9700e-004	5.8283e-004
tblVehicleEF	LHD1	0.08	0.08
tblVehicleEF	LHD1	9.6980e-003	9.2052e-003
tblVehicleEF	LHD1	8.2510e-003	0.01
tblVehicleEF	LHD1	2.4800e-004	2.2575e-004
tblVehicleEF	LHD1	7.6300e-004	5.5762e-004
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.4250e-003	2.3013e-003
tblVehicleEF	LHD1	7.8460e-003	0.01
tblVehicleEF	LHD1	2.2800e-004	2.0757e-004
tblVehicleEF	LHD1	1.2870e-003	0.11
tblVehicleEF	LHD1	0.06	0.03

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	7.9700e-004	0.00
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.16	0.16
tblVehicleEF	LHD1	0.07	0.12
tblVehicleEF	LHD1	8.6000e-005	8.4366e-005
tblVehicleEF	LHD1	7.7840e-003	7.8580e-003
tblVehicleEF	LHD1	1.1900e-004	1.9952e-004
tblVehicleEF	LHD1	1.2870e-003	0.11
tblVehicleEF	LHD1	0.06	0.03
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	7.9700e-004	0.00
tblVehicleEF	LHD1	0.10	0.09
tblVehicleEF	LHD1	0.16	0.16
tblVehicleEF	LHD1	0.07	0.13
tblVehicleEF	LHD2	3.3550e-003	3.6129e-003
tblVehicleEF	LHD2	6.3020e-003	6.7184e-003
tblVehicleEF	LHD2	8.1370e-003	0.01
tblVehicleEF	LHD2	0.14	0.15
tblVehicleEF	LHD2	0.52	0.58
tblVehicleEF	LHD2	0.67	1.46
tblVehicleEF	LHD2	13.62	13.35
tblVehicleEF	LHD2	772.49	845.43
tblVehicleEF	LHD2	8.39	11.54
tblVehicleEF	LHD2	1.6520e-003	1.5390e-003
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	0.09	0.08
tblVehicleEF	LHD2	0.57	0.73

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	LHD2	0.19	0.28
tblVehicleEF	LHD2	1.3540e-003	1.2417e-003
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.3800e-004	1.2418e-004
tblVehicleEF	LHD2	1.2960e-003	1.1880e-003
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	2.6700e-003	2.6257e-003
tblVehicleEF	LHD2	0.01	0.02
tblVehicleEF	LHD2	1.2700e-004	1.1418e-004
tblVehicleEF	LHD2	7.5600e-004	0.07
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.6600e-004	0.00
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.04	0.07
tblVehicleEF	LHD2	1.3000e-004	1.2823e-004
tblVehicleEF	LHD2	7.4680e-003	8.1627e-003
tblVehicleEF	LHD2	8.3000e-005	1.1409e-004
tblVehicleEF	LHD2	7.5600e-004	0.07
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	4.6600e-004	0.00
tblVehicleEF	LHD2	0.11	0.12
tblVehicleEF	LHD2	0.10	0.10
tblVehicleEF	LHD2	0.04	0.08
tblVehicleEF	MCY	0.33	0.16

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	MCY	0.26	0.19
tblVehicleEF	MCY	19.02	12.33
tblVehicleEF	MCY	9.17	7.96
tblVehicleEF	MCY	213.08	188.69
tblVehicleEF	MCY	60.80	50.07
tblVehicleEF	MCY	0.07	0.04
tblVehicleEF	MCY	0.02	8.6711e-003
tblVehicleEF	MCY	1.15	0.56
tblVehicleEF	MCY	0.27	0.15
tblVehicleEF	MCY	0.01	0.01
tblVehicleEF	MCY	4.0000e-003	4.0000e-003
tblVehicleEF	MCY	2.0940e-003	2.0074e-003
tblVehicleEF	MCY	3.3370e-003	4.0700e-003
tblVehicleEF	MCY	5.0400e-003	4.2000e-003
tblVehicleEF	MCY	1.9560e-003	1.8799e-003
tblVehicleEF	MCY	3.1380e-003	3.8358e-003
tblVehicleEF	MCY	0.62	3.59
tblVehicleEF	MCY	0.57	3.56
tblVehicleEF	MCY	0.38	0.00
tblVehicleEF	MCY	2.21	1.05
tblVehicleEF	MCY	0.44	3.72
tblVehicleEF	MCY	1.97	1.43
tblVehicleEF	MCY	2.1090e-003	1.8654e-003
tblVehicleEF	MCY	6.0200e-004	4.9500e-004
tblVehicleEF	MCY	0.62	0.08
tblVehicleEF	MCY	0.57	3.56
tblVehicleEF	MCY	0.38	0.00
tblVehicleEF	MCY	2.75	1.26
tblVehicleEF	MCY	0.44	3.72

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	MCY	2.14	1.56
tblVehicleEF	MDV	2.8920e-003	3.2007e-003
tblVehicleEF	MDV	0.07	0.10
tblVehicleEF	MDV	0.69	0.80
tblVehicleEF	MDV	3.04	3.95
tblVehicleEF	MDV	368.66	412.18
tblVehicleEF	MDV	78.55	104.66
tblVehicleEF	MDV	6.9690e-003	7.1729e-003
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.29	0.40
tblVehicleEF	MDV	0.04	7.7630e-003
tblVehicleEF	MDV	8.0000e-003	8.0000e-003
tblVehicleEF	MDV	1.5500e-003	1.4522e-003
tblVehicleEF	MDV	1.9760e-003	2.3427e-003
tblVehicleEF	MDV	0.02	2.7170e-003
tblVehicleEF	MDV	2.0000e-003	2.0000e-003
tblVehicleEF	MDV	1.4290e-003	1.3380e-003
tblVehicleEF	MDV	1.8170e-003	2.1542e-003
tblVehicleEF	MDV	0.04	0.26
tblVehicleEF	MDV	0.10	0.08
tblVehicleEF	MDV	0.05	0.00
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.05	0.20
tblVehicleEF	MDV	0.34	0.48
tblVehicleEF	MDV	3.6430e-003	4.0724e-003
tblVehicleEF	MDV	7.7700e-004	1.0347e-003
tblVehicleEF	MDV	0.04	0.26
tblVehicleEF	MDV	0.10	0.08

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	MDV	0.05	0.00
tblVehicleEF	MDV	0.02	0.02
tblVehicleEF	MDV	0.05	0.20
tblVehicleEF	MDV	0.37	0.52
tblVehicleEF	MH	7.8210e-003	0.01
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.73	1.52
tblVehicleEF	MH	2.03	2.75
tblVehicleEF	MH	1,502.52	1,675.54
tblVehicleEF	MH	18.02	23.04
tblVehicleEF	MH	0.06	0.07
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	1.03	1.39
tblVehicleEF	MH	0.24	0.29
tblVehicleEF	MH	0.13	0.04
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	2.7100e-004	3.6558e-004
tblVehicleEF	MH	0.06	0.02
tblVehicleEF	MH	3.2730e-003	3.3158e-003
tblVehicleEF	MH	0.01	0.02
tblVehicleEF	MH	2.4900e-004	3.3613e-004
tblVehicleEF	MH	0.38	30.99
tblVehicleEF	MH	0.04	9.08
tblVehicleEF	MH	0.16	0.00
tblVehicleEF	MH	0.05	0.09
tblVehicleEF	MH	8.9160e-003	0.21
tblVehicleEF	MH	0.09	0.12
tblVehicleEF	MH	0.01	0.02

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	MH	1.7800e-004	2.2778e-004
tblVehicleEF	MH	0.38	30.99
tblVehicleEF	MH	0.04	9.08
tblVehicleEF	MH	0.16	0.00
tblVehicleEF	MH	0.07	0.12
tblVehicleEF	MH	8.9160e-003	0.21
tblVehicleEF	MH	0.10	0.13
tblVehicleEF	MHD	3.9210e-003	0.01
tblVehicleEF	MHD	4.7020e-003	0.01
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.38	0.65
tblVehicleEF	MHD	0.43	0.60
tblVehicleEF	MHD	1.26	1.48
tblVehicleEF	MHD	68.23	157.17
tblVehicleEF	MHD	1,119.63	1,289.87
tblVehicleEF	MHD	10.33	11.01
tblVehicleEF	MHD	9.7120e-003	0.02
tblVehicleEF	MHD	0.14	0.15
tblVehicleEF	MHD	8.1860e-003	7.8622e-003
tblVehicleEF	MHD	0.49	1.01
tblVehicleEF	MHD	1.73	1.59
tblVehicleEF	MHD	1.39	1.20
tblVehicleEF	MHD	9.9300e-004	3.1933e-003
tblVehicleEF	MHD	0.13	0.05
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	1.2700e-004	1.4438e-004
tblVehicleEF	MHD	9.5000e-004	3.0547e-003
tblVehicleEF	MHD	0.06	0.02

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	MHD	3.0000e-003	3.0000e-003
tblVehicleEF	MHD	0.03	0.02
tblVehicleEF	MHD	1.1700e-004	1.3275e-004
tblVehicleEF	MHD	3.4300e-004	0.03
tblVehicleEF	MHD	0.02	8.8146e-003
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	2.1300e-004	0.00
tblVehicleEF	MHD	0.07	0.07
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.06	0.07
tblVehicleEF	MHD	6.4800e-004	1.4597e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	1.0200e-004	1.0883e-004
tblVehicleEF	MHD	3.4300e-004	0.03
tblVehicleEF	MHD	0.02	8.8146e-003
tblVehicleEF	MHD	0.03	0.05
tblVehicleEF	MHD	2.1300e-004	0.00
tblVehicleEF	MHD	0.08	0.09
tblVehicleEF	MHD	0.02	0.07
tblVehicleEF	MHD	0.06	0.07
tblVehicleEF	OBUS	6.7140e-003	8.1587e-003
tblVehicleEF	OBUS	5.0760e-003	8.2525e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.58	0.46
tblVehicleEF	OBUS	0.49	0.31
tblVehicleEF	OBUS	1.56	1.18
tblVehicleEF	OBUS	107.54	92.23
tblVehicleEF	OBUS	1,354.47	1,344.38
tblVehicleEF	OBUS	13.26	10.27

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	OBUS	0.02	0.01
tblVehicleEF	OBUS	0.14	0.17
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.54	0.43
tblVehicleEF	OBUS	1.87	0.94
tblVehicleEF	OBUS	1.06	1.06
tblVehicleEF	OBUS	7.9200e-004	2.5835e-004
tblVehicleEF	OBUS	0.13	0.05
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.02	9.2437e-003
tblVehicleEF	OBUS	1.3600e-004	1.0260e-004
tblVehicleEF	OBUS	7.5800e-004	2.4709e-004
tblVehicleEF	OBUS	0.06	0.02
tblVehicleEF	OBUS	3.0000e-003	3.0000e-003
tblVehicleEF	OBUS	0.02	8.8368e-003
tblVehicleEF	OBUS	1.2500e-004	9.4337e-005
tblVehicleEF	OBUS	7.7900e-004	0.03
tblVehicleEF	OBUS	0.01	8.9138e-003
tblVehicleEF	OBUS	0.05	0.03
tblVehicleEF	OBUS	3.9500e-004	0.00
tblVehicleEF	OBUS	0.06	0.03
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.07	0.06
tblVehicleEF	OBUS	1.0200e-003	8.6709e-004
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	1.3100e-004	1.0148e-004
tblVehicleEF	OBUS	7.7900e-004	0.03
tblVehicleEF	OBUS	0.01	8.9138e-003
tblVehicleEF	OBUS	0.06	0.05

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	OBUS	3.9500e-004	0.00
tblVehicleEF	OBUS	0.07	0.05
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	0.08	0.06
tblVehicleEF	SBUS	0.08	0.09
tblVehicleEF	SBUS	0.01	0.09
tblVehicleEF	SBUS	8.1020e-003	7.9979e-003
tblVehicleEF	SBUS	2.98	2.07
tblVehicleEF	SBUS	1.00	1.81
tblVehicleEF	SBUS	1.26	1.18
tblVehicleEF	SBUS	360.00	206.71
tblVehicleEF	SBUS	1,028.45	1,021.11
tblVehicleEF	SBUS	6.23	5.49
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.12	0.12
tblVehicleEF	SBUS	5.9500e-003	4.8573e-003
tblVehicleEF	SBUS	3.52	1.58
tblVehicleEF	SBUS	5.24	3.32
tblVehicleEF	SBUS	0.62	0.44
tblVehicleEF	SBUS	4.5830e-003	1.8679e-003
tblVehicleEF	SBUS	0.74	0.05
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	9.6000e-005	7.3044e-005
tblVehicleEF	SBUS	4.3850e-003	1.7861e-003
tblVehicleEF	SBUS	0.32	0.02
tblVehicleEF	SBUS	2.5990e-003	2.6003e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	8.9000e-005	6.7161e-005

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	SBUS	5.6200e-004	0.05
tblVehicleEF	SBUS	7.2750e-003	0.01
tblVehicleEF	SBUS	0.36	0.24
tblVehicleEF	SBUS	2.5600e-004	0.00
tblVehicleEF	SBUS	0.11	0.10
tblVehicleEF	SBUS	0.01	0.04
tblVehicleEF	SBUS	0.05	0.05
tblVehicleEF	SBUS	3.4360e-003	1.8974e-003
tblVehicleEF	SBUS	9.8650e-003	9.5734e-003
tblVehicleEF	SBUS	6.2000e-005	5.4266e-005
tblVehicleEF	SBUS	5.6200e-004	0.05
tblVehicleEF	SBUS	7.2750e-003	0.01
tblVehicleEF	SBUS	0.51	0.38
tblVehicleEF	SBUS	2.5600e-004	0.00
tblVehicleEF	SBUS	0.14	0.20
tblVehicleEF	SBUS	0.01	0.04
tblVehicleEF	SBUS	0.05	0.05
tblVehicleEF	UBUS	0.84	0.16
tblVehicleEF	UBUS	0.01	7.7749e-003
tblVehicleEF	UBUS	5.26	2.06
tblVehicleEF	UBUS	0.82	0.83
tblVehicleEF	UBUS	1,802.99	1,395.58
tblVehicleEF	UBUS	9.26	5.76
tblVehicleEF	UBUS	0.28	0.20
tblVehicleEF	UBUS	7.0140e-003	0.01
tblVehicleEF	UBUS	3.45	2.45
tblVehicleEF	UBUS	0.09	0.08
tblVehicleEF	UBUS	0.08	0.11
tblVehicleEF	UBUS	0.03	0.03

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

tblVehicleEF	UBUS	7.7550e-003	6.8419e-003
tblVehicleEF	UBUS	5.0000e-005	1.5333e-005
tblVehicleEF	UBUS	0.03	0.04
tblVehicleEF	UBUS	7.8010e-003	7.3406e-003
tblVehicleEF	UBUS	7.4180e-003	6.5413e-003
tblVehicleEF	UBUS	4.6000e-005	1.4098e-005
tblVehicleEF	UBUS	3.7600e-004	0.02
tblVehicleEF	UBUS	6.3660e-003	8.2353e-003
tblVehicleEF	UBUS	2.8300e-004	0.00
tblVehicleEF	UBUS	0.01	0.14
tblVehicleEF	UBUS	2.2390e-003	0.01
tblVehicleEF	UBUS	0.06	0.03
tblVehicleEF	UBUS	0.02	0.01
tblVehicleEF	UBUS	9.2000e-005	5.6929e-005
tblVehicleEF	UBUS	3.7600e-004	0.02
tblVehicleEF	UBUS	6.3660e-003	8.2353e-003
tblVehicleEF	UBUS	2.8300e-004	0.00
tblVehicleEF	UBUS	0.86	0.31
tblVehicleEF	UBUS	2.2390e-003	0.01
tblVehicleEF	UBUS	0.06	0.03
tblVehicleTrips	ST_TR	1.74	68.09
tblVehicleTrips	SU_TR	1.74	68.09
tblVehicleTrips	WD_TR	47.62	47.60
tblVehicleTrips	WD_TR	1.74	68.09

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

21-197 803-851 Old County Road Existing Use - 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
Year	tons/yr										MT/yr					
2022	3.6600e-003	0.0322	0.0384	6.0000e-005	3.9000e-004	1.6900e-003	2.0800e-003	1.0000e-004	1.6100e-003	1.7200e-003	0.0000	5.5090	5.5090	9.7000e-004	1.0000e-005	5.5356
Maximum	**3.6600e-003**	**0.0322**	**0.0384**	**6.0000e-005**	**3.9000e-004**	**1.6900e-003**	**2.0800e-003**	**1.0000e-004**	**1.6100e-003**	**1.7200e-003**	**0.0000**	**5.5090**	**5.5090**	**9.7000e-004**	**1.0000e-005**	**5.5356**

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	3.6600e-003	0.0322	0.0384	6.0000e-005	3.9000e-004	1.6900e-003	2.0800e-003	1.0000e-004	1.6100e-003	1.7200e-003	0.0000	5.5090	5.5090	9.7000e-004	1.0000e-005	5.5356
Maximum	**3.6600e-003**	**0.0322**	**0.0384**	**6.0000e-005**	**3.9000e-004**	**1.6900e-003**	**2.0800e-003**	**1.0000e-004**	**1.6100e-003**	**1.7200e-003**	**0.0000**	**5.5090**	**5.5090**	**9.7000e-004**	**1.0000e-005**	**5.5356**

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

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**1-3-2022**	**4-2-2022**	0.0307	0.0307
		Highest	0.0307	0.0307

21-197 803-851 Old County Road Existing Use - 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	0.1153	0.0000	2.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.7000e-004	4.7000e-004	0.0000	0.0000	5.0000e-004
Energy	1.8700e-003	0.0170	0.0143	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4982	18.4982	3.5000e-004	3.4000e-004	18.6082
Mobile	0.4559	0.4668	3.3375	8.4200e-003	0.6999	6.0500e-003	0.7060	0.1746	5.6400e-003	0.1802	0.0000	778.7586	778.7586	0.0427	0.0385	791.3029
Waste						0.0000	0.0000		0.0000	0.0000	6.3435	0.0000	6.3435	0.3749	0.0000	15.7157
Water						0.0000	0.0000		0.0000	0.0000	0.9281	0.0000	0.9281	0.0953	2.2500e-003	3.9821
Total	**0.5731**	**0.4838**	**3.3520**	**8.5200e-003**	**0.6999**	**7.3400e-003**	**0.7073**	**0.1746**	**6.9300e-003**	**0.1815**	**7.2716**	**797.2573**	**804.5289**	**0.5132**	**0.0411**	**829.6094**

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	0.1153	0.0000	2.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.7000e-004	4.7000e-004	0.0000	0.0000	5.0000e-004
Energy	1.8700e-003	0.0170	0.0143	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4982	18.4982	3.5000e-004	3.4000e-004	18.6082
Mobile	0.4559	0.4668	3.3375	8.4200e-003	0.6999	6.0500e-003	0.7060	0.1746	5.6400e-003	0.1802	0.0000	778.7586	778.7586	0.0427	0.0385	791.3029

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

Waste						0.0000	0.0000		0.0000	0.0000	6.3435	0.0000	6.3435	0.3749	0.0000	15.7157
Water						0.0000	0.0000		0.0000	0.0000	0.9281	0.0000	0.9281	0.0953	2.2500e-003	3.9821
Total	**0.5731**	**0.4838**	**3.3520**	**8.5200e-003**	**0.6999**	**7.3400e-003**	**0.7073**	**0.1746**	**6.9300e-003**	**0.1815**	**7.2716**	**797.2573**	**804.5289**	**0.5132**	**0.0411**	**829.6094**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2022	1/14/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –

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	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Trips and VMT

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

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	4	10.00	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					
Off-Road	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

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	1.1000e-004	8.0000e-005	1.0400e-003	0.0000	3.9000e-004	0.0000	4.0000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3022	0.3022	1.0000e-005	1.0000e-005	0.3048

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

Total	**1.1000e-004**	**8.0000e-005**	**1.0400e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**4.0000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3022**	**0.3022**	**1.0000e-005**	**1.0000e-005**	**0.3048**

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	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

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	1.1000e-004	8.0000e-005	1.0400e-003	0.0000	3.9000e-004	0.0000	4.0000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3022	0.3022	1.0000e-005	1.0000e-005	0.3048
Total	**1.1000e-004**	**8.0000e-005**	**1.0400e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**4.0000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3022**	**0.3022**	**1.0000e-005**	**1.0000e-005**	**0.3048**

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4559	0.4668	3.3375	8.4200e-003	0.6999	6.0500e-003	0.7060	0.1746	5.6400e-003	0.1802	0.0000	778.7586	778.7586	0.0427	0.0385	791.3029
Unmitigated	0.4559	0.4668	3.3375	8.4200e-003	0.6999	6.0500e-003	0.7060	0.1746	5.6400e-003	0.1802	0.0000	778.7586	778.7586	0.0427	0.0385	791.3029

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Day-Care Center	783.02	102.32	96.07	692,023	692,023
General Light Industry	13.89	5.57	14.00	37,125	37,125
Unrefrigerated Warehouse-No Rail	463.01	463.01	463.01	1,351,769	1,351,769
Total	1,259.92	570.90	573.08	2,080,916	2,080,916

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Day-Care Center	9.50	7.30	7.30	12.70	82.30	5.00	28	58	14

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Unrefrigerated Warehouse-No Rai	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Day-Care Center	0.491086	0.041086	0.253609	0.146583	0.030190	0.006225	0.012264	0.007177	0.005044	0.001880	0.003892	0.000393	0.000572
General Light Industry	0.491086	0.041086	0.253609	0.146583	0.030190	0.006225	0.012264	0.007177	0.005044	0.001880	0.003892	0.000393	0.000572
Unrefrigerated Warehouse-No Rail	0.491086	0.041086	0.253609	0.146583	0.030190	0.006225	0.012264	0.007177	0.005044	0.001880	0.003892	0.000393	0.000572

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	1.8700e-003	0.0170	0.0143	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4982	18.4982	3.5000e-004	3.4000e-004	18.6082
NaturalGas Unmitigated	1.8700e-003	0.0170	0.0143	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4982	18.4982	3.5000e-004	3.4000e-004	18.6082

5.2 Energy by Land Use - NaturalGas

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

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					
Day-Care Center	268464	1.4500e-003	0.0132	0.0111	8.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	14.3263	14.3263	2.7000e-004	2.6000e-004	14.4114
General Light Industry	68796	3.7000e-004	3.3700e-003	2.8300e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.6712	3.6712	7.0000e-005	7.0000e-005	3.6930
Unrefrigerated Warehouse-No Rail	9384	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.5008	0.5008	1.0000e-005	1.0000e-005	0.5037
Total		**1.8700e-003**	**0.0170**	**0.0143**	**1.0000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**18.4983**	**18.4983**	**3.5000e-004**	**3.4000e-004**	**18.6082**

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					
Day-Care Center	268464	1.4500e-003	0.0132	0.0111	8.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	14.3263	14.3263	2.7000e-004	2.6000e-004	14.4114
General Light Industry	68796	3.7000e-004	3.3700e-003	2.8300e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.6712	3.6712	7.0000e-005	7.0000e-005	3.6930
Unrefrigerated Warehouse-No Rail	9384	5.0000e-005	4.6000e-004	3.9000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.5008	0.5008	1.0000e-005	1.0000e-005	0.5037
Total		**1.8700e-003**	**0.0170**	**0.0143**	**1.0000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**18.4983**	**18.4983**	**3.5000e-004**	**3.4000e-004**	**18.6082**

21-197 803-851 Old County Road Existing Use - 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			
Day-Care Center	71886.5	0.0000	0.0000	0.0000	0.0000
General Light Industry	20804	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	25568	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Day-Care Center	71886.5	0.0000	0.0000	0.0000	0.0000
General Light Industry	20804	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	25568	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1153	0.0000	2.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.7000e-004	4.7000e-004	0.0000	0.0000	5.0000e-004
Unmitigated	0.1153	0.0000	2.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.7000e-004	4.7000e-004	0.0000	0.0000	5.0000e-004

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	0.0136					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1017					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.7000e-004	4.7000e-004	0.0000	0.0000	5.0000e-004
Total	**0.1153**	**0.0000**	**2.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.7000e-004**	**4.7000e-004**	**0.0000**	**0.0000**	**5.0000e-004**

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

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	0.0136					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1017					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.7000e-004	4.7000e-004	0.0000	0.0000	5.0000e-004
Total	**0.1153**	**0.0000**	**2.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.7000e-004**	**4.7000e-004**	**0.0000**	**0.0000**	**5.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.9281	0.0953	2.2500e-003	3.9821

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

Unmitigated	0.9281	0.0953	2.2500e-003	3.9821

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Day-Care Center	0.705533 / 1.81423	0.2238	0.0230	5.4000e-004	0.9603
General Light Industry	0.6475 / 0	0.2054	0.0211	5.0000e-004	0.8814
Unrefrigerated Warehouse-No Rail	1.5725 / 0	0.4989	0.0512	1.2100e-003	2.1404
Total		**0.9281**	**0.0953**	**2.2500e-003**	**3.9821**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Day-Care Center	0.705533 / 1.81423	0.2238	0.0230	5.4000e-004	0.9603
General Light Industry	0.6475 / 0	0.2054	0.0211	5.0000e-004	0.8814

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

Unrefrigerated Warehouse-No Rail	1.5725 / 0	0.4989	0.0512	1.2100e-003	2.1404
Total		**0.9281**	**0.0953**	**2.2500e-003**	**3.9821**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.3435	0.3749	0.0000	15.7157
Unmitigated	6.3435	0.3749	0.0000	15.7157

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Day-Care Center	21.39	4.3420	0.2566	0.0000	10.7571

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

General Light Industry	3.47	0.7044	0.0416	0.0000	1.7451
Unrefrigerated Warehouse-No Rail	6.39	1.2971	0.0767	0.0000	3.2135
Total		**6.3435**	**0.3749**	**0.0000**	**15.7157**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Day-Care Center	21.39	4.3420	0.2566	0.0000	10.7571
General Light Industry	3.47	0.7044	0.0416	0.0000	1.7451
Unrefrigerated Warehouse-No Rail	6.39	1.2971	0.0767	0.0000	3.2135
Total		**6.3435**	**0.3749**	**0.0000**	**15.7157**

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

21-197 803-851 Old County Road Existing Use - San Mateo County, Annual

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2021 Emissions and CARB SAFE Off-Model Adjustment Factors

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
	Tons										*Metric Tons*			
Criteria Pollutants														
2022	0.0690	1.0011	1.0140	0.0058	0.2085	0.0469	0.2554	0.0314	0.0199	0.0513	575.7908	0.0662	0.0744	599.6129
2023	0.0679	0.9671	1.0722	0.0063	0.2320	0.0513	0.2832	0.0349	0.0215	0.0564	630.2571	0.0720	0.0813	656.2950
2024+2025	0.0670	0.9756	1.0882	0.0066	0.2466	0.0540	0.3006	0.0371	0.0224	0.0595	657.8009	0.0736	0.0848	684.9152
Toxic Air Contaminants (1.0 Mile Trip Length)														
2022	0.0501	0.2117	0.3090	0.0006	0.0188	0.0040	0.0228	0.0028	0.0018	0.0046	63.7225	0.0114	0.0092	66.7378
2023	0.0518	0.2214	0.3297	0.0007	0.0209	0.0044	0.0253	0.0031	0.0019	0.0051	69.5899	0.0126	0.0100	72.8752
2024+2025	0.0515	0.2293	0.3339	0.0007	0.0222	0.0046	0.0268	0.0033	0.0020	0.0053	72.6727	0.0129	0.0104	76.0872

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	15	0	300	0	546	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	3240	0	10920
Below Grade Garage Excavation	15	0	975	0	15125	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	10530	0	302500
Below Grade Foundations	5	0	250	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	2700	0	0
Garage Concrete	234	105	20358	9135	8080	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	219866.4	66685.5	161600
Phase 1 - Building Construction North	234	105	42120	18900	380	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	454896	137970	7600
Phase 1 - Site	20	0	1600	0	26	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	17280	0	520
Phase 2 - Building Construction South	234	105	46800	21000	590	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	505440	153300	11800
Phase 2 - Site	20	0	1600	0	24	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	17280	0	480

Number of Days Per Year					
2022	2022/02/07	12/31/22	328	235	
2023	1/1/23	12/31/23	365	261	
2024 + 2025	1/1/24	2025/01/22	388	278	
			1081	**773**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	2022/02/07	2022/03/04	5	20
Below Grade Garage Excavation	2022/03/08	2022/06/06	5	65
Below Grade Foundations	2022/05/24	2022/08/01	5	50
Garage Concrete	2022/06/23	2022/10/21	5	87
Phase 1 - Building Construction North	2022/10/28	2023/07/06	5	180
Phase 1 - Site	2023/07/24	2023/11/10	5	80
Phase 2 - Building Construction South	2023/12/15	2024/09/19	5	200
Phase 2 - Site	2024/10/03	2025/01/22	5	80

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2022	HHDT	Aggregate	Aggregate	Gasoline	4.26179	607.5295	607.5295	0	85.26989	4.217209	0	0.00281	0.00146	0	0.000935	0.005	0.031258	0.001588	0	0.001017	0.02	0.089308	2276.876	0	54.98009	0.116906	0	0.000119	0.151563	0	0.000135	0.60109	0	0.000644	0.048478	0.400153	3.469663	0.877108	0	0.000705	0.048478	0.400153	3.469663	0.045	33.53367	0	6.080621	0.022509	0	0.000544
San Mateo	2022	HHDT	Aggregate	Aggregate	Diesel	1289.917	118758.5	118758.5	0	13886.59	3.367467	50.13908	2.567805	0.026697	0.041054	0	0.00861	0.031515	0.027904	0.04291	0	0.03444	0.090042	1868.7	8522.619	0	0.001942	0.155104	0	0.294414	1.342742	0	0.041821	3.339355	0	0	0	0	0.04761	3.801601	0	0	0	0	0.186789	0.159005	43.82276	0	0.017695	0.080704	0
San Mateo	2022	HHDT	Aggregate	Aggregate	Natural Ga	144.1612	9768.638	9768.638	0	950.7524	1.845139	10.30429	0	0.002051	0.011217	0	0.009	0.058943	0.00223	0.012199	0	0.036	0.168408	1557.751	8370.006	0	3.666383	25.60841	0	0.317558	1.706281	0	0.087249	0.429393	0	0	0	0	3.781534	26.2076	0	0	0	0	0.734123	18.35301	67.58246	0	0	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Gasoline	240666.4	7995565	7995565	0	1130997	0.047702	0	0.275282	0.001241	0	0.002105	0.002	0.002347	0.00135	0	0.002289	0.008	0.006707	282.9533	0	72.26541	0.002546	0	0.077367	0.004869	0	0.033486	0.010142	0	0.368004	0.090257	0.23026	1.365279	0.014797	0	0.402916	0.090257	0.23026	1.365279	0.034582	0.726065	0	3.617602	0.002797	0	0.000714
San Mateo	2022	LDA	Aggregate	Aggregate	Diesel	888.5395	22501.88	22501.88	0	3790.786	0.240012	0	0	0.015881	0	0	0.002	0.002391	0.016599	0	0	0.008	0.006831	236.6875	0	0	0.001267	0	0	0.03729	0	0	0.02727	0	0	0	0	0	0.031045	0	0	0	0	0	0.0031	0.330004	0	0	0.002243	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Electricity	14591.4	568258.7	0	568258.7	72996.66	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Plug-in Hyb	6271.758	249381.9	127562.4	121819.5	25933.72	0.003286	0	0.117199	0.000663	0	0.002168	0.002	0.001311	0.000722	0	0.002358	0.008	0.003747	137.9916	0	66.6249	0.00043	0	0.042806	0.00058	0	0.020671	0.001381	0	0.176635	0.036142	0.032302	0.39726	0.002015	0	0.193393	0.036142	0.032302	0.39726	0.020013	0.205923	0	1.37819	0.001364	0	0.000659
San Mateo	2022	LDT1	Aggregate	Aggregate	Gasoline	24136.47	736196.1	736196.1	0	109571	0.134919	0	0.395074	0.001791	0	0.002798	0.002	0.002838	0.001948	0	0.003043	0.008	0.008107	332.0233	0	88.05436	0.00631	0	0.109218	0.009543	0	0.038745	0.028415	0	0.569782	0.157522	0.456069	2.467901	0.041436	0	0.623836	0.157522	0.456069	2.467901	0.036499	1.368916	0	5.624448	0.003282	0	0.000871
San Mateo	2022	LDT1	Aggregate	Aggregate	Diesel	8.510916	119.4982	119.4982	0	25.11455	1.690269	0	0	0.241464	0	0	0.002	0.00334	0.252382	0	0	0.008	0.009543	418.5155	0	0	0.014886	0	0	0.065937	0	0	0.320488	0	0	0	0	0	0.364855	0	0	0	0	0	0.0031	1.709562	0	0	0.003966	0	0
San Mateo	2022	LDT1	Aggregate	Aggregate	Electricity	61.93893	2054.9	0	2054.9	294.187	0	0	0	0	0	0	0.002	0.001538	0	0	0	0.008	0.004394	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDT1	Aggregate	Aggregate	Plug-in Hyb	19.40692	849.1339	406.2744	442.8594	80.24761	0.003074	0	0.117199	0.000413	0	0.001456	0.002	0.001322	0.000449	0	0.001583	0.008	0.003777	129.0739	0	73.49717	0.000404	0	0.042967	0.000546	0	0.02082	0.001292	0	0.176635	0.024905	0.022892	0.287748	0.001885	0	0.193393	0.024905	0.022892	0.287748	0.020095	0.192615	0	1.37819	0.001276	0	0.000727
San Mateo	2022	LDT2	Aggregate	Aggregate	Gasoline	128775.8	4489208	4489208	0	617258.5	0.062575	0	0.324659	0.001272	0	0.002033	0.002	0.002716	0.001384	0	0.002212	0.008	0.007761	346.2249	0	88.33688	0.002639	0	0.081429	0.005428	0	0.036476	0.010335	0	0.378106	0.068121	0.172205	1.07279	0.015078	0	0.413978	0.068121	0.172205	1.07279	0.03686	0.748119	0	3.725451	0.003423	0	0.000873
San Mateo	2022	LDT2	Aggregate	Aggregate	Diesel	498.9179	17455.1	17455.1	0	2406.111	0.047726	0	0	0.005147	0	0	0.002	0.002738	0.00538	0	0	0.008	0.007822	319.776	0	0	0.000624	0	0	0.050381	0	0	0.013436	0	0	0	0	0	0.015295	0	0	0	0	0	0.0031	0.124515	0	0	0.00303	0	0
San Mateo	2022	LDT2	Aggregate	Aggregate	Electricity	502.691	16536.35	0	16536.35	2591.33	0	0	0	0	0	0	0.002	0.001523	0	0	0	0.008	0.004353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDT2	Aggregate	Aggregate	Plug-in Hyb	938.5352	39780.13	19647.25	20132.88	3880.843	0.003173	0	0.117199	0.000533	0	0.001824	0.002	0.001316	0.00058	0	0.001984	0.008	0.003761	133.2387	0	79.72461	0.000417	0	0.042967	0.000564	0	0.02082	0.001334	0	0.176635	0.026237	0.024762	0.312901	0.001946	0	0.193393	0.026237	0.024762	0.312901	0.020712	0.19883	0	1.37819	0.001317	0	0.000788
San Mateo	2022	LHDT1	Aggregate	Aggregate	Gasoline	10003.64	379521.5	379521.5	0	149039.3	0.147855	0.036625	0.627998	0.001475	0	0.00028	0.002	0.0273	0.001604	0	0.000304	0.008	0.078	873.9961	119.3318	27.2104	0.00734	0.115266	0.0324	0.008388	0.003078	0.051835	0.036131	0.419759	0.159081	0.039876	0.21247	2.143205	0.052722	0.612512	0.174174	0.039876	0.21247	2.143205	0.044922	1.060707	3.758503	3.2802	0.00864	0.00118	0.000269
San Mateo	2022	LHDT1	Aggregate	Aggregate	Diesel	4125.911	163656.9	163656.9	0	51898.77	1.504213	1.931831	0	0.031512	0.027157	0	0.003	0.0273	0.032937	0.028385	0	0.012	0.078	637.8215	131.7515	0	0.007485	0.005098	0	0.100489	0.020757	0	0.161141	0.10976	0	0	0	0	0.183448	0.124954	0	0	0	0	0.175401	0.431298	0.909745	0	0.006044	0.001248	0
San Mateo	2022	LHDT2	Aggregate	Aggregate	Gasoline	1166.848	41928.69	41928.69	0	17384.3	0.172444	0.036335	0.63879	0.001438	0	0.000256	0.002	0.03185	0.001563	0	0.000279	0.008	0.091	987.4952	138.4793	25.88997	0.006917	0.113246	0.032524	0.010039	0.002938	0.050567	0.032554	0.416435	0.161154	0.042451	0.223651	2.256912	0.047503	0.60766	0.176444	0.042451	0.223651	2.256912	0.044984	0.96909	3.758162	3.27211	0.009762	0.001369	0.000256
San Mateo	2022	LHDT2	Aggregate	Aggregate	Diesel	1718.365	70077.77	70077.77	0	21614.87	1.063364	1.845339	0	0.026451	0.026962	0	0.003	0.03185	0.027647	0.028181	0	0.012	0.091	760.4369	209.0317	0	0.0066	0.005098	0	0.119807	0.032933	0	0.142091	0.10976	0	0	0	0	0.161761	0.124954	0	0	0	0	0.190222	0.33983	0.909745	0	0.007206	0.001981	0
San Mateo	2022	MCY	Aggregate	Aggregate	Gasoline	11775.11	70029.62	70029.62	0	23550.22	0.563376	0	0.148145	0.00188	0	0.003836	0.001	0.0042	0.002007	0	0.00407	0.004	0.012	188.692	0	50.07102	0.159449	0	0.191389	0.038859	0	0.008671	1.054922	0	1.43267	3.559039	3.722371	3.591267	1.259821	0	1.557156	3.559039	3.722371	3.591267	0.008767	12.33015	0	7.963377	0.001865	0	0.000495
San Mateo	2022	MDV	Aggregate	Aggregate	Gasoline	72399.54	2561532	2561532	0	344969.9	0.082284	0	0.405736	0.001302	0	0.002201	0.002	0.002736	0.001416	0	0.002394	0.008	0.007817	417.1287	0	107.0056	0.003285	0	0.097944	0.006421	0	0.03969	0.013708	0	0.489899	0.078175	0.208676	1.264413	0.019977	0	0.536373	0.078175	0.208676	1.264413	0.037279	0.822259	0	4.057961	0.004124	0	0.001058
San Mateo	2022	MDV	Aggregate	Aggregate	Diesel	1048.144	37479.46	37479.46	0	5036.896	0.047538	0	0	0.004777	0	0	0.002	0.002777	0.004993	0	0	0.008	0.007934	415.9683	0	0	0.000486	0	0	0.065536	0	0	0.010456	0	0	0	0	0	0.011904	0	0	0	0	0	0.0031	0.180998	0	0	0.003942	0	0
San Mateo	2022	MDV	Aggregate	Aggregate	Electricity	497.6274	16375.41	0	16375.41	2565.598	0	0	0	0	0	0	0.002	0.001523	0	0	0	0.008	0.004351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	MDV	Aggregate	Aggregate	Plug-in Hyb	517.8537	21966.08	11106.12	10859.96	2141.325	0.003248	0	0.117199	0.000662	0	0.002216	0.002	0.001313	0.00072	0	0.00241	0.008	0.003752	136.3969	0	99.02064	0.000428	0	0.043094	0.000581	0	0.020938	0.001365	0	0.176635	0.028658	0.027868	0.344841	0.001992	0	0.193393	0.028658	0.027868	0.344841	0.021235	0.203543	0	1.37819	0.001348	0	0.000979
San Mateo	2022	MH	Aggregate	Aggregate	Gasoline	751.6488	7043.926	7043.926	0	75.19494	0.465552	0	0.403779	0.001863	0	0.00047	0.003	0.015756	0.002026	0	0.000512	0.012	0.045017	1948.174	0	32.24518	0.017921	0	0.039048	0.027477	0	0.041219	0.080748	0	0.17064	12.70927	0.296989	4.339134	0.117828	0	0.186829	12.70927	0.296989	4.339134	0.044744	2.072946	0	3.847624	0.01926	0	0.000319
San Mateo	2022	MH	Aggregate	Aggregate	Diesel	300.3894	3250.689	3250.689	0	30.03894	3.401996	0	0	0.063019	0	0	0.004	0.015675	0.065868	0	0	0.016	0.044785	1084.767	0	0	0.00458	0	0	0.170906	0	0	0.09861	0	0	0	0	0	0.112261	0	0	0	0	0	0.179676	0.315592	0	0	0.010279	0	0
San Mateo	2022	MHDT	Aggregate	Aggregate	Gasoline	756.5401	44483.7	44483.7	0	15136.85	0.604094	0.088245	0.46581	0.00141	0	0.000575	0.003	0.015756	0.001534	0	0.000625	0.012	0.045017	1795.462	537.4412	47.64422	0.019663	0.256996	0.051354	0.028235	0.007106	0.034029	0.098372	1.009116	0.288081	0.038151	0.314095	2.937981	0.143545	1.4725	0.315413	0.038151	0.314095	2.937981	0.044954	2.080066	15.07471	6.396341	0.01775	0.005313	0.000471
San Mateo	2022	MHDT	Aggregate	Aggregate	Diesel	4156.051	174304	174304	0	49995.69	1.853334	15.89701	1.436117	0.023182	0.047988	0	0.003	0.015983	0.02423	0.050158	0	0.012	0.045666	1163.775	2327.752	0	0.002813	0.013999	0	0.183353	0.366738	0	0.060556	0.301404	0	0	0	0	0.068939	0.343126	0	0	0	0	0.193605	0.190383	7.265304	0	0.01102	0.022042	0
San Mateo	2022	MHDT	Aggregate	Aggregate	Natural Ga	40.6324	1873.257	1873.257	0	381.7521	0.153851	6.514328	0	0.001104	0.016957	0	0.003	0.016076	0.001201	0.018442	0	0.012	0.045932	1016.708	5323.016	0	0.747144	17.79445	0	0.207263	1.085132	0	0.010675	0.254248	0	0	0	0	0.762515	18.16055	0	0	0	0	1.06	3.046292	32.12184	0	0	0	0
San Mateo	2022	OBUS	Aggregate	Aggregate	Gasoline	256.1924	15869.04	15869.04	0	5125.898	0.334451	0.065049	0.372974	0.000967	0	0.000281	0.003	0.01568	0.001052	0	0.000306	0.012	0.044799	1762.688	376.5742	30.5752	0.010394	0.20597	0.033776	0.01844	0.005899	0.032179	0.049248	0.746076	0.166832	0.02655	0.111811	1.875172	0.071862	1.088672	0.18266	0.02655	0.111811	1.875172	0.044917	1.079968	5.773479	3.517583	0.017426	0.003723	0.000302
San Mateo	2022	OBUS	Aggregate	Aggregate	Diesel	1024.18	74221.67	74221.67	0	10035.19	1.072703	6.342591	1.429669	0.010592	0.00365	0	0.003	0.01742	0.011071	0.003815	0	0.012	0.04977	1257.365	1266.668	0	0.001405	0.014292	0	0.198098	0.199564	0	0.030244	0.307698	0	0	0	0	0.03443	0.350291	0	0	0	0	0.210134	0.116655	5.413261	0	0.011906	0.011995	0
San Mateo	2022	OBUS	Aggregate	Aggregate	Natural Ga	11.96887	654.3713	654.3713	0	106.5229	0.293719	1.58105	0	0.000566	0.002858	0	0.003	0.016148	0.000615	0.003109	0	0.012	0.046137	1069.812	1202.184	0	0.733013	4.775652	0	0.218088	0.245073	0	0.010473	0.068235	0	0	0	0	0.748094	4.873903	0	0	0	0	1.06	3.101343	5.006328	0	0	0	0
San Mateo	2022	SBUS	Aggregate	Aggregate	Gasoline	57.57285	3267.931	3267.931	0	230.2914	0.981493	0.921357	0.655387	0.001299	0	0.000777	0.002	0.015721	0.001412	0	0.000845	0.008	0.044917	807.8108	2570.697	63.52492	0.024786	2.43655	0.092559	0.045477	0.081943	0.056213	0.121107	10.56494	0.538292	0.15493	0.449507	2.231691	0.17672	15.41634	0.589362	0.15493	0.449507	2.231691	0.045	3.134679	81.77802	13.70908	0.007986	0.025414	0.000628
San Mateo	2022	SBUS	Aggregate	Aggregate	Diesel	168.1521	3799.171	3799.171	0	2434.843	5.308039	24.50088	0.415745	0.025509	0.027927	0	0.003	0.015721	0.026662	0.02919	0	0.012	0.044917	1155.182	2256.975	0	0.003351	0.008427	0	0.181999	0.355587	0	0.072141	0.18143	0	0	0	0	0.082127	0.206545	0	0	0	0	0.128799	0.214547	4.164591	0	0.010939	0.021372	0
San Mateo	2022	SBUS	Aggregate	Aggregate	Natural Ga	5.747464	147.755	147.755	0	83.22328	0.580038	5.278861	0	0.003378	0.011167	0	0.003	0.015721	0.003674	0.012145	0	0.012	0.044917	1270.028	4071.06	0	3.473989	15.35501	0	0.258904	0.829912	0	0.049636	0.219393	0	0	0	0	3.545461	15.67091	0	0	0	0	1.06	11.82462	20.31851	0	0	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Gasoline	61.08139	4153.342	4153.342	0	244.3256	0.052732	0	0.593554	0.000924	0	0.000101	0.002073	0.032333	0.001005	0	0.00011	0.00829	0.092379	1026.004	0	41.36564	0.002283	0	0.05585	0.006009	0	0.07764	0.006738	0	0.216361	0.059157	0.09606	0.592841	0.009832	0	0.236888	0.059157	0.09606	0.592841	0.045	0.562776	0	5.939286	0.010143	0	0.000409
San Mateo	2022	UBUS	Aggregate	Aggregate	Diesel	341.0475	28477.87	28477.87	0	1364.19	2.903167	0	0	0.007622	0	0	0.007913	0.0385	0.007966	0	0	0.031652	0.11	1452.079	0	0	0.00732	0	0	0.228776	0	0	0.157595	0	0	0	0	0	0.179409	0	0	0	0	0	0.12243	0.193248	0	0	0.013759	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Electricity	2.018703	15.3193	0	15.3193	8.074811	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Natural Ga	34.62042	1174.257	1174.257	0	138.4817	0.063543	0	0	0.000296	0	0	0.008807	0.0385	0.00031	0	0	0.035229	0.11	1350.881	0	0	4.451808	0	0	0.275386	0	0	0.063608	0	0	0	0	0	4.543397	0	0	0	0	0	0.97	52.64109	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.005843	0.003613	0.014892	0.260799534	0.008159	0	0	0.08628	0
A	CH4_RUNEX	0.002319	0.006287	0.002602	0.003201	0.007384	0.006718	0.012528	0.279686949	0.008252	0.161010459	0.159449	0.085895	0.013708
A	CH4_STREX	0.071825	0.108853	0.080541	0.095514	0.024032	0.014498	0.011865	6.77534E-07	0.01134	0.007774918	0.191389	0.007998	0.027902
A	CO_IDLEX	0	0	0	0	0.205796	0.152528	0.654892	4.440944093	0.463936	0	0	2.073163	0
A	CO_RUNEX	0.663679	1.363814	0.738234	0.802887	0.87107	0.575388	0.595575	1.692340791	0.306637	2.059527265	12.33015	1.812081	1.518033
A	CO_STREX	3.345366	5.605019	3.681168	3.95481	2.432982	1.458578	1.477853	0.034745524	1.180982	0.826814725	7.963377	1.184587	2.749322
A	CO2_NBIO_IDLEX	0	0	0	0	8.646179	13.35354	157.1739	817.5579223	92.23189	0	0	206.7122	0
A	CO2_NBIO_RUNEX	260.5462	330.8812	343.0122	412.1841	802.8379	845.4343	1289.87	1847.097548	1344.381	1395.583774	188.692	1021.106	1675.54
A	CO2_NBIO_STREX	67.64899	87.78807	87.57845	104.6639	20.18243	11.54073	11.00803	0.314163972	10.26522	5.758558013	50.07102	5.489121	23.04082
A	NOX_IDLEX	0	0	0	0	0.04149	0.082396	1.013523	4.433588742	0.427804	0	0	1.577129	0
A	NOX_RUNEX	0.04387	0.134644	0.061774	0.080621	0.556519	0.729856	1.587068	3.256305124	0.937984	2.453214755	0.563376	3.319508	1.392781
A	NOX_STREX	0.254825	0.393724	0.320782	0.395298	0.465797	0.284748	1.203563	2.389547531	1.064922	0.082629307	0.148145	0.436452	0.288521
A	PM10_IDLEX	0	0	0	0	0.000583	0.001242	0.003193	0.00382705	0.000258	0	0	0.001868	0
A	PM10_PMBW	0.006473	0.008092	0.007714	0.007763	0.078	0.091	0.045537	0.095966343	0.048875	0.108503795	0.012	0.045856	0.044944
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009205	0.010503	0.012	0.034489957	0.012	0.029362212	0.004	0.010401	0.013263
A	PM10_RUNEX	0.001284	0.001981	0.001387	0.001452	0.011044	0.017883	0.019459	0.025838358	0.009244	0.006841902	0.002007	0.015063	0.022185
A	PM10_STREX	0.002148	0.003033	0.002192	0.002343	0.000226	0.000124	0.000144	5.80933E-06	0.000103	1.53331E-05	0.00407	7.3E-05	0.000366
A	PM25_IDLEX	0	0	0	0	0.000558	0.001188	0.003055	0.0036571	0.000247	0	0	0.001786	0
A	PM25_PMBW	0.002266	0.002832	0.0027	0.002717	0.0273	0.03185	0.015938	0.03358822	0.017106	0.037976328	0.0042	0.01605	0.01573
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002301	0.002626	0.003	0.008622489	0.003	0.007340553	0.001	0.0026	0.003316
A	PM25_RUNEX	0.001182	0.001823	0.001276	0.001338	0.010525	0.017087	0.018606	0.024714035	0.008837	0.006541322	0.00188	0.014384	0.021174
A	PM25_STREX	0.001975	0.002789	0.002016	0.002154	0.000208	0.000114	0.000133	5.34147E-06	9.43E-05	1.40982E-05	0.003836	6.72E-05	0.000336
A	ROG_DIURN	0.26835	0.541709	0.221107	0.258579	0.106699	0.067526	0.033927	0.000990911	0.031466	0.020632524	3.591267	0.04821	30.99292
A	ROG_HTSK	0.083501	0.156968	0.067318	0.076201	0.029577	0.018923	0.008815	0.000277007	0.008914	0.008235262	3.559039	0.013387	9.081418
A	ROG_IDLEX	0	0	0	0	0.023151	0.017296	0.030931	0.292803386	0.033214	0	0	0.240147	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.009286	0.028352	0.010231	0.013474	0.073796	0.101087	0.067756	0.047888834	0.033424	0.1357341	1.054922	0.095821	0.086389
A	ROG_RUNLS	0.211767	0.454429	0.169917	0.203112	0.157593	0.099695	0.072571	0.00228653	0.037539	0.013372663	3.722371	0.038841	0.212214
A	ROG_STREX	0.341077	0.56784	0.37384	0.477508	0.117993	0.071836	0.06656	3.67766E-06	0.056012	0.030119815	1.43267	0.046513	0.121931
A	SO2_IDLEX	0	0	0	0	8.44E-05	0.000128	0.00146	0.006976097	0.000867	0	0	0.001897	0
A	SO2_RUNEX	0.002576	0.003271	0.003391	0.004072	0.007858	0.008163	0.012283	0.016379507	0.012786	0.012831163	0.001865	0.009573	0.016424
A	SO2_STREX	0.000669	0.000868	0.000866	0.001035	0.0002	0.000114	0.000109	3.10583E-06	0.000101	5.69292E-05	0.000495	5.43E-05	0.000228
A	TOG_DIURN	0.26835	0.541709	0.221107	0.258579	0.106699	0.067526	0.033927	0.000990911	0.031466	0.020632524	0.079785	0.04821	30.99292
A	TOG_HTSK	0.083501	0.156968	0.067318	0.076201	0.029577	0.018923	0.008815	0.000277007	0.008914	0.008235262	3.559039	0.013387	9.081418
A	TOG_IDLEX	0	0	0	0	0.033059	0.023687	0.050034	0.581792813	0.045587	0	0	0.379854	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.013526	0.041328	0.014909	0.019588	0.092109	0.11899	0.089867	0.333972521	0.046122	0.310020775	1.259821	0.199994	0.11607
A	TOG_RUNLS	0.211767	0.454429	0.169917	0.203112	0.157593	0.099695	0.072571	0.00228653	0.037539	0.013372663	3.722371	0.038841	0.212214
A	TOG_STREX	0.373434	0.621711	0.409307	0.522807	0.129188	0.078652	0.072875	4.02657E-06	0.061326	0.032977406	1.557156	0.050926	0.133499
A	N2O_IDLEX	0	0	0	0	0.000579	0.001539	0.02402	0.13255086	0.013678	0	0	0.025995	0
A	N2O_RUNEX	0.004517	0.009516	0.005538	0.007173	0.036138	0.078716	0.152285	0.295493031	0.166825	0.202933551	0.038859	0.124283	0.072767
A	N2O_STREX	0.031132	0.03862	0.036088	0.038726	0.038447	0.022541	0.007862	7.71952E-07	0.010804	0.010808291	0.008671	0.004857	0.029453

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.491086	0.041086	0.253609	0.146583	0.03019	0.006225	0.012264	0.007177	0.005044	0.00188	0.003892	0.000393	0.000572

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDL	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNE	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNE	CO_RUNE	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2023	HHDT	Aggregate	Aggregate	Gasoline	4.303891	593.3265	593.3265	0	86.11225	4.056089	0	0.0028	0.00142	0	0.000834	0.005	0.031149	0.001544	0	0.000907	0.02	0.088996	2258.184	0	54.48492	0.114491	0	0.000118	0.150249	0	0.000135	0.581376	0	0.000638	0.041838	0.335524	2.939257	0.848342	0	0.000699	0.041838	0.335524	2.939257	0.045	33.28789	0	6.069294	0.022324	0	0.000539
San Mateo	2023	HHDT	Aggregate	Aggregate	Diesel	1295.72	119079.6	119079.6	0	14027.66	2.889862	47.02809	2.876808	0.025432	0.037858	0	0.008609	0.030943	0.026582	0.03957	0	0.034434	0.08841	1843.774	8291.615	0	0.001322	0.156217	0	0.290487	1.306347	0	0.028463	3.363316	0	0	0	0	0.032403	3.828879	0	0	0	0	0.197741	0.123869	46.58006	0	0.017459	0.078517	0
San Mateo	2023	HHDT	Aggregate	Aggregate	Electricity	0.738781	40.81187	0	40.81187	9.636589	0	0	0	0	0	0	0.008666	0.01378	0	0	0	0.034663	0.039372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	HHDT	Aggregate	Aggregate	Natural Ga	157.5655	10602.72	10602.72	0	1067.368	1.650268	10.1232	0	0.001897	0.012167	0	0.009	0.058575	0.002063	0.013232	0	0.036	0.167357	1522.593	8490.533	0	3.343054	25.56751	0	0.310391	1.730851	0	0.076973	0.418135	0	0	0	0	3.445109	26.1537	0	0	0	0	0.73711	17.41229	66.41256	0	0	0	0
San Mateo	2023	LDA	Aggregate	Aggregate	Gasoline	240378.8	7727537	7727537	0	1129355	0.042338	0	0.260506	0.001198	0	0.002031	0.002	0.002348	0.001303	0	0.002208	0.008	0.006708	278.3785	0	70.81713	0.002267	0	0.072534	0.004517	0	0.032351	0.008874	0	0.341649	0.087062	0.222247	1.324707	0.012948	0	0.374061	0.087062	0.222247	1.324707	0.035408	0.677749	0	3.395649	0.002752	0	0.0007
San Mateo	2023	LDA	Aggregate	Aggregate	Diesel	833.7612	19906.52	19906.52	0	3528.191	0.213764	0	0	0.014362	0	0	0.002	0.002398	0.015012	0	0	0.008	0.006851	234.8149	0	0	0.001164	0	0	0.036995	0	0	0.02507	0	0	0	0	0	0.02854	0	0	0	0	0	0.0031	0.317118	0	0	0.002225	0	0
San Mateo	2023	LDA	Aggregate	Aggregate	Electricity	16299	630419.6	0	630419.6	81240.99	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.00437	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	LDA	Aggregate	Aggregate	Plug-in Hyb	6930.414	264587.6	131767.9	132819.8	28657.26	0.003199	0	0.117199	0.000615	0	0.002065	0.002	0.001318	0.000669	0	0.002246	0.008	0.003766	134.3501	0	65.86248	0.000415	0	0.042451	0.000556	0	0.02034	0.001345	0	0.176635	0.03705	0.032896	0.392427	0.001962	0	0.193393	0.03705	0.032896	0.392427	0.019696	0.200492	0	1.37819	0.001328	0	0.000651
San Mateo	2023	LDT1	Aggregate	Aggregate	Gasoline	24557.61	732297.8	732297.8	0	111855.3	0.11638	0	0.364578	0.001649	0	0.002601	0.002	0.002829	0.001794	0	0.002828	0.008	0.008082	326.1114	0	85.73673	0.005448	0	0.099842	0.008499	0	0.037022	0.024289	0	0.513929	0.14557	0.416379	2.294434	0.035435	0	0.562687	0.14557	0.416379	2.294434	0.037022	1.217988	0	5.093009	0.003224	0	0.000848
San Mateo	2023	LDT1	Aggregate	Aggregate	Diesel	7.655601	101.9185	101.9185	0	22.20173	1.676086	0	0	0.239368	0	0	0.002	0.003332	0.250191	0	0	0.008	0.00952	418.3389	0	0	0.014739	0	0	0.065909	0	0	0.317327	0	0	0	0	0	0.361255	0	0	0	0	0	0.0031	1.688168	0	0	0.003964	0	0
San Mateo	2023	LDT1	Aggregate	Aggregate	Electricity	74.62311	2574.77	0	2574.77	357.9526	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004386	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	34.67073	1451.31	668.3078	783.0024	143.3635	0.002958	0	0.117199	0.000383	0	0.001401	0.002	0.001331	0.000416	0	0.001524	0.008	0.003802	124.2265	0	72.42832	0.000385	0	0.042531	0.000515	0	0.020414	0.001243	0	0.176635	0.024383	0.02158	0.274849	0.001814	0	0.193393	0.024383	0.02158	0.274849	0.01934	0.185385	0	1.37819	0.001228	0	0.000716
San Mateo	2023	LDT2	Aggregate	Aggregate	Gasoline	139222.3	4716888	4716888	0	668266.1	0.05408	0	0.29713	0.001207	0	0.001949	0.002	0.002716	0.001313	0	0.002119	0.008	0.007759	339.1094	0	86.14007	0.00237	0	0.075845	0.004959	0	0.034716	0.009113	0	0.347984	0.063629	0.160781	1.007437	0.013297	0	0.380999	0.063629	0.160781	1.007437	0.037748	0.693563	0	3.480515	0.003352	0	0.000852
San Mateo	2023	LDT2	Aggregate	Aggregate	Diesel	541.6894	18280.98	18280.98	0	2609.031	0.042759	0	0	0.004694	0	0	0.002	0.002739	0.004906	0	0	0.008	0.007825	314.2391	0	0	0.000594	0	0	0.049508	0	0	0.012791	0	0	0	0	0	0.014562	0	0	0	0	0	0.0031	0.121058	0	0	0.002978	0	0
San Mateo	2023	LDT2	Aggregate	Aggregate	Electricity	855.0521	26877.43	0	26877.43	4389.934	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	LDT2	Aggregate	Aggregate	Plug-in Hyb	1293.229	52235.96	24959.1	27276.86	5347.502	0.00307	0	0.117199	0.000478	0	0.001688	0.002	0.001325	0.00052	0	0.001836	0.008	0.003785	128.9014	0	78.74622	0.000399	0	0.042537	0.000535	0	0.02042	0.00129	0	0.176635	0.025663	0.02377	0.299211	0.001883	0	0.193393	0.025663	0.02377	0.299211	0.020047	0.192361	0	1.37819	0.001274	0	0.000778
San Mateo	2023	LHDT1	Aggregate	Aggregate	Gasoline	10572.08	392533.1	392533.1	0	157508.2	0.12528	0.035112	0.59784	0.00142	0	0.000253	0.002	0.0273	0.001545	0	0.000275	0.008	0.078	853.4932	117.883	26.97693	0.006321	0.111177	0.030421	0.00715	0.002997	0.050012	0.03091	0.4025	0.148384	0.036924	0.198922	2.014404	0.045104	0.587327	0.162462	0.036924	0.198922	2.014404	0.044937	0.986439	3.761565	3.318076	0.008438	0.001165	0.000267
San Mateo	2023	LHDT1	Aggregate	Aggregate	Diesel	4577.109	179686.5	179686.5	0	57574.27	1.224717	1.76206	0	0.0273	0.026942	0	0.003	0.0273	0.028534	0.02816	0	0.012	0.078	630.6192	129.0392	0	0.006697	0.005098	0	0.099354	0.02033	0	0.144187	0.10976	0	0	0	0	0.164147	0.124954	0	0	0	0	0.184546	0.371953	0.909745	0	0.005975	0.001223	0
San Mateo	2023	LHDT2	Aggregate	Aggregate	Gasoline	1231.236	43549.94	43549.94	0	18343.59	0.144	0.03443	0.605262	0.001368	0	0.000226	0.002	0.03185	0.001487	0	0.000246	0.008	0.091	963.6905	136.6851	25.60031	0.005686	0.108022	0.030291	0.008533	0.002829	0.048554	0.026382	0.394722	0.148891	0.038757	0.204501	2.085419	0.038496	0.575977	0.163017	0.038757	0.204501	2.085419	0.044989	0.878989	3.762499	3.300689	0.009527	0.001351	0.000253
San Mateo	2023	LHDT2	Aggregate	Aggregate	Diesel	1952.709	77798.97	77798.97	0	24562.62	0.883685	1.679482	0	0.023677	0.026872	0	0.003	0.03185	0.024747	0.028087	0	0.012	0.091	747.9998	204.9987	0	0.006098	0.005098	0	0.117848	0.032298	0	0.131288	0.10976	0	0	0	0	0.149463	0.124954	0	0	0	0	0.196309	0.303972	0.909745	0	0.007088	0.001942	0
San Mateo	2023	MCY	Aggregate	Aggregate	Gasoline	12536.77	73820.04	73820.04	0	25073.54	0.537143	0	0.136291	0.001883	0	0.003663	0.001	0.0042	0.002012	0	0.003894	0.004	0.012	187.6396	0	47.90752	0.151085	0	0.181429	0.037735	0	0.008068	0.98245	0	1.347169	3.555217	3.717102	3.435381	1.181139	0	1.464498	3.555217	3.717102	3.435381	0.008844	11.57445	0	7.838613	0.001855	0	0.000474
San Mateo	2023	MDV	Aggregate	Aggregate	Gasoline	78398.02	2704273	2704273	0	374408	0.068743	0	0.362909	0.001222	0	0.002069	0.002	0.002734	0.001329	0	0.002251	0.008	0.00781	408.872	0	104.3819	0.002844	0	0.089064	0.005703	0	0.037349	0.01161	0	0.437746	0.072395	0.194625	1.190411	0.016926	0	0.479274	0.072395	0.194625	1.190411	0.038092	0.747341	0	3.739188	0.004042	0	0.001032
San Mateo	2023	MDV	Aggregate	Aggregate	Diesel	1107.903	37908.13	37908.13	0	5305.818	0.04176	0	0	0.004328	0	0	0.002	0.002788	0.004524	0	0	0.008	0.007965	410.1053	0	0	0.000449	0	0	0.064612	0	0	0.009665	0	0	0	0	0	0.011002	0	0	0	0	0	0.0031	0.175602	0	0	0.003886	0	0
San Mateo	2023	MDV	Aggregate	Aggregate	Electricity	906.5115	28548.82	0	28548.82	4657.021	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	MDV	Aggregate	Aggregate	Plug-in Hyb	678.1174	27547.88	13448.47	14099.41	2804.015	0.003136	0	0.117199	0.000578	0	0.002002	0.002	0.001322	0.000628	0	0.002177	0.008	0.003776	131.6991	0	97.50736	0.000409	0	0.04268	0.00055	0	0.020553	0.001318	0	0.176635	0.027976	0.026258	0.325091	0.001923	0	0.193393	0.027976	0.026258	0.325091	0.020504	0.196536	0	1.37819	0.001302	0	0.000964
San Mateo	2023	MH	Aggregate	Aggregate	Gasoline	774.8115	7442.976	7442.976	0	77.51215	0.375927	0	0.404893	0.001719	0	0.000436	0.003	0.015756	0.001869	0	0.000474	0.012	0.045017	1947.17	0	31.89355	0.01417	0	0.038105	0.023764	0	0.042528	0.061382	0	0.16244	11.11371	0.261936	3.902966	0.089569	0	0.177852	11.11371	0.261936	3.902966	0.044861	1.492455	0	3.64337	0.01925	0	0.000315
San Mateo	2023	MH	Aggregate	Aggregate	Diesel	328.5822	3487.262	3487.262	0	32.85822	3.229197	0	0	0.055455	0	0	0.004	0.015675	0.057962	0	0	0.016	0.044785	1085.349	0	0	0.004377	0	0	0.170997	0	0	0.094242	0	0	0	0	0	0.107288	0	0	0	0	0	0.185977	0.297993	0	0	0.010284	0	0
San Mateo	2023	MHDT	Aggregate	Aggregate	Gasoline	780.1924	45998.29	45998.29	0	15610.09	0.48063	0.088485	0.45368	0.001377	0	0.000542	0.003	0.015756	0.001498	0	0.00059	0.012	0.045017	1763.945	530.3326	46.39494	0.015519	0.261469	0.049092	0.023565	0.00737	0.034436	0.076573	1.012695	0.270574	0.033571	0.274671	2.598982	0.111736	1.477722	0.296245	0.033571	0.274671	2.598982	0.044979	1.599932	15.11623	5.97113	0.017438	0.005243	0.000459
San Mateo	2023	MHDT	Aggregate	Aggregate	Diesel	4189.443	175901.2	175901.2	0	50462.49	1.42648	14.09475	1.586053	0.018782	0.040011	0	0.003	0.015983	0.019631	0.041821	0	0.012	0.045665	1155.919	2264.351	0	0.002009	0.012779	0	0.182115	0.356749	0	0.043248	0.275121	0	0	0	0	0.049234	0.313205	0	0	0	0	0.206918	0.148734	7.579195	0	0.010946	0.021442	0
San Mateo	2023	MHDT	Aggregate	Aggregate	Electricity	2.059294	44.11104	0	44.11104	25.56596	0	0	0	0	0	0	0.003	0.007991	0	0	0	0.012	0.022833	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	MHDT	Aggregate	Aggregate	Natural Ga	38.13508	1832.77	1832.77	0	342.2075	0.132951	6.609544	0	0.001228	0.018659	0	0.003	0.016094	0.001336	0.020293	0	0.012	0.045982	1008.408	5458.884	0	0.769477	17.52611	0	0.20557	1.112829	0	0.010994	0.250414	0	0	0	0	0.785307	17.88668	0	0	0	0	1.06	3.064735	35.81803	0	0	0	0
San Mateo	2023	OBUS	Aggregate	Aggregate	Gasoline	256.5607	15177.04	15177.04	0	5133.267	0.308106	0.065063	0.369453	0.001	0	0.000287	0.003	0.01568	0.001088	0	0.000312	0.012	0.044799	1742.276	373.6354	30.27704	0.009595	0.205564	0.033157	0.017281	0.005903	0.031894	0.045405	0.746279	0.163878	0.026481	0.113352	1.902307	0.066255	1.088969	0.179425	0.026481	0.113352	1.902307	0.044919	0.985887	5.774707	3.460301	0.017224	0.003694	0.000299
San Mateo	2023	OBUS	Aggregate	Aggregate	Diesel	1051.799	74746.95	74746.95	0	10288.18	0.843686	5.779548	1.508936	0.009565	0.003378	0	0.003	0.017376	0.009998	0.003531	0	0.012	0.049647	1250.895	1225.784	0	0.000947	0.013995	0	0.197079	0.193123	0	0.020398	0.301313	0	0	0	0	0.023222	0.343022	0	0	0	0	0.217631	0.094166	5.629794	0	0.011845	0.011607	0
San Mateo	2023	OBUS	Aggregate	Aggregate	Natural Ga	6.660994	415.1452	415.1452	0	59.28285	0.232948	1.556882	0	0.000856	0.003435	0	0.003	0.016148	0.000931	0.003736	0	0.012	0.046137	1029.36	1194.248	0	0.766347	4.477255	0	0.209842	0.243455	0	0.01095	0.063971	0	0	0	0	0.782113	4.569367	0	0	0	0	1.06	3.19115	6.306096	0	0	0	0
San Mateo	2023	SBUS	Aggregate	Aggregate	Gasoline	62.11288	3411.923	3411.923	0	248.4515	0.897656	0.923288	0.643317	0.001164	0	0.000721	0.002	0.015721	0.001266	0	0.000784	0.008	0.044917	797.3184	2541.99	62.30631	0.021738	2.445799	0.089765	0.041731	0.084017	0.05658	0.106456	10.59413	0.521132	0.139121	0.406864	2.094566	0.15534	15.45893	0.570574	0.139121	0.406864	2.094566	0.045	2.707181	81.95312	13.2835	0.007882	0.02513	0.000616
San Mateo	2023	SBUS	Aggregate	Aggregate	Diesel	168.8118	3793.041	3793.041	0	2444.395	5.00314	23.87172	0.437587	0.023953	0.025817	0	0.003	0.015721	0.025036	0.026985	0	0.012	0.044917	1149.738	2246.853	0	0.003233	0.008312	0	0.181142	0.353993	0	0.069615	0.178964	0	0	0	0	0.079252	0.203737	0	0	0	0	0.134019	0.208594	4.289616	0	0.010887	0.021276	0
San Mateo	2023	SBUS	Aggregate	Aggregate	Electricity	0.041475	0.481131	0	0.481131	0.600564	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.012	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	SBUS	Aggregate	Aggregate	Natural Ga	6.023036	153.4041	153.4041	0	87.21356	0.556332	5.264261	0	0.003378	0.011516	0	0.003	0.015721	0.003674	0.012524	0	0.012	0.044917	1258.036	4080.42	0	3.408583	15.17474	0	0.256459	0.83182	0	0.048702	0.216817	0	0	0	0	3.478709	15.48694	0	0	0	0	1.06	11.51682	21.10371	0	0	0	0
San Mateo	2023	UBUS	Aggregate	Aggregate	Gasoline	61.26278	4165.676	4165.676	0	245.0511	0.037017	0	0.578233	0.000989	0	0.000127	0.002073	0.032333	0.001076	0	0.000139	0.00829	0.092379	1025.682	0	41.23868	0.002259	0	0.053565	0.004956	0	0.077039	0.006631	0	0.206281	0.070589	0.114555	0.693653	0.009677	0	0.225852	0.070589	0.114555	0.693653	0.045	0.556154	0	5.887541	0.01014	0	0.000408
San Mateo	2023	UBUS	Aggregate	Aggregate	Diesel	341.8463	28540.62	28540.62	0	1367.385	2.897593	0	0	0.007619	0	0	0.007913	0.0385	0.007964	0	0	0.031652	0.11	1451.453	0	0	0.007311	0	0	0.228677	0	0	0.157395	0	0	0	0	0	0.17982	0	0	0	0	0	0.122644	0.192989	0	0	0.013753	0	0
San Mateo	2023	UBUS	Aggregate	Aggregate	Electricity	2.018703	15.3193	0	15.3193	8.074811	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	UBUS	Aggregate	Aggregate	Natural Ga	34.94319	1199.611	1199.611	0	139.7728	0.063405	0	0	0.000296	0	0	0.008789	0.0385	0.000309	0	0	0.035157	0.11	1349.38	0	0	4.445831	0	0	0.27508	0	0	0.063522	0	0	0	0	0	4.537297	0	0	0	0	0	0.97	52.53671	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2024	HHDT	Aggregate	Aggregate	Gasoline	4.38411	570.1519	570.1519	0	87.71727	4.048188	0	0.002195	0.001412	0	0.000781	0.005	0.031087	0.001536	0	0.000849	0.02	0.08882	2242.616	0	52.51813	0.114927	0	9.83E-05	0.151409	0	0.000106	0.580011	0	0.000534	0.038164	0.298441	2.621146	0.84635	0	0.000584	0.038164	0.298441	2.621146	0.045	33.76595	0	5.064106	0.022171	0	0.000519
San Mateo	2024	HHDT	Aggregate	Aggregate	Diesel	1314.625	119489.1	119489.1	0	14359.46	2.758523	46.67792	2.948259	0.025016	0.035273	0	0.008607	0.030666	0.026147	0.036868	0	0.034429	0.087616	1815.874	8218.84	0	0.001264	0.157243	0	0.286092	1.294882	0	0.027205	3.385404	0	0	0	0	0.030971	3.854024	0	0	0	0	0.19939	0.118425	47.19978	0	0.017195	0.077828	0
San Mateo	2024	HHDT	Aggregate	Aggregate	Electricity	4.22305	364.2879	0	364.2879	41.8342	0	0	0	0	0	0	0.008582	0.016829	0	0	0	0.034329	0.048082	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	HHDT	Aggregate	Aggregate	Natural Ga	168.5495	11187.83	11187.83	0	1132.175	1.492552	9.520927	0	0.001788	0.012243	0	0.009	0.059336	0.001944	0.013315	0	0.036	0.169533	1498.953	8407.645	0	3.081874	24.13874	0	0.305571	1.713953	0	0.069062	0.389544	0	0	0	0	3.173794	24.68622	0	0	0	0	0.729125	16.65962	64.84398	0	0	0	0
San Mateo	2024	LDA	Aggregate	Aggregate	Gasoline	239419.7	7454000	7454000	0	1124271	0.038087	0	0.247841	0.001162	0	0.001964	0.002	0.002348	0.001263	0	0.002136	0.008	0.006709	273.8201	0	69.41898	0.002038	0	0.068169	0.004236	0	0.031309	0.007847	0	0.318313	0.083377	0.213338	1.277502	0.01145	0	0.348512	0.083377	0.213338	1.277502	0.036176	0.637775	0	3.199778	0.002707	0	0.000686
San Mateo	2024	LDA	Aggregate	Aggregate	Diesel	770.443	17557.03	17557.03	0	3247.138	0.188593	0	0	0.01271	0	0	0.002	0.002404	0.013285	0	0	0.008	0.006869	232.7779	0	0	0.001054	0	0	0.036674	0	0	0.022696	0	0	0	0	0	0.025838	0	0	0	0	0	0.0031	0.304144	0	0	0.002206	0	0
San Mateo	2024	LDA	Aggregate	Aggregate	Electricity	17934.86	689392.1	0	689392.1	89072.05	0	0	0	0	0	0	0.002	0.00153	0	0	0	0.008	0.004371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LDA	Aggregate	Aggregate	Plug-in Hyb	7500.936	275231.1	133857.4	141373.7	31016.37	0.003125	0	0.117199	0.000577	0	0.001988	0.002	0.001324	0.000628	0	0.002162	0.008	0.003783	131.2036	0	65.11921	0.000402	0	0.042117	0.000534	0	0.020029	0.001313	0	0.176635	0.037635	0.03379	0.393665	0.001916	0	0.193393	0.037635	0.03379	0.393665	0.0194	0.1958	0	1.37819	0.001297	0	0.000644
San Mateo	2024	LDT1	Aggregate	Aggregate	Gasoline	25010.05	728708.6	728708.6	0	114230.1	0.101175	0	0.337766	0.001531	0	0.002433	0.002	0.002823	0.001665	0	0.002647	0.008	0.008066	320.3175	0	83.57506	0.004741	0	0.091509	0.007635	0	0.035447	0.020943	0	0.464929	0.13393	0.378571	2.119435	0.030557	0	0.509038	0.13393	0.378571	2.119435	0.03751	1.098083	0	4.642443	0.003167	0	0.000826
San Mateo	2024	LDT1	Aggregate	Aggregate	Diesel	6.907674	87.50597	87.50597	0	19.69868	1.656035	0	0	0.236493	0	0	0.002	0.003323	0.247186	0	0	0.008	0.009495	417.763	0	0	0.014564	0	0	0.065819	0	0	0.313559	0	0	0	0	0	0.356966	0	0	0	0	0	0.0031	1.668132	0	0	0.003959	0	0
San Mateo	2024	LDT1	Aggregate	Aggregate	Electricity	91.59654	3278.131	0	3278.131	443.5442	0	0	0	0	0	0	0.002	0.001533	0	0	0	0.008	0.004381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LDT1	Aggregate	Aggregate	Plug-in Hyb	54.25069	2174.893	971.2907	1203.602	224.3266	0.002869	0	0.117199	0.000364	0	0.001376	0.002	0.001338	0.000396	0	0.001496	0.008	0.003823	120.4792	0	71.41059	0.00037	0	0.042142	0.000491	0	0.020052	0.001206	0	0.176635	0.024003	0.020809	0.269408	0.00176	0	0.193393	0.024003	0.020809	0.269408	0.018757	0.179795	0	1.37819	0.001191	0	0.000706
San Mateo	2024	LDT2	Aggregate	Aggregate	Gasoline	149536	4914901	4914901	0	718035.6	0.047837	0	0.275637	0.001155	0	0.001881	0.002	0.002719	0.001256	0	0.002046	0.008	0.007768	332.6183	0	84.15109	0.002154	0	0.070859	0.004613	0	0.03323	0.008159	0	0.321903	0.059457	0.151098	0.950815	0.011906	0	0.352443	0.059457	0.151098	0.950815	0.038479	0.65082	0	3.265171	0.003288	0	0.000832
San Mateo	2024	LDT2	Aggregate	Aggregate	Diesel	582.1748	18954.02	18954.02	0	2798.233	0.039602	0	0	0.004525	0	0	0.002	0.002742	0.00473	0	0	0.008	0.007835	308.9591	0	0	0.000583	0	0	0.048677	0	0	0.012549	0	0	0	0	0	0.014287	0	0	0	0	0	0.0031	0.119356	0	0	0.002928	0	0
San Mateo	2024	LDT2	Aggregate	Aggregate	Electricity	1250.957	37598.89	0	37598.89	6394.245	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LDT2	Aggregate	Aggregate	Plug-in Hyb	1631.391	62724.85	29203.5	33521.35	6745.803	0.002991	0	0.117199	0.000445	0	0.001613	0.002	0.001331	0.000484	0	0.001754	0.008	0.003803	125.6019	0	77.89253	0.000385	0	0.042141	0.000512	0	0.020051	0.001257	0	0.176635	0.025289	0.023061	0.291714	0.001834	0	0.193393	0.025289	0.023061	0.291714	0.019538	0.18744	0	1.37819	0.001242	0	0.00077
San Mateo	2024	LHDT1	Aggregate	Aggregate	Gasoline	11110.29	401258.4	401258.4	0	165526.8	0.108054	0.033789	0.571117	0.001381	0	0.000231	0.002	0.0273	0.001502	0	0.000252	0.008	0.078	836.8766	116.5649	26.73629	0.005557	0.107506	0.028745	0.006197	0.00292	0.048292	0.02703	0.387394	0.139437	0.033968	0.18488	1.873078	0.039443	0.565284	0.152666	0.033968	0.18488	1.873078	0.044949	0.932434	3.763967	3.345475	0.008273	0.001152	0.000264
San Mateo	2024	LHDT1	Aggregate	Aggregate	Diesel	4996.692	191551.4	191551.4	0	62852.09	1.027551	1.628055	0	0.024469	0.026784	0	0.003	0.0273	0.025575	0.027995	0	0.012	0.078	625.1858	126.8159	0	0.006142	0.005098	0	0.098498	0.01998	0	0.132227	0.10976	0	0	0	0	0.150532	0.124954	0	0	0	0	0.191039	0.331515	0.909745	0	0.005924	0.001202	0
San Mateo	2024	LHDT1	Aggregate	Aggregate	Electricity	56.88552	3530.642	0	3530.642	794.6546	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	LHDT2	Aggregate	Aggregate	Gasoline	1289.385	44551.76	44551.76	0	19209.92	0.122228	0.032802	0.574333	0.001317	0	0.000203	0.002	0.03185	0.001432	0	0.00022	0.008	0.091	944.5417	135.0667	25.31696	0.004775	0.10351	0.028373	0.007371	0.002735	0.046606	0.02185	0.376166	0.138457	0.035403	0.189345	1.948594	0.031883	0.5489	0.151593	0.035403	0.189345	1.948594	0.04499	0.81417	3.766002	3.313222	0.009338	0.001335	0.00025
San Mateo	2024	LHDT2	Aggregate	Aggregate	Diesel	2173.662	83732.44	83732.44	0	27341.93	0.758817	1.552593	0	0.021905	0.026813	0	0.003	0.03185	0.022896	0.028026	0	0.012	0.091	738.893	201.7788	0	0.00575	0.005098	0	0.116413	0.03179	0	0.123794	0.10976	0	0	0	0	0.140931	0.124954	0	0	0	0	0.200587	0.280863	0.909745	0	0.007001	0.001912	0
San Mateo	2024	LHDT2	Aggregate	Aggregate	Electricity	14.72375	865.8383	0	865.8383	194.8979	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	MCY	Aggregate	Aggregate	Gasoline	13263.89	76675.37	76675.37	0	26527.78	0.518793	0	0.126152	0.001881	0	0.003482	0.001	0.0042	0.002012	0	0.003708	0.004	0.012	186.9256	0	46.09461	0.145168	0	0.173078	0.036969	0	0.007549	0.930365	0	1.275208	3.551353	3.70872	3.28364	1.125127	0	1.386524	3.551353	3.70872	3.28364	0.008901	11.0461	0	7.750076	0.001848	0	0.000456
San Mateo	2024	MDV	Aggregate	Aggregate	Gasoline	84173.19	2823183	2823183	0	402441.6	0.058434	0	0.328591	0.001156	0	0.001958	0.002	0.002737	0.001258	0	0.002129	0.008	0.007819	401.2877	0	101.9843	0.002492	0	0.08141	0.005161	0	0.035386	0.009941	0	0.393656	0.066904	0.180975	1.115277	0.014501	0	0.431003	0.066904	0.180975	1.115277	0.038746	0.686178	0	3.45873	0.003967	0	0.001008
San Mateo	2024	MDV	Aggregate	Aggregate	Diesel	1163.667	38157.5	38157.5	0	5552.1	0.037261	0	0	0.004001	0	0	0.002	0.002798	0.004182	0	0	0.008	0.007995	404.1827	0	0	0.000421	0	0	0.063679	0	0	0.009074	0	0	0	0	0	0.01033	0	0	0	0	0	0.0031	0.171126	0	0	0.00383	0	0
San Mateo	2024	MDV	Aggregate	Aggregate	Electricity	1347.217	40547.66	0	40547.66	6889.415	0	0	0	0	0	0	0.002	0.001525	0	0	0	0.008	0.004357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	MDV	Aggregate	Aggregate	Plug-in Hyb	894.3672	35015.17	16467.11	18548.06	3698.208	0.003021	0	0.117199	0.000509	0	0.001829	0.002	0.00133	0.000553	0	0.001989	0.008	0.0038	126.8709	0	95.82464	0.000391	0	0.042289	0.000521	0	0.020188	0.00127	0	0.176635	0.028115	0.024943	0.310017	0.001853	0	0.193393	0.028115	0.024943	0.310017	0.019752	0.189334	0	1.37819	0.001254	0	0.000947
San Mateo	2024	MH	Aggregate	Aggregate	Gasoline	801.8479	7786.339	7786.339	0	80.21686	0.31412	0	0.403344	0.001626	0	0.000414	0.003	0.015756	0.001768	0	0.00045	0.012	0.045017	1946.554	0	31.59379	0.011734	0	0.037106	0.021154	0	0.043344	0.049091	0	0.154768	9.691274	0.229932	3.473479	0.071633	0	0.169451	9.691274	0.229932	3.473479	0.044918	1.137792	0	3.470688	0.019244	0	0.000312
San Mateo	2024	MH	Aggregate	Aggregate	Diesel	356.6509	3693.518	3693.518	0	35.66509	3.096233	0	0	0.049578	0	0	0.004	0.015675	0.05182	0	0	0.016	0.044785	1085.795	0	0	0.004225	0	0	0.171067	0	0	0.090961	0	0	0	0	0	0.103553	0	0	0	0	0	0.190835	0.284597	0	0	0.010288	0	0
San Mateo	2024	MHDT	Aggregate	Aggregate	Gasoline	803.5707	46997.14	46997.14	0	16077.84	0.392706	0.088662	0.440106	0.001362	0	0.000524	0.003	0.015756	0.001481	0	0.00057	0.012	0.045017	1738.217	524.0271	45.30167	0.012668	0.264735	0.046933	0.020191	0.007577	0.034475	0.061766	1.015329	0.254725	0.030087	0.246862	2.353612	0.090129	1.481566	0.278892	0.030087	0.246862	2.353612	0.044986	1.274083	15.14683	5.603458	0.017184	0.005181	0.000448
San Mateo	2024	MHDT	Aggregate	Aggregate	Diesel	4233.233	177028	177028	0	51051.04	1.307284	13.59602	1.607655	0.016259	0.033511	0	0.003	0.015983	0.016994	0.035026	0	0.012	0.045664	1151.344	2248.491	0	0.001748	0.011985	0	0.181395	0.354251	0	0.037635	0.258043	0	0	0	0	0.042845	0.293763	0	0	0	0	0.208724	0.13444	7.547588	0	0.010903	0.021292	0
San Mateo	2024	MHDT	Aggregate	Aggregate	Electricity	14.28233	871.0875	0	871.0875	206.3119	0	0	0	0	0	0	0.003	0.007951	0	0	0	0.012	0.022718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	MHDT	Aggregate	Aggregate	Natural Ga	40.94682	1935.863	1935.863	0	369.2827	0.126627	6.578363	0	0.00126	0.019031	0	0.003	0.016095	0.001371	0.020698	0	0.012	0.045986	1003.333	5452.112	0	0.773152	17.27614	0	0.204536	1.111449	0	0.011047	0.246842	0	0	0	0	0.789058	17.63157	0	0	0	0	1.06	3.066853	36.67055	0	0	0	0
San Mateo	2024	OBUS	Aggregate	Aggregate	Gasoline	254.1967	14438.68	14438.68	0	5085.967	0.276687	0.065109	0.370674	0.00102	0	0.000283	0.003	0.01568	0.00111	0	0.000308	0.012	0.044799	1723.101	370.7574	29.97676	0.008478	0.205512	0.032818	0.016007	0.005919	0.031879	0.039535	0.746984	0.162428	0.025788	0.11331	1.92621	0.05769	1.089998	0.177838	0.025788	0.11331	1.92621	0.044947	0.847792	5.778931	3.396221	0.017035	0.003665	0.000296
San Mateo	2024	OBUS	Aggregate	Aggregate	Diesel	1077.493	75002.36	75002.36	0	10539.7	0.835238	5.759378	1.510482	0.009497	0.003284	0	0.003	0.017376	0.009927	0.003433	0	0.012	0.049647	1241.911	1216.11	0	0.000936	0.013985	0	0.195664	0.191599	0	0.020157	0.301093	0	0	0	0	0.022947	0.342772	0	0	0	0	0.217754	0.093918	5.631167	0	0.01176	0.011516	0
San Mateo	2024	OBUS	Aggregate	Aggregate	Electricity	0.873406	79.58076	0	79.58076	17.47512	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	OBUS	Aggregate	Aggregate	Natural Ga	7.797528	492.5585	492.5585	0	69.398	0.196374	1.542446	0	0.001031	0.003779	0	0.003	0.016148	0.001121	0.00411	0	0.012	0.046137	1012.331	1198.177	0	0.786409	4.299019	0	0.20637	0.244256	0	0.011236	0.061424	0	0	0	0	0.802588	4.387464	0	0	0	0	1.06	3.2452	7.082462	0	0	0	0
San Mateo	2024	SBUS	Aggregate	Aggregate	Gasoline	66.88141	3561.549	3561.549	0	267.5256	0.835223	0.92382	0.639831	0.001152	0	0.000724	0.002	0.015721	0.001252	0	0.000787	0.008	0.044917	789.442	2519.886	61.00487	0.01963	2.446302	0.087874	0.039135	0.085207	0.056875	0.09611	10.60191	0.509805	0.133122	0.399591	2.076885	0.140243	15.47029	0.558173	0.133122	0.399591	2.076885	0.045	2.460202	82.00038	12.72081	0.007804	0.024912	0.000603
San Mateo	2024	SBUS	Aggregate	Aggregate	Diesel	168.96	3777.202	3777.202	0	2446.541	4.696712	23.22062	0.459253	0.022409	0.023726	0	0.003	0.015721	0.023422	0.024798	0	0.012	0.044917	1144.311	2236.593	0	0.003112	0.008208	0	0.180287	0.352376	0	0.067	0.176716	0	0	0	0	0.076275	0.201177	0	0	0	0	0.139187	0.202372	4.417573	0	0.010836	0.021179	0
San Mateo	2024	SBUS	Aggregate	Aggregate	Electricity	0.90883	36.62057	0	36.62057	8.140217	0	0	0	0	0	0	0.002304	0.00786	0	0	0	0.009214	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	SBUS	Aggregate	Aggregate	Natural Ga	6.288614	158.6097	158.6097	0	91.05913	0.535215	5.251389	0	0.003378	0.011823	0	0.003	0.015721	0.003674	0.012858	0	0.012	0.044917	1247.354	4088.672	0	3.35032	15.01581	0	0.254281	0.833502	0	0.047869	0.214546	0	0	0	0	3.419247	15.32474	0	0	0	0	1.06	11.24264	21.79598	0	0	0	0
San Mateo	2024	UBUS	Aggregate	Aggregate	Gasoline	61.44418	4178.01	4178.01	0	245.7767	0.036235	0	0.500251	0.001083	0	0.000148	0.002073	0.032333	0.001178	0	0.000161	0.00829	0.092379	1002.317	0	40.2745	0.00211	0	0.046538	0.004853	0	0.069658	0.006117	0	0.175043	0.050072	0.096281	0.505947	0.008925	0	0.19165	0.050072	0.096281	0.505947	0.045	0.556675	0	6.169996	0.009909	0	0.000398
San Mateo	2024	UBUS	Aggregate	Aggregate	Diesel	277.5893	21477.78	21477.78	0	1110.357	0.375565	0	0	0.006827	0	0	0.008097	0.0385	0.007136	0	0	0.032388	0.11	1223.727	0	0	0.003145	0	0	0.192799	0	0	0.067719	0	0	0	0	0	0.077093	0	0	0	0	0	0.22	0.077195	0	0	0.011595	0	0
San Mateo	2024	UBUS	Aggregate	Aggregate	Electricity	37.0794	3851.303	0	3851.303	148.3176	0	0	0	0	0	0	0.007366	0.01925	0	0	0	0.029466	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2024	UBUS	Aggregate	Aggregate	Natural Ga	65.26114	4514.573	4514.573	0	261.0446	0.055424	0	0	0.000272	0	0	0.007741	0.0385	0.000285	0	0	0.030963	0.11	1262.656	0	0	4.100531	0	0	0.257401	0	0	0.058588	0	0	0	0	0	4.184893	0	0	0	0	0	0.97	46.50633	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNE	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNE	CO_RUNE	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2026	HHDT	Aggregate	Aggregate	Gasoline	4.283898	504.3899	504.3899	0	85.71223	3.767128	0	0.001928	0.001363	0	0.000634	0.005	0.031039	0.001482	0	0.00069	0.02	0.088682	2206.809	0	51.03869	0.109196	0	9.88E-05	0.147264	0	0.0001	0.53602	0	0.000536	0.029322	0.212948	1.905434	0.782159	0	0.000587	0.029322	0.212948	1.905434	0.045	33.33714	0	4.679779	0.021817	0	0.000505
San Mateo	2026	HHDT	Aggregate	Aggregate	Diesel	1339.121	119591.7	119591.7	0	14836.49	2.513316	46.04181	3.042683	0.024334	0.030988	0	0.008607	0.030272	0.025434	0.032389	0	0.034426	0.086492	1752.991	8044.886	0	0.00116	0.158921	0	0.276185	1.267475	0	0.024964	3.421536	0	0	0	0	0.02842	3.895158	0	0	0	0	0.202556	0.108407	48.25142	0	0.0166	0.07618	0
San Mateo	2026	HHDT	Aggregate	Aggregate	Electricity	17.24092	1568.579	0	1568.579	167.6097	0	0	0	0	0	0	0.008499	0.017277	0	0	0	0.033994	0.049364	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	HHDT	Aggregate	Aggregate	Natural Ga	190.6077	12388.44	12388.44	0	1253.654	1.199642	8.304539	0	0.001614	0.012208	0	0.009	0.06089	0.001755	0.013277	0	0.036	0.17397	1452.495	8216.396	0	2.557538	21.22587	0	0.296101	1.674966	0	0.054701	0.334996	0	0	0	0	2.630844	21.69869	0	0	0	0	0.713158	15.13386	61.6539	0	0	0	0
San Mateo	2026	LDA	Aggregate	Aggregate	Gasoline	238617.8	6969047	6969047	0	1119592	0.031815	0	0.225592	0.00108	0	0.001846	0.002	0.002349	0.001174	0	0.002007	0.008	0.00671	264.3788	0	66.66342	0.001674	0	0.060063	0.003806	0	0.029206	0.006262	0	0.277135	0.077036	0.201162	1.205717	0.009138	0	0.303428	0.077036	0.201162	1.205717	0.037625	0.572674	0	2.857953	0.002614	0	0.000659
San Mateo	2026	LDA	Aggregate	Aggregate	Diesel	645.0664	13511.27	13511.27	0	2704.797	0.144803	0	0	0.010068	0	0	0.002	0.002414	0.010523	0	0	0.008	0.006897	228.1946	0	0	0.000882	0	0	0.035952	0	0	0.01898	0	0	0	0	0	0.021607	0	0	0	0	0	0.0031	0.280265	0	0	0.002162	0	0
San Mateo	2026	LDA	Aggregate	Aggregate	Electricity	20627.64	751657.4	0	751657.4	101606	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	LDA	Aggregate	Aggregate	Plug-in Hyb	8434.471	284060.2	132539.9	151520.3	34876.54	0.002998	0	0.117199	0.00051	0	0.001839	0.002	0.001334	0.000555	0	0.002	0.008	0.003813	125.8756	0	63.67241	0.00038	0	0.041451	0.000497	0	0.019409	0.00126	0	0.176635	0.037598	0.034095	0.388535	0.001838	0	0.193393	0.037598	0.034095	0.388535	0.018859	0.187853	0	1.37819	0.001244	0	0.000629
San Mateo	2026	LDT1	Aggregate	Aggregate	Gasoline	25945.79	717326.6	717326.6	0	118989.9	0.078016	0	0.293254	0.001334	0	0.002155	0.002	0.002818	0.001451	0	0.002344	0.008	0.008052	309.0343	0	79.57832	0.003639	0	0.077166	0.006309	0	0.032586	0.015756	0	0.382671	0.113653	0.314838	1.794906	0.022991	0	0.418976	0.113653	0.314838	1.794906	0.038437	0.911226	0	3.898361	0.003055	0	0.000787
San Mateo	2026	LDT1	Aggregate	Aggregate	Diesel	5.731399	66.09906	66.09906	0	15.81841	1.607443	0	0	0.22953	0	0	0.002	0.003303	0.239908	0	0	0.008	0.009438	416.0554	0	0	0.01414	0	0	0.06555	0	0	0.304424	0	0	0	0	0	0.346566	0	0	0	0	0	0.0031	1.619672	0	0	0.003942	0	0
San Mateo	2026	LDT1	Aggregate	Aggregate	Electricity	141.9822	5160.147	0	5160.147	697.0716	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	LDT1	Aggregate	Aggregate	Plug-in Hyb	104.7443	3837.146	1635.987	2201.159	433.1175	0.002739	0	0.117199	0.00033	0	0.001308	0.002	0.001349	0.000359	0	0.001423	0.008	0.003854	115.021	0	69.49428	0.000347	0	0.041425	0.000453	0	0.019385	0.001151	0	0.176635	0.02329	0.019927	0.265458	0.00168	0	0.193393	0.02329	0.019927	0.265458	0.017907	0.171654	0	1.37819	0.001137	0	0.000687
San Mateo	2026	LDT2	Aggregate	Aggregate	Gasoline	169697.7	5206694	5206694	0	813724.2	0.039564	0	0.246415	0.001061	0	0.001756	0.002	0.002732	0.001154	0	0.001909	0.008	0.007806	320.9048	0	80.65979	0.001836	0	0.062615	0.004145	0	0.031058	0.006772	0	0.280198	0.053684	0.140038	0.877766	0.009881	0	0.306782	0.053684	0.140038	0.877766	0.039596	0.591205	0	2.920622	0.003172	0	0.000797
San Mateo	2026	LDT2	Aggregate	Aggregate	Diesel	655.1696	19853.42	19853.42	0	3139.478	0.033548	0	0	0.004079	0	0	0.002	0.002751	0.004264	0	0	0.008	0.00786	298.5166	0	0	0.000555	0	0	0.047031	0	0	0.011952	0	0	0	0	0	0.013607	0	0	0	0	0	0.0031	0.11634	0	0	0.002829	0	0
San Mateo	2026	LDT2	Aggregate	Aggregate	Electricity	2139.962	58794.02	0	58794.02	10836.18	0	0	0	0	0	0	0.002	0.001528	0	0	0	0.008	0.004364	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	LDT2	Aggregate	Aggregate	Plug-in Hyb	2330.737	81093.05	36145.09	44947.96	9637.596	0.002864	0	0.117199	0.000395	0	0.001497	0.002	0.001342	0.00043	0	0.001628	0.008	0.003835	120.2461	0	76.22509	0.000362	0	0.041388	0.000473	0	0.01935	0.001204	0	0.176635	0.024917	0.022518	0.286085	0.001756	0	0.193393	0.024917	0.022518	0.286085	0.018711	0.179452	0	1.37819	0.001189	0	0.000754
San Mateo	2026	LHDT1	Aggregate	Aggregate	Gasoline	12091.27	409379.7	409379.7	0	180141.9	0.082078	0.031581	0.525207	0.001324	0	0.000197	0.002	0.0273	0.00144	0	0.000214	0.008	0.078	811.9901	114.3649	26.27179	0.004327	0.101211	0.026073	0.004771	0.00278	0.045144	0.020676	0.362188	0.125413	0.029477	0.164217	1.658906	0.03017	0.528503	0.137311	0.029477	0.164217	1.658906	0.044975	0.843514	3.767862	3.376982	0.008027	0.001131	0.00026
San Mateo	2026	LHDT1	Aggregate	Aggregate	Diesel	5774.561	207453.3	207453.3	0	72636.71	0.759826	1.425846	0	0.020834	0.026593	0	0.003	0.0273	0.021776	0.027795	0	0.012	0.078	618.0427	123.4649	0	0.005378	0.005098	0	0.097373	0.019452	0	0.11579	0.10976	0	0	0	0	0.131819	0.124954	0	0	0	0	0.199971	0.278839	0.909745	0	0.005856	0.00117	0
San Mateo	2026	LHDT1	Aggregate	Aggregate	Electricity	302.9677	15691.66	0	15691.66	4239.881	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	LHDT2	Aggregate	Aggregate	Gasoline	1390.219	45322.23	45322.23	0	20712.2	0.089949	0.030134	0.521013	0.001251	0	0.000168	0.002	0.03185	0.001361	0	0.000183	0.008	0.091	916.2773	132.4121	24.82523	0.00347	0.095994	0.025248	0.005641	0.002576	0.043086	0.015364	0.345713	0.121706	0.030304	0.166922	1.734893	0.02242	0.504463	0.133253	0.030304	0.166922	1.734893	0.044997	0.721895	3.771186	3.317909	0.009058	0.001309	0.000245
San Mateo	2026	LHDT2	Aggregate	Aggregate	Diesel	2589.799	92139.39	92139.39	0	32576.42	0.594292	1.367929	0	0.019861	0.026777	0	0.003	0.03185	0.020759	0.027987	0	0.012	0.091	726.711	197.0583	0	0.00529	0.005098	0	0.114494	0.031047	0	0.113884	0.10976	0	0	0	0	0.129649	0.124954	0	0	0	0	0.206359	0.253765	0.909745	0	0.006886	0.001867	0
San Mateo	2026	LHDT2	Aggregate	Aggregate	Electricity	77.23784	3810.55	0	3810.55	1024.59	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	MCY	Aggregate	Aggregate	Gasoline	14692.86	80438.96	80438.96	0	29385.71	0.495123	0	0.110033	0.001908	0	0.003479	0.001	0.0042	0.002043	0	0.003711	0.004	0.012	186.0574	0	43.36877	0.137447	0	0.160662	0.036006	0	0.006719	0.86185	0	1.169727	3.545629	3.697544	3.067415	1.052189	0	1.272239	3.545629	3.697544	3.067415	0.008984	10.37381	0	7.649946	0.001839	0	0.000429
San Mateo	2026	MDV	Aggregate	Aggregate	Gasoline	95415.04	2995462	2995462	0	456021.9	0.045043	0	0.280293	0.001049	0	0.001787	0.002	0.002752	0.001141	0	0.001943	0.008	0.007862	387.4402	0	97.80051	0.002014	0	0.069417	0.004439	0	0.032516	0.007733	0	0.326682	0.058677	0.159655	0.988966	0.011284	0	0.357675	0.058677	0.159655	0.988966	0.039732	0.608979	0	3.043816	0.00383	0	0.000967
San Mateo	2026	MDV	Aggregate	Aggregate	Diesel	1264.364	38163.09	38163.09	0	5993.722	0.029639	0	0	0.00336	0	0	0.002	0.002815	0.003512	0	0	0.008	0.008044	391.9984	0	0	0.000371	0	0	0.06176	0	0	0.007978	0	0	0	0	0	0.009083	0	0	0	0	0	0.0031	0.162819	0	0	0.003714	0	0
San Mateo	2026	MDV	Aggregate	Aggregate	Electricity	2288.176	62843.93	0	62843.93	11585.67	0	0	0	0	0	0	0.002	0.001528	0	0	0	0.008	0.004365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	MDV	Aggregate	Aggregate	Plug-in Hyb	1352.288	48514.48	21600.3	26914.18	5591.711	0.00286	0	0.117199	0.000424	0	0.001613	0.002	0.001343	0.000461	0	0.001754	0.008	0.003836	120.1141	0	93.09493	0.000363	0	0.041542	0.000476	0	0.019493	0.001202	0	0.176635	0.027524	0.02439	0.302424	0.001754	0	0.193393	0.027524	0.02439	0.302424	0.0187	0.179255	0	1.37819	0.001187	0	0.00092
San Mateo	2026	MH	Aggregate	Aggregate	Gasoline	860.1629	8288.685	8288.685	0	86.0507	0.23256	0	0.397384	0.001512	0	0.000384	0.003	0.015756	0.001645	0	0.000418	0.012	0.045017	1945.826	0	31.10578	0.008668	0	0.035239	0.017644	0	0.044254	0.033949	0	0.14164	7.387206	0.177323	2.704624	0.049538	0	0.155079	7.387206	0.177323	2.704624	0.044967	0.720477	0	3.190918	0.019236	0	0.000308
San Mateo	2026	MH	Aggregate	Aggregate	Diesel	411.7686	4016.353	4016.353	0	41.17686	2.902322	0	0	0.040701	0	0	0.004	0.015675	0.042542	0	0	0.016	0.044785	1086.443	0	0	0.004006	0	0	0.17117	0	0	0.086257	0	0	0	0	0	0.098197	0	0	0	0	0	0.198004	0.264984	0	0	0.010295	0	0
San Mateo	2026	MHDT	Aggregate	Aggregate	Gasoline	848.5573	48169.43	48169.43	0	16977.94	0.269412	0.081996	0.401399	0.001349	0	0.000495	0.003	0.015756	0.001467	0	0.000539	0.012	0.045017	1697.118	512.7637	43.45365	0.008779	0.269455	0.043465	0.015276	0.007246	0.033229	0.041527	1.019578	0.229834	0.024222	0.200008	1.911848	0.060596	1.487766	0.251639	0.024222	0.200008	1.911848	0.044997	0.830138	15.19618	5.005077	0.016778	0.005069	0.00043
San Mateo	2026	MHDT	Aggregate	Aggregate	Diesel	4345.03	177809.3	177809.3	0	52490.37	1.079543	12.71716	1.615228	0.011982	0.022721	0	0.003	0.015982	0.012524	0.023749	0	0.012	0.045664	1138.556	2209.16	0	0.001294	0.010675	0	0.17938	0.348054	0	0.027853	0.229832	0	0	0	0	0.031709	0.261646	0	0	0	0	0.211826	0.108771	7.505293	0	0.010781	0.020919	0
San Mateo	2026	MHDT	Aggregate	Aggregate	Electricity	76.01194	4276.512	0	4276.512	1058.544	0	0	0	0	0	0	0.003	0.007951	0	0	0	0.012	0.022717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	MHDT	Aggregate	Aggregate	Natural Ga	48.05658	2179.843	2179.843	0	442.254	0.112977	6.480284	0	0.001327	0.019663	0	0.003	0.016091	0.001443	0.021385	0	0.012	0.045974	991.4871	5407.178	0	0.778786	16.68583	0	0.202121	1.102289	0	0.011127	0.238408	0	0	0	0	0.794808	17.02911	0	0	0	0	1.06	3.063718	38.15558	0	0	0	0
San Mateo	2026	OBUS	Aggregate	Aggregate	Gasoline	250.2122	13078.36	13078.36	0	5006.245	0.228578	0.061817	0.359747	0.001067	0	0.000285	0.003	0.01568	0.00116	0	0.00031	0.012	0.044799	1687.446	365.3109	29.42229	0.006927	0.20465	0.03203	0.013867	0.005591	0.030955	0.031574	0.747709	0.159032	0.025716	0.122353	2.090543	0.046073	1.091056	0.17412	0.025716	0.122353	2.090543	0.044974	0.662703	5.783272	3.284676	0.016682	0.003611	0.000291
San Mateo	2026	OBUS	Aggregate	Aggregate	Diesel	1145.492	75611.47	75611.47	0	11233.17	0.7922	5.412165	1.482498	0.00906	0.003089	0	0.003	0.017403	0.00947	0.003228	0	0.012	0.049724	1214.431	1202.439	0	0.000896	0.014277	0	0.191334	0.189445	0	0.019283	0.307371	0	0	0	0	0.021953	0.349919	0	0	0	0	0.21794	0.09136	5.733335	0	0.0115	0.011386	0
San Mateo	2026	OBUS	Aggregate	Aggregate	Electricity	3.59381	297.3898	0	297.3898	71.90495	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	OBUS	Aggregate	Aggregate	Natural Ga	10.41211	669.454	669.454	0	92.66776	0.14486	1.520375	0	0.001277	0.004306	0	0.003	0.016148	0.001389	0.004683	0	0.012	0.046137	977.2919	1192.33	0	0.814665	4.026517	0	0.199227	0.243064	0	0.01164	0.057531	0	0	0	0	0.831426	4.109356	0	0	0	0	1.06	3.321327	8.269436	0	0	0	0
San Mateo	2026	SBUS	Aggregate	Aggregate	Gasoline	75.66977	3792.283	3792.283	0	302.6791	0.689408	0.850076	0.614008	0.001104	0	0.000723	0.002	0.015721	0.001201	0	0.000787	0.008	0.044917	775.7798	2481.854	58.67483	0.015917	2.447247	0.082067	0.033238	0.080267	0.056021	0.077973	10.62297	0.474628	0.118813	0.369995	1.975658	0.113778	15.50102	0.519658	0.118813	0.369995	1.975658	0.045	1.98957	82.12826	11.72979	0.007669	0.024536	0.00058
San Mateo	2026	SBUS	Aggregate	Aggregate	Diesel	168.4764	3737.054	3737.054	0	2439.538	4.092097	21.8241	0.494851	0.019631	0.01977	0	0.003	0.015721	0.020519	0.020664	0	0.012	0.044917	1133.73	2214.261	0	0.002862	0.008051	0	0.17862	0.348858	0	0.06162	0.173331	0	0	0	0	0.07015	0.197325	0	0	0	0	0.149335	0.189386	4.685291	0	0.010736	0.020968	0
San Mateo	2026	SBUS	Aggregate	Aggregate	Electricity	3.281397	127.7057	0	127.7057	29.50964	0	0	0	0	0	0	0.002326	0.00786	0	0	0	0.009303	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	SBUS	Aggregate	Aggregate	Natural Ga	6.807777	168.2676	168.2676	0	98.5766	0.49789	5.22911	0	0.003378	0.012354	0	0.003	0.015721	0.003674	0.013436	0	0.012	0.044917	1228.474	4102.954	0	3.247338	14.74074	0	0.250432	0.836414	0	0.046398	0.210616	0	0	0	0	3.314147	15.044	0	0	0	0	1.06	10.75802	22.99417	0	0	0	0
San Mateo	2026	UBUS	Aggregate	Aggregate	Gasoline	61.80696	4202.678	4202.678	0	247.2278	0.033837	0	0.38239	0.001186	0	0.000163	0.002073	0.032333	0.00129	0	0.000177	0.00829	0.092379	954.5156	0	39.0065	0.001796	0	0.036113	0.004527	0	0.057552	0.005058	0	0.130834	0.029473	0.090867	0.345962	0.007381	0	0.143246	0.029473	0.090867	0.345962	0.045	0.558823	0	6.549286	0.009436	0	0.000386
San Mateo	2026	UBUS	Aggregate	Aggregate	Diesel	278.8478	21575.87	21575.87	0	1115.391	0.37554	0	0	0.006827	0	0	0.008097	0.0385	0.007135	0	0	0.032386	0.11	1223.487	0	0	0.003145	0	0	0.192761	0	0	0.067715	0	0	0	0	0	0.077089	0	0	0	0	0	0.22	0.07719	0	0	0.011593	0	0
San Mateo	2026	UBUS	Aggregate	Aggregate	Electricity	37.55556	3889.774	0	3889.774	150.2222	0	0	0	0	0	0	0.007371	0.01925	0	0	0	0.029483	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2026	UBUS	Aggregate	Aggregate	Natural Ga	65.76966	4554.21	4554.21	0	263.0787	0.055441	0	0	0.000272	0	0	0.007743	0.0385	0.000285	0	0	0.030972	0.11	1262.837	0	0	4.101249	0	0	0.257438	0	0	0.058599	0	0	0	0	0	4.185626	0	0	0	0	0	0.97	46.51887	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.004876	0.002752	0.015174	0.260570765	0.006674	0	0	0.099951	0
A	CH4_RUNEX	0.00147	0.003596	0.001789	0.001929	0.004565	0.004563	0.010113	0.237798538	0.007849	0.547982794	0.137447	0.078908	0.007147
A	CH4_STREX	0.05457	0.076579	0.061326	0.066545	0.018274	0.009813	0.010398	5.18139E-07	0.009775	0.005027297	0.160662	0.008654	0.023834
A	CO_IDLEX	0	0	0	0	0.197696	0.142598	0.667039	4.672583456	0.493821	0	0	2.494693	0
A	CO_RUNEX	0.504864	0.900911	0.576749	0.584767	0.637388	0.397103	0.283977	1.62073339	0.198517	6.307852368	10.37381	1.285953	0.571804
A	CO_STREX	2.580125	3.866142	2.854122	2.912716	2.366896	1.289604	1.197364	0.024542796	1.002433	0.911733484	7.649946	1.236929	2.158186
A	CO2_NBIO_IDLEX	0	0	0	0	8.154171	13.03136	145.0466	754.991996	90.29537	0	0	205.1295	0
A	CO2_NBIO_RUNEX	234.6275	305.8239	314.274	375.6298	728.2361	767.925	1231.984	1706.416765	1277.632	1056.629394	186.0574	943.7962	1665.324
A	CO2_NBIO_STREX	61.05638	79.06975	79.26249	94.15775	18.41366	9.649058	10.39541	0.267669097	8.979233	5.430139432	43.36877	6.187375	21.03848
A	NOX_IDLEX	0	0	0	0	0.033521	0.067267	0.783967	3.869342809	0.37984	0	0	1.315808	0
A	NOX_RUNEX	0.028002	0.077203	0.038553	0.043306	0.302327	0.416461	0.882726	2.36722241	0.702522	0.248295515	0.495123	2.299027	1.103968
A	NOX_STREX	0.203894	0.290879	0.240815	0.268107	0.368113	0.202507	1.290686	2.76213714	1.124979	0.053232937	0.110033	0.485334	0.268772
A	PM10_IDLEX	0	0	0	0	0.000624	0.00136	0.001468	0.002808654	0.000228	0	0	0.001245	0
A	PM10_PMBW	0.006389	0.008003	0.007709	0.007732	0.077033	0.089773	0.045111	0.094149874	0.048888	0.142309149	0.012	0.044551	0.044942
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009312	0.010609	0.012	0.034512562	0.012	0.050739122	0.004	0.010018	0.013306
A	PM10_RUNEX	0.001058	0.001457	0.001142	0.001137	0.008074	0.013976	0.009898	0.022857949	0.008166	0.004694812	0.002043	0.01046	0.014993
A	PM10_STREX	0.001841	0.002327	0.001874	0.00187	0.00015	7.11E-05	0.000129	3.61771E-06	9.46E-05	2.46942E-05	0.003711	8.29E-05	0.000283
A	PM25_IDLEX	0	0	0	0	0.000597	0.001301	0.001404	0.00268138	0.000218	0	0	0.00119	0
A	PM25_PMBW	0.002236	0.002801	0.002698	0.002706	0.026961	0.03142	0.015789	0.032952456	0.017111	0.049808202	0.0042	0.015593	0.01573
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002328	0.002652	0.003	0.008628141	0.003	0.01268478	0.001	0.002504	0.003326
A	PM25_RUNEX	0.000974	0.00134	0.001051	0.001047	0.00769	0.013355	0.009458	0.021862868	0.007806	0.004485812	0.001908	0.009983	0.014303
A	PM25_STREX	0.001692	0.002139	0.001723	0.001719	0.000138	6.54E-05	0.000118	3.32635E-06	8.69E-05	2.27054E-05	0.003479	7.63E-05	0.00026
A	ROG_DIURN	0.231163	0.387878	0.178687	0.197772	0.078042	0.045261	0.022859	0.000499446	0.031887	0.012040456	3.067415	0.052084	18.28548
A	ROG_HTSK	0.069559	0.112653	0.052457	0.056161	0.02066	0.011779	0.005795	0.000153777	0.007848	0.004102948	3.545629	0.012529	4.996356
A	ROG_IDLEX	0	0	0	0	0.019505	0.014353	0.026424	0.284254533	0.032905	0	0	0.290727	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.005519	0.015593	0.006632	0.007481	0.051358	0.079206	0.030018	0.029343314	0.020955	0.051110999	0.86185	0.068212	0.051022
A	ROG_RUNLS	0.179864	0.311906	0.136348	0.152219	0.115098	0.064879	0.047848	0.001116795	0.03734	0.012649682	3.697544	0.039017	0.119933
A	ROG_STREX	0.251385	0.379657	0.27433	0.312946	0.087901	0.047305	0.054983	2.80939E-06	0.048534	0.018213489	1.169727	0.05005	0.095799
A	SO2_IDLEX	0	0	0	0	7.95E-05	0.000125	0.001341	0.00624192	0.00085	0	0	0.001878	0
A	SO2_RUNEX	0.002319	0.003023	0.003106	0.003712	0.007116	0.007397	0.011725	0.014891114	0.012132	0.008467826	0.001839	0.008844	0.016318
A	SO2_STREX	0.000604	0.000782	0.000784	0.000931	0.000182	9.54E-05	0.000103	2.64618E-06	8.88E-05	5.36825E-05	0.000429	6.12E-05	0.000208
A	TOG_DIURN	0.231163	0.387878	0.178687	0.197772	0.078042	0.045261	0.022859	0.000499446	0.031887	0.012040456	0.073065	0.052084	18.28548
A	TOG_HTSK	0.069559	0.112653	0.052457	0.056161	0.02066	0.011779	0.005795	0.000153777	0.007848	0.004102948	3.545629	0.012529	4.996356
A	TOG_IDLEX	0	0	0	0	0.027671	0.019233	0.045339	0.572218149	0.043685	0	0	0.455917	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.008044	0.022744	0.009664	0.010885	0.06276	0.091751	0.044268	0.271424917	0.031443	0.606515491	1.052189	0.159904	0.06542
A	TOG_RUNLS	0.179864	0.311906	0.136348	0.152219	0.115098	0.064879	0.047848	0.001116795	0.03734	0.012649682	3.697544	0.039017	0.119933
A	TOG_STREX	0.275235	0.415677	0.300356	0.342637	0.09624	0.051793	0.0602	3.07593E-06	0.053139	0.019941478	1.272239	0.054799	0.104888
A	N2O_IDLEX	0	0	0	0	0.000568	0.001576	0.022142	0.12338657	0.013469	0	0	0.024577	0
A	N2O_RUNEX	0.003386	0.006238	0.004203	0.004985	0.035024	0.076484	0.142284	0.274308294	0.164871	0.156342404	0.036006	0.106794	0.067755
A	N2O_STREX	0.026514	0.032345	0.030405	0.031171	0.031641	0.016747	0.007949	5.2547E-07	0.009447	0.008011873	0.006719	0.005908	0.029931

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.430608	0.03901	0.288195	0.168896	0.033969	0.007587	0.012483	0.007199	0.004815	0.001838	0.00432	0.00042	0.000661

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2030
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN. PHEV calculated based on total VMT.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	NOx_RUNE	NOx_IDLEX	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STF	PM2.5_PM	PM2.5_PM	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNE	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNE	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2030	HHDT	Aggregate	Aggregate	Gasoline	3.582613	348.8502	348.8502	0	71.68092	3.309536	0	0.000636	0.001281	0	0.000408	0.005	0.031258	0.001393	0	0.000444	0.02	0.08931	2124.112	0	48.3003	0.102341	0	7.44E-05	0.139473	0	4.21E-05	0.479172	0	0.000403	0.0158	0.095238	1.146877	0.699207	0	0.000441	0.0158	0.095238	1.146877	0.045	32.18037	0	4.037713	0.020999	0	0.000477
San Mateo	2030	HHDT	Aggregate	Aggregate	Diesel	1338.439	117080	117080	0	15181.71	2.116368	45.39119	3.044846	0.023283	0.023862	0	0.008615	0.030087	0.024335	0.024941	0	0.03446	0.085963	1627.718	7731.446	0	0.000972	0.162527	0	0.256448	1.218092	0	0.020928	3.499162	0	0	0	0	0.023825	3.98353	0	0	0	0	0.207747	0.090912	50.23689	0	0.015414	0.073212	0
San Mateo	2030	HHDT	Aggregate	Aggregate	Electricity	84.88807	7748.726	0	7748.726	800.5398	0	0	0	0	0	0	0.00845	0.017769	0	0	0	0.033801	0.050769	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	HHDT	Aggregate	Aggregate	Natural Ga	216.9868	13750.35	13750.35	0	1391.47	0.831786	6.734329	0	0.001446	0.012428	0	0.009	0.062879	0.001573	0.013516	0	0.036	0.179654	1389.59	7977.287	0	1.838591	17.41083	0	0.283277	1.626222	0	0.037223	0.267421	0	0	0	0	1.888896	17.79029	0	0	0	0	0.693529	12.98287	57.90215	0	0	0	0
San Mateo	2030	LDA	Aggregate	Aggregate	Gasoline	237797.8	6358120	6358120	0	1114767	0.025015	0	0.198441	0.00084	0	0.0015	0.002	0.002348	0.000914	0	0.001631	0.008	0.006709	250.3795	0	62.47074	0.001264	0	0.048749	0.003327	0	0.026593	0.004452	0	0.219797	0.064961	0.182842	1.100035	0.006497	0	0.24065	0.064961	0.182842	1.100035	0.039859	0.49519	0	2.387223	0.002475	0	0.000618
San Mateo	2030	LDA	Aggregate	Aggregate	Diesel	401.2092	8094.892	8094.892	0	1723.63	0.081629	0	0	0.005614	0	0	0.002	0.002417	0.005867	0	0	0.008	0.006907	217.7249	0	0	0.000572	0	0	0.034303	0	0	0.012309	0	0	0	0	0	0.014013	0	0	0	0	0	0.0031	0.228322	0	0	0.002063	0	0
San Mateo	2030	LDA	Aggregate	Aggregate	Electricity	25244.08	809588.1	0	809588.1	122638.4	0	0	0	0	0	0	0.002	0.001533	0	0	0	0.008	0.004381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LDA	Aggregate	Aggregate	Plug-in Hyb	9770.495	287561.1	127243.4	160317.7	40401	0.002843	0	0.117199	0.000375	0	0.001465	0.002	0.001348	0.000407	0	0.001593	0.008	0.00385	119.3761	0	61.72963	0.000352	0	0.040464	0.000449	0	0.018494	0.001195	0	0.176635	0.03873	0.045962	0.467089	0.001743	0	0.193393	0.03873	0.045962	0.467089	0.018225	0.17816	0	1.37819	0.00118	0	0.00061
San Mateo	2030	LDT1	Aggregate	Aggregate	Gasoline	27717.91	705667.7	705667.7	0	127669.4	0.047693	0	0.23518	0.000977	0	0.001648	0.002	0.002822	0.001063	0	0.001793	0.008	0.008064	291.8441	0	73.503	0.00227	0	0.057547	0.004614	0	0.028888	0.009274	0	0.271146	0.085215	0.246386	1.458315	0.013533	0	0.29687	0.085215	0.246386	1.458315	0.039865	0.675828	0	2.884818	0.002885	0	0.000727
San Mateo	2030	LDT1	Aggregate	Aggregate	Diesel	0.204115	6.131891	6.131891	0	1.004394	0.025448	0	0	0.003365	0	0	0.002	0.002682	0.003517	0	0	0.008	0.007662	360.704	0	0	0.000511	0	0	0.056829	0	0	0.011001	0	0	0	0	0	0.012524	0	0	0	0	0	0.0031	0.101404	0	0	0.003418	0	0
San Mateo	2030	LDT1	Aggregate	Aggregate	Electricity	315.4332	10759.94	0	10759.94	1561.79	0	0	0	0	0	0	0.002	0.00153	0	0	0	0.008	0.004372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LDT1	Aggregate	Aggregate	Plug-in Hyb	248.8694	7950.15	3286.476	4663.674	1029.075	0.002656	0	0.117199	0.000235	0	0.000982	0.002	0.001357	0.000256	0	0.001068	0.008	0.003878	111.5238	0	67.77418	0.000329	0	0.040538	0.000421	0	0.018562	0.001116	0	0.176635	0.022993	0.019942	0.267154	0.001629	0	0.193393	0.022993	0.019942	0.267154	0.017362	0.166441	0	1.37819	0.001103	0	0.00067
San Mateo	2030	LDT2	Aggregate	Aggregate	Gasoline	206077.5	5643289	5643289	0	980667.9	0.031039	0	0.220236	0.000827	0	0.001417	0.002	0.002768	0.000899	0	0.001541	0.008	0.007907	305.2696	0	76.05021	0.001503	0	0.052526	0.003653	0	0.029181	0.005296	0	0.229711	0.045237	0.123667	0.765395	0.007728	0	0.251505	0.045237	0.123667	0.765395	0.040897	0.539909	0	2.545867	0.003018	0	0.000752
San Mateo	2030	LDT2	Aggregate	Aggregate	Diesel	779.569	21227.36	21227.36	0	3709.708	0.028723	0	0	0.003778	0	0	0.002	0.002772	0.003949	0	0	0.008	0.00792	283.3526	0	0	0.000535	0	0	0.044642	0	0	0.011525	0	0	0	0	0	0.013121	0	0	0	0	0	0.0031	0.115181	0	0	0.002685	0	0
San Mateo	2030	LDT2	Aggregate	Aggregate	Electricity	4330.718	103349.1	0	103349.1	21553.59	0	0	0	0	0	0	0.002	0.001531	0	0	0	0.008	0.004374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LDT2	Aggregate	Aggregate	Plug-in Hyb	3821.263	114216.7	48686.66	65530.03	15800.92	0.002739	0	0.117199	0.000291	0	0.001179	0.002	0.001354	0.000317	0	0.001283	0.008	0.003869	114.9986	0	74.21213	0.000338	0	0.040354	0.00043	0	0.018393	0.001151	0	0.176635	0.026073	0.02498	0.30357	0.00168	0	0.193393	0.026073	0.02498	0.30357	0.017899	0.171627	0	1.37819	0.001137	0	0.000734
San Mateo	2030	LHDT1	Aggregate	Aggregate	Gasoline	13418.94	401266.7	401266.7	0	199922.2	0.04859	0.028514	0.462341	0.001251	0	0.000149	0.002	0.0273	0.001361	0	0.000162	0.008	0.078	782.2571	111.312	25.41512	0.002474	0.092233	0.022399	0.003012	0.002564	0.040565	0.010703	0.327199	0.105404	0.022577	0.12944	1.313798	0.015618	0.477448	0.115404	0.022577	0.12944	1.313798	0.045	0.67997	3.773798	3.355298	0.007733	0.0011	0.000251
San Mateo	2030	LHDT1	Aggregate	Aggregate	Diesel	6950.283	217964.5	217964.5	0	87425.82	0.484943	1.179571	0	0.017739	0.02636	0	0.003	0.0273	0.018541	0.027552	0	0.012	0.078	610.5039	119.3947	0	0.004593	0.005098	0	0.096185	0.018811	0	0.098884	0.10976	0	0	0	0	0.112573	0.124954	0	0	0	0	0.209503	0.232836	0.909745	0	0.005785	0.001131	0
San Mateo	2030	LHDT1	Aggregate	Aggregate	Electricity	1651.837	70758.49	0	70758.49	23140.54	0	0	0	0	0	0	0.002	0.01365	0	0	0	0.008	0.039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	LHDT2	Aggregate	Aggregate	Gasoline	1516.427	44034.41	44034.41	0	22592.5	0.0535	0.026469	0.446387	0.001188	0	0.000128	0.002	0.03185	0.001292	0	0.000139	0.008	0.091	883.1295	128.7905	24.14624	0.002097	0.08544	0.021117	0.003676	0.002338	0.038045	0.00861	0.303836	0.099505	0.023317	0.135292	1.428649	0.012564	0.443356	0.108945	0.023317	0.135292	1.428649	0.045	0.63201	3.776933	3.316614	0.008731	0.001273	0.000239
San Mateo	2030	LHDT2	Aggregate	Aggregate	Diesel	3226.044	98642.37	98642.37	0	40579.57	0.436422	1.156649	0	0.01874	0.026765	0	0.003	0.03185	0.019587	0.027975	0	0.012	0.091	713.7283	191.5832	0	0.004866	0.005098	0	0.112448	0.030184	0	0.104751	0.10976	0	0	0	0	0.119253	0.124954	0	0	0	0	0.212304	0.238694	0.909745	0	0.006763	0.001815	0
San Mateo	2030	LHDT2	Aggregate	Aggregate	Electricity	416.7471	17085.75	0	17085.75	5526.66	0	0	0	0	0	0	0.002	0.015925	0	0	0	0.008	0.0455	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	MCY	Aggregate	Aggregate	Gasoline	17265.42	85331.57	85331.57	0	34530.84	0.471636	0	0.087961	0.00193	0	0.003402	0.001	0.0042	0.002069	0	0.003639	0.004	0.012	185.2558	0	39.68002	0.129549	0	0.143907	0.035104	0	0.005584	0.790266	0	1.025021	3.535952	3.670486	2.694632	0.977152	0	1.115488	3.535952	3.670486	2.694632	0.00908	9.714966	0	7.581403	0.001831	0	0.000392
San Mateo	2030	MDV	Aggregate	Aggregate	Gasoline	115764.2	3248131	3248131	0	549832.1	0.032414	0	0.238074	0.000811	0	0.001423	0.002	0.002792	0.000882	0	0.001547	0.008	0.007976	368.7759	0	92.22249	0.00155	0	0.05581	0.003744	0	0.030164	0.005553	0	0.251972	0.048156	0.134906	0.832269	0.008103	0	0.275878	0.048156	0.134906	0.832269	0.040906	0.545181	0	2.607134	0.003646	0	0.000912
San Mateo	2030	MDV	Aggregate	Aggregate	Diesel	1415.877	38111.74	38111.74	0	6658.508	0.017624	0	0	0.002054	0	0	0.002	0.002838	0.002147	0	0	0.008	0.008109	372.2787	0	0	0.000277	0	0	0.058653	0	0	0.005968	0	0	0	0	0	0.006794	0	0	0	0	0	0.0031	0.147116	0	0	0.003528	0	0
San Mateo	2030	MDV	Aggregate	Aggregate	Electricity	4329.635	102706.8	0	102706.8	21508.26	0	0	0	0	0	0	0.002	0.001532	0	0	0	0.008	0.004377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	MDV	Aggregate	Aggregate	Plug-in Hyb	2286.849	70894.89	30074.66	40820.23	9456.121	0.002725	0	0.117199	0.000297	0	0.001215	0.002	0.001355	0.000323	0	0.001322	0.008	0.003872	114.4453	0	90.22943	0.000338	0	0.040515	0.000432	0	0.018541	0.001145	0	0.176635	0.026805	0.026275	0.314563	0.001671	0	0.193393	0.026805	0.026275	0.314563	0.017817	0.170801	0	1.37819	0.001131	0	0.000892
San Mateo	2030	MH	Aggregate	Aggregate	Gasoline	975.2695	8905.399	8905.399	0	97.56596	0.146497	0	0.389106	0.001397	0	0.00035	0.003	0.015756	0.001519	0	0.00038	0.012	0.045017	1945.035	0	30.49184	0.005338	0	0.03291	0.013993	0	0.045078	0.017368	0	0.125455	4.324204	0.104731	1.656784	0.025343	0	0.137357	4.324204	0.104731	1.656784	0.045	0.266588	0	2.838247	0.019229	0	0.000301
San Mateo	2030	MH	Aggregate	Aggregate	Diesel	518.1906	4498.521	4498.521	0	51.81906	2.677361	0	0	0.030184	0	0	0.004	0.015675	0.031549	0	0	0.016	0.044785	1087.256	0	0	0.003786	0	0	0.171298	0	0	0.081505	0	0	0	0	0	0.092788	0	0	0	0	0	0.206555	0.243761	0	0	0.010302	0	0
San Mateo	2030	MHDT	Aggregate	Aggregate	Gasoline	896.2067	46600.57	46600.57	0	17931.3	0.14535	0.071332	0.336727	0.001349	0	0.000468	0.003	0.015756	0.001468	0	0.000509	0.012	0.045017	1641.475	495.3697	40.83701	0.005139	0.272865	0.039358	0.010032	0.006541	0.029695	0.022413	1.024632	0.19997	0.016844	0.142325	1.402001	0.032705	1.49514	0.218942	0.016844	0.142325	1.402001	0.045	0.405969	15.25491	4.210824	0.016228	0.004897	0.000404
San Mateo	2030	MHDT	Aggregate	Aggregate	Diesel	4347.362	170380.4	170380.4	0	52605.86	0.755775	11.60663	1.523653	0.006958	0.010527	0	0.003	0.015983	0.007273	0.011003	0	0.012	0.045667	1112.069	2136.504	0	0.000749	0.00921	0	0.175207	0.336607	0	0.016126	0.198289	0	0	0	0	0.018358	0.225736	0	0	0	0	0.215702	0.077124	7.484208	0	0.010531	0.020231	0
San Mateo	2030	MHDT	Aggregate	Aggregate	Electricity	446.3324	23740.44	0	23740.44	6143.241	0	0	0	0	0	0	0.003	0.007953	0	0	0	0.012	0.022724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	MHDT	Aggregate	Aggregate	Natural Ga	59.81429	2526.343	2526.343	0	572.8236	0.0963	6.310343	0	0.001402	0.020216	0	0.003	0.016078	0.001525	0.021987	0	0.012	0.045938	974.2403	5301.669	0	0.781312	15.85967	0	0.198605	1.08078	0	0.011163	0.226603	0	0	0	0	0.797386	16.18596	0	0	0	0	1.06	3.055339	39.52768	0	0	0	0
San Mateo	2030	OBUS	Aggregate	Aggregate	Gasoline	235.2431	10564.99	10564.99	0	4706.745	0.160976	0.055683	0.334188	0.001132	0	0.000289	0.003	0.01568	0.001231	0	0.000315	0.012	0.044799	1631.402	356.5246	28.55452	0.004957	0.201951	0.030859	0.010543	0.00494	0.028192	0.021402	0.748646	0.154359	0.024573	0.126962	2.196095	0.03123	1.092423	0.169003	0.024573	0.126962	2.196095	0.045	0.436972	5.788883	3.119712	0.016128	0.003525	0.000282
San Mateo	2030	OBUS	Aggregate	Aggregate	Diesel	1265.064	76747.17	76747.17	0	12416.27	0.731147	4.662626	1.324481	0.008334	0.002706	0	0.003	0.017521	0.008711	0.002828	0	0.012	0.050059	1157.144	1158.301	0	0.000821	0.014331	0	0.182309	0.182491	0	0.017683	0.308549	0	0	0	0	0.020131	0.351259	0	0	0	0	0.218276	0.087625	5.772448	0	0.010957	0.010968	0
San Mateo	2030	OBUS	Aggregate	Aggregate	Electricity	18.67716	1366.971	0	1366.971	373.6926	0	0	0	0	0	0	0.003	0.00784	0	0	0	0.012	0.022399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	OBUS	Aggregate	Aggregate	Natural Ga	14.94448	957.8955	957.8955	0	133.0059	0.101418	1.499098	0	0.001484	0.004813	0	0.003	0.016148	0.001614	0.005235	0	0.012	0.046137	931.1349	1169.497	0	0.838494	3.763815	0	0.189818	0.23841	0	0.01198	0.053777	0	0	0	0	0.855745	3.84125	0	0	0	0	1.06	3.385525	9.413723	0	0	0	0
San Mateo	2030	SBUS	Aggregate	Aggregate	Gasoline	87.98822	4038.39	4038.39	0	351.9529	0.489617	0.750616	0.559502	0.001063	0	0.000722	0.002	0.015721	0.001156	0	0.000786	0.008	0.044917	757.0149	2429.667	55.27111	0.010391	2.44431	0.075405	0.024791	0.073975	0.052746	0.050694	10.64152	0.434086	0.098112	0.31801	1.752705	0.073972	15.52808	0.47527	0.098112	0.31801	1.752705	0.045	1.308566	82.24088	10.22191	0.007484	0.02402	0.000546
San Mateo	2030	SBUS	Aggregate	Aggregate	Diesel	160.7253	3531.519	3531.519	0	2327.302	2.868955	18.37325	0.553036	0.014701	0.012669	0	0.003	0.015721	0.015365	0.013242	0	0.012	0.044917	1113.173	2158.09	0	0.002281	0.007956	0	0.175381	0.340008	0	0.049109	0.1713	0	0	0	0	0.055907	0.195012	0	0	0	0	0.169646	0.15856	5.305748	0	0.010541	0.020436	0
San Mateo	2030	SBUS	Aggregate	Aggregate	Electricity	17.84997	651.998	0	651.998	163.1263	0	0	0	0	0	0	0.00236	0.00786	0	0	0	0.009438	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	SBUS	Aggregate	Aggregate	Natural Ga	7.671522	180.9535	180.9535	0	111.0836	0.443878	5.198476	0	0.003378	0.013085	0	0.003	0.015721	0.003674	0.014231	0	0.012	0.044917	1201.138	4122.528	0	3.098317	14.36251	0	0.24486	0.840404	0	0.044269	0.205212	0	0	0	0	3.16206	14.658	0	0	0	0	1.06	10.05674	24.64166	0	0	0	0
San Mateo	2030	UBUS	Aggregate	Aggregate	Gasoline	62.5174	4249.774	4249.774	0	250.0696	0.035638	0	0.310547	0.001201	0	0.000164	0.002072	0.032329	0.001307	0	0.000179	0.008288	0.09237	932.2834	0	37.52663	0.001497	0	0.032416	0.004454	0	0.04913	0.004138	0	0.115554	0.024606	0.097267	0.356985	0.006038	0	0.126517	0.024606	0.097267	0.356985	0.045	0.559001	0	5.953718	0.009217	0	0.000371
San Mateo	2030	UBUS	Aggregate	Aggregate	Diesel	238.4518	18140.33	18140.33	0	953.8071	0.376197	0	0	0.006839	0	0	0.008109	0.0385	0.007148	0	0	0.032436	0.11	1228.547	0	0	0.003149	0	0	0.193558	0	0	0.067807	0	0	0	0	0	0.077193	0	0	0	0	0	0.22	0.077324	0	0	0.011641	0	0
San Mateo	2030	UBUS	Aggregate	Aggregate	Electricity	72.67394	6853.165	0	6853.165	290.6957	0	0	0	0	0	0	0.007651	0.01925	0	0	0	0.030604	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2030	UBUS	Aggregate	Aggregate	Natural Ga	75.54888	5381.015	5381.015	0	302.1955	0.055771	0	0	0.000273	0	0	0.007786	0.0385	0.000286	0	0	0.031145	0.11	1266.418	0	0	4.115508	0	0	0.258168	0	0	0.058802	0	0	0	0	0	4.200177	0	0	0	0	0	0.97	46.76788	0	0	0	0	0

CalEEMod EMFAC2021 Emission Factors Input

Season	EmissionType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
A	CH4_IDLEX	0	0	0	0	0.0041	0.002311	0.015963	0.229026242	0.006914	0	0	0.110559	0
A	CH4_RUNEX	0.001091	0.002215	0.001451	0.001466	0.00289	0.003582	0.009624	0.18305022	0.010248	0.641431362	0.129549	0.072674	0.004817
A	CH4_STREX	0.043749	0.056722	0.051039	0.052888	0.014423	0.007552	0.009135	3.05733E-07	0.008239	0.004511552	0.143907	0.008986	0.021494
A	CO_IDLEX	0	0	0	0	0.183464	0.137123	0.628743	4.574443284	0.49944	0	0	2.802822	0
A	CO_RUNEX	0.428969	0.660194	0.521738	0.516941	0.468992	0.321574	0.163527	1.442396346	0.162707	7.377393404	9.714966	0.912101	0.258927
A	CO_STREX	2.12334	2.838305	2.46486	2.462348	2.160461	1.186135	0.977377	0.016590448	0.832894	0.828623357	7.581403	1.218105	1.853708
A	CO2_NBIO_IDLEX	0	0	0	0	7.483418	12.87527	130.0816	692.3906648	88.86546	0	0	200.5332	0
A	CO2_NBIO_RUNEX	218.1367	285.5306	296.1322	352.6558	647.7805	684.09	1103.524	1514.609777	1192.98	954.9035774	185.2558	857.525	1657.153
A	CO2_NBIO_STREX	56.37559	72.5759	74.14137	87.76861	16.36469	8.635527	9.478708	0.198459779	7.623425	5.222861474	39.68002	6.586443	19.91475
A	NOX_IDLEX	0	0	0	0	0.027637	0.059703	0.658867	3.566245811	0.336592	0	0	1.035723	0
A	NOX_RUNEX	0.021508	0.04649	0.029936	0.03068	0.181449	0.284207	0.558221	1.874181967	0.646065	0.210138516	0.471636	1.45062	0.995886
A	NOX_STREX	0.176589	0.231426	0.213197	0.224713	0.2977	0.159643	1.115695	2.649753409	1.022028	0.043221096	0.087961	0.50246	0.254132
A	PM10_IDLEX	0	0	0	0	0.000617	0.001429	0.000636	0.00208163	0.000207	0	0	0.000758	0
A	PM10_PMBW	0.006346	0.007963	0.007767	0.007787	0.074001	0.086134	0.043306	0.093281284	0.048975	0.156110891	0.012	0.043175	0.04494
A	PM10_PMTW	0.008	0.008	0.008	0.008	0.009264	0.01047	0.012	0.034539384	0.012	0.061827696	0.004	0.009879	0.013342
A	PM10_RUNEX	0.0008	0.001038	0.000883	0.000858	0.006648	0.01245	0.005391	0.020667549	0.00762	0.003949707	0.002069	0.007092	0.011597
A	PM10_STREX	0.001471	0.001765	0.001499	0.001469	0.000104	4.97E-05	0.000118	1.82388E-06	8.4E-05	2.48573E-05	0.003639	9.36E-05	0.000248
A	PM25_IDLEX	0	0	0	0	0.00059	0.001367	0.000608	0.001985313	0.000198	0	0	0.000723	0
A	PM25_PMBW	0.002221	0.002787	0.002718	0.002725	0.0259	0.030147	0.015157	0.032648449	0.017141	0.054638812	0.0042	0.015111	0.015729
A	PM25_PMTW	0.002	0.002	0.002	0.002	0.002316	0.002617	0.003	0.008634846	0.003	0.015456924	0.001	0.00247	0.003336
A	PM25_RUNEX	0.000736	0.000955	0.000812	0.00079	0.006331	0.011898	0.005147	0.019767546	0.007285	0.003772866	0.00193	0.006762	0.011058
A	PM25_STREX	0.001353	0.001623	0.001378	0.001351	9.57E-05	4.57E-05	0.000109	1.67699E-06	7.72E-05	2.28554E-05	0.003402	8.61E-05	0.000228
A	ROG_DIURN	0.208006	0.310821	0.155511	0.165232	0.056781	0.034294	0.016264	0.000235524	0.029304	0.012421079	2.694632	0.052216	10.81642
A	ROG_HTSK	0.057819	0.083701	0.043823	0.045503	0.014537	0.008339	0.00391	6.49199E-05	0.00656	0.003424597	3.535952	0.011692	2.824213
A	ROG_IDLEX	0	0	0	0	0.016598	0.012899	0.023221	0.271787437	0.032176	0	0	0.326882	0
A	ROG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	ROG_RUNEX	0.003852	0.009047	0.005145	0.005303	0.037462	0.06705	0.015705	0.022524009	0.017791	0.045171786	0.790266	0.045956	0.038893
A	ROG_RUNLS	0.160749	0.241641	0.119083	0.126689	0.083346	0.048385	0.033035	0.000391321	0.033896	0.013537374	3.670486	0.037896	0.068402
A	ROG_STREX	0.197071	0.267146	0.223211	0.238678	0.067869	0.035586	0.046415	1.65627E-06	0.04121	0.01608249	1.025021	0.051728	0.081937
A	SO2_IDLEX	0	0	0	0	7.29E-05	0.000123	0.001195	0.005616953	0.000834	0	0	0.001828	0
A	SO2_RUNEX	0.002156	0.002823	0.002927	0.003485	0.006325	0.006582	0.010485	0.013042303	0.011283	0.007230239	0.001831	0.008027	0.016233
A	SO2_STREX	0.000557	0.000717	0.000733	0.000868	0.000162	8.54E-05	9.37E-05	1.96198E-06	7.54E-05	5.16333E-05	0.000392	6.51E-05	0.000197
A	TOG_DIURN	0.208006	0.310821	0.155511	0.165232	0.056781	0.034294	0.016264	0.000235524	0.029304	0.012421079	0.066855	0.052216	10.81642
A	TOG_HTSK	0.057819	0.083701	0.043823	0.045503	0.014537	0.008339	0.00391	6.49199E-05	0.00656	0.003424597	3.535952	0.011692	2.824213
A	TOG_IDLEX	0	0	0	0	0.023432	0.017024	0.04258	0.526899253	0.043038	0	0	0.511291	0
A	TOG_RESTL	0	0	0	0	0	0	0	0	0	0	0	0	0
A	TOG_RUNEX	0.005617	0.013201	0.007494	0.007717	0.044644	0.077093	0.027406	0.208786723	0.030062	0.693940204	0.977152	0.127141	0.047979
A	TOG_RUNLS	0.160749	0.241641	0.119083	0.126689	0.083346	0.048385	0.033035	0.000391321	0.033896	0.013537374	3.670486	0.037896	0.068402
A	TOG_STREX	0.215768	0.292491	0.244388	0.261323	0.074308	0.038963	0.050819	1.8134E-06	0.04512	0.017608302	1.115488	0.056636	0.08971
A	N2O_IDLEX	0	0	0	0	0.000532	0.001598	0.019855	0.113681015	0.013363	0	0	0.02289	0
A	N2O_RUNEX	0.002889	0.0045	0.003674	0.00417	0.032136	0.070442	0.126706	0.244505965	0.159364	0.142077729	0.035104	0.090896	0.066786
A	N2O_STREX	0.023753	0.02846	0.028293	0.028531	0.02612	0.013606	0.006893	1.7284E-07	0.007527	0.006837798	0.005584	0.006286	0.029442

CalEEMod EMFAC2021 Fleet Mix Input

FleetMixLandUseSubType	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
	0.392953	0.03814	0.309697	0.182164	0.036329	0.008412	0.012807	0.007315	0.004719	0.001823	0.004493	0.000442	0.000706

Attachment 4: Project Construction and Operation Dispersion Modeling Inputs and Risk Calculations

803-851 Old County Road, San Carlos, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2022	Construction	0.0469	CON_DPM	93.9	0.02857	3.60E-03	14,088	2.56E-07
2023	Construction	0.0330	CON_DPM	66.0	0.02008	2.53E-03	14,088	1.80E-07
2024+2025	Construction	0.0361	CON_DPM	72.3	0.02199	2.77E-03	14,088	1.97E-07
Total		***0.1160***		***232.1***	***0.0706***	***0.0089***		

Construction Hours

hr/day =	9	(8am - 5pm)
days/yr =	365	
hours/year =	3285	

803-851 Old County Road, San Carlos, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2022	Construction	CON_FUG	0.0196	39.3	0.01195	1.51E-03	14,088	1.07E-07
2023	Construction	CON_FUG	0.0031	6.3	0.00191	2.41E-04	14,088	1.71E-08
2024+2025	Construction	CON_FUG	0.0033	6.7	0.00204	2.56E-04	14,088	1.82E-08
Total			***0.0261***	***52.2***	***0.0159***	***0.0020***		

Construction Hours

hr/day =	9	(8am - 5pm)
days/yr =	365	
hours/year =	3285	

803-851 Old County Road, San Carlos, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Cancer Risk (per million) Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2022	0.0131	0.0054	2.33	0.04	0.00	0.02
2023	0.0092	0.0009	1.51	0.03	0.00	0.01
2024 + 2025	0.0101	0.0009	0.26	0.03	0.00	0.01
Total	-	-	**4.10**	**0.09**		-
Maximum	0.0131	0.0054	**-**	**-**	**0.00**	**0.02**

Maximum Impacts at Children's Place Preschool

Construction Year	Unmitigated Emissions: Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations Fugitive PM2.5 ($\mu g/m^3$)	Child Cancer Risk (per million)	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2022	0.0046	0.0019	0.28	0.0009	0.006
2023	0.0032	0.0003	0.20	0.0006	0.004
2024 + 2025	0.0035	0.0003	0.22	0.0007	0.004
Total	-	-	**0.70**	-	-
Maximum	0.0046	0.0019	**-**	**0.0009**	**0.006**

803-851 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 7.6 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022	0.0096	10	0.13	2022	0.0096	-	-			
1	1	0 - 1	2022	0.0096	10	1.57	2022	0.0096	1	0.03	0.002	0.00	0.01
2	1	1 - 2	2023	0.0067	10	1.11	2023	0.0067	1	0.02	0.001	0.00	0.01
3	1	2 - 3	2024+2025	0.0074	3	0.19	2024+2025	0.0074	1	0.02	0.001	0.00	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**3.00**				**0.07**			

* Third trimester of pregnancy

803-851 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 4.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	Infant/Child - Exposure Information: DPM Conc (ug/m3) Annual	Infant/Child - Exposure Information: Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Annual	Adult - Exposure Information: Age Sensitivity Factor	Adult Cancer Risk (per million)	Hazard Index	Maximum Fugitive PM2.5	Maximum Total PM2.5
0	0.25	-0.25 - 0*	2022	0.0122	10	0.17	2022	0.0122	-	-			
1	1	0 - 1	2022	0.0122	10	2.01	2022	0.0122	1	0.04	0.002	0.005	0.02
2	1	1 - 2	2023	0.0086	10	1.41	2023	0.0086	1	0.02	0.002	0.001	0.01
3	1	2 - 3	2024+2025	0.0094	3	0.24	2024+2025	0.0094	1	0.03	0.002	0.001	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**3.82**				**0.09**			

* Third trimester of pregnancy

803-851 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult			
	Exposure				Age	Cancer	Modeled		Age	Cancer		Maximum	
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2022	0.0131	10	0.18	2022	0.0131	-	-			
1	1	0 - 1	2022	0.0131	10	2.15	2022	0.0131	1	0.04	0.00	0.005	0.02
2	1	1 - 2	2023	0.0092	10	1.51	2023	0.0092	1	0.03	0.00	0.001	0.01
3	1	2 - 3	2024+2025	0.0101	3	0.26	2024+2025	0.0101	1	0.03	0.00	0.001	0.01
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**4.10**				**0.09**			

* Third trimester of pregnancy

803-851 Old County Road, San Carlos, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Children's Place Preschool - 1 meter - Child Exposure

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SAF x 8-Hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	School Infant	School Child	Adult
Age -->	**0 - <2**	**2 - <16**	**16 - 30**
Parameter			
ASF =	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00
8-Hr BR* =	1200	520	240
A =	1	1	1
EF =	250	250	250
AT =	70	70	70
SAF =	3.73	3.73	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information: DPM Conc (ug/m3) Year	DPM Conc (ug/m3) Annual	Age* Sensitivity Factor	Child Cancer Risk (per million)	Maximum Hazard Index	Maximum Fugitive PM2.5	Maximum Total PM2.5
1	1	2 - 3	2022	0.0046	3	0.3	0.0009	0.0019	0.006
2	1	3 - 4	2023	0.0032	3	0.2	0.0006	0.0003	0.004
3	1	4 - 5	2024 + 2025	0.0035	3	0.2	0.0007	0.0003	0.004
4	1			0.0000	3	0.0			
5	1			0.0000	3	0.0			
6	1			0.0000	3	0.0			
7	1			0.0000	3	0.0			
8	1			0.0000	3	0.0			
9	1			0.0000	3	0.0			
Total Increased Cancer Risk						**0.70**			

* Children assumed to be 2 years of age or older with 3 years of Construction Exposure

Attachment 5: Cumulative Community Risk from Existing TAC Sources

803-851 Old County Road, San Carlos, CA

Standby Emergency Generator Impacts

Off-site Sensitive Receptors

MEI Locations = 1.5 meter receptor height

DPM Emission Rates		
	DPM Emissions per Generator	
Source Type	Max Daily (lb/day)	Annual (lb/year)
450 & 500-kW, 600 & 670-hp Generator	0.042	15.32
CalEEMod DPM Emissions	7.66E-03	tons/year

Modeling Information	
Model	AERMOD
Source	Diesel Generator Engine
Source Type	Point
Meteorological Data	2011 - 2015 San Carlos Airport Meteorological Data
Point Source Stack Parameters	
Generator Engine Size (hp)	600 & 670
Stack Height (ft)	10.00
Stack Diameter (ft)**	0.60
Exhaust Gas Flowrate (CFM)*	2527.73
Stack Exit Velocity (ft/sec)**	149.00
Exhaust Temperature (˚F)**	872.00
Emissions Rate (lb/hr)	0.001749

* AERMOD default

**BAAQMD default generator parameters

803-851 Old County Road, San Carlos, CA - Cancer Risks from Project Operation
Project Emergency Generators
Impacts at Off-Site Receptors- 1.5m MEI Receptor Heights
Impact at Project MEI (27-year Exposure)

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)		Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022	0.0000	10	0.000				
1	1	0 - 1	2022	0.0000	10	0.000				
2	1	1 - 2	2023	0.0000	10	0.000				
3	1	2 - 3	2024	0.0000	3	0.000				
4	1	3 - 4	2025	0.0000	3	0.000				
5	1	4 - 5	2026	0.0003	3	0.008		0.00006	0.0000	0.0003
6	1	5 - 6	2027	0.0003	3	0.008		0.00006	0.0000	0.0003
7	1	6 - 7	2028	0.0003	3	0.008		0.00006	0.0000	0.0003
8	1	7 - 8	2029	0.0003	3	0.008		0.00006	0.0000	0.0003
9	1	8 - 9	2030	0.0003	3	0.008		0.00006	0.0000	0.0003
10	1	9 - 10	2031	0.0003	3	0.008		0.00006	0.0000	0.0003
11	1	10 - 11	2032	0.0003	3	0.008		0.00006	0.0000	0.0003
12	1	11 - 12	2033	0.0003	3	0.008		0.00006	0.0000	0.0003
13	1	12 - 13	2034	0.0003	3	0.008		0.00006	0.0000	0.0003
14	1	13 - 14	2035	0.0003	3	0.008		0.00006	0.0000	0.0003
15	1	14 - 15	2036	0.0003	3	0.008		0.00006	0.0000	0.0003
16	1	15 - 16	2037	0.0003	3	0.008		0.00006	0.0000	0.0003
17	1	16-17	2038	0.0003	1	0.001		0.00006	0.0000	0.0003
18	1	17-18	2039	0.0003	1	0.001		0.00006	0.0000	0.0003
19	1	18-19	2040	0.0003	1	0.001		0.00006	0.0000	0.0003
20	1	19-20	2041	0.0003	1	0.001		0.00006	0.0000	0.0003
21	1	20-21	2042	0.0003	1	0.001		0.00006	0.0000	0.0003
22	1	21-22	2043	0.0003	1	0.001		0.00006	0.0000	0.0003
23	1	22-23	2044	0.0003	1	0.001		0.00006	0.0000	0.0003
24	1	23-24	2045	0.0003	1	0.001		0.00006	0.0000	0.0003
25	1	24-25	2046	0.0003	1	0.001		0.00006	0.0000	0.0003
26	1	25-26	2047	0.0003	1	0.001		0.00006	0.0000	0.0003
27	1	26-27	2048	0.0003	1	0.001		0.00006	0.0000	0.0003
28	1	27-28	2049	0.0003	1	0.001		0.00006	0.0000	0.0003
29	1	28-29	2050	0.0003	1	0.001		0.00006	0.0000	0.0003
30	1	29-30	2051	0.0003	1	0.001		0.00006	0.0000	0.0003
Total Increased Cancer Risk						**0.11**	**Max**	**0.00006**	**0.0000**	**0.0003**

* Third trimester of pregnancy

Evaporative Cooling Tower PM Emissions

No. Cooling Tower Cells			2
Total Water Flow Rate (gpm)			4,500
Cooling Tower Circulating Water TDS (ppm)*			72
Mist Eliminator Efficiency (%)			0.005
Total Cooling Tower Drift (gpm)			0.23
<u>Particulate Matter Emissions</u>			
	PM	PM10	PM2.5
Fraction of PM**	1.00	0.70	0.42
Hourly (lb/hr)	0.01	0.01	0.00
Daily (lb/day)	0.19	0.14	0.08
Annual lb/yr)	71.01	49.71	29.83
Annual (ton/yr)	0.04	0.02	0.01

* Maximum TDS value provided by applicant.

** South Coast AQMD, Final-Methodology to Calculate Particulate Matter (PM) 2.5 and PM2.5 Significance Thresholds, Appendix A.

803-851 Old County Road, San Carlos, CA - Project Cooling Tower - PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations - Project Cooling Tower at Childcare MEI and MAX Residential Receptors (1 m and 1.5 m receptor heights)

Emission Year	2026
Receptor Information	Childcare MEI and Max residential receptors
Number of Receptors	2
Receptor Height	1 and 1.5 meters
Receptor Distances	At Childcare MEI and Max residential locations

Meteorological Conditions	
BAQMD San Carlos Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)	
	Childcare MEI	Max Residential
2013-2017	0.00075	0.00134

File Name: Local Roadways 2022.EF
CT-EMFAC2017 Version: 1.0.2.27401
Run Date: 2/22/2022 12:05:24 PM
Area: San Mateo (SF)
Analysis Year: 2022
Season: Annual

===

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.017	0.472	0.528
Truck 2	0.014	0.870	0.114
Non-Truck	0.969	0.017	0.964

===

Road Type:	Major/Collector		
Silt Loading Factor:	CARB	0.032 g/m2	
Precipitation Correction:	CARB	P = 60 days	N = 365 days

===

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	25 mph	30 mph	35 mph
PM2.5	0.002443	0.001982	0.001702
TOG	0.057463	0.045778	0.038307
Diesel PM	0.000568	0.000522	0.000503

===

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
TOG	1.245454

===

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002046

===

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.016802

===

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.014819

=============================END=====================================

803-851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_COM	Commercial Street Northbound	NB	1	385.3	0.24	9.7	31.7	3.4	25	17,236
DPM_SB_COM	Commercial Street Southbound	SB	1	385.2	0.24	9.7	31.7	3.4	25	17,236
									Total	34,472

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.00057			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM_NB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.85%	664	2.51E-05	9	6.74%	1162	4.39E-05	17	6.40%	1104	4.17E-05
2	3.18%	549	2.07E-05	10	8.25%	1421	5.37E-05	18	4.10%	706	2.67E-05
3	2.35%	404	1.53E-05	11	6.24%	1075	4.06E-05	19	2.38%	411	1.55E-05
4	1.01%	173	6.54E-06	12	7.41%	1277	4.82E-05	20	1.21%	209	7.89E-06
5	1.01%	173	6.54E-06	13	6.74%	1162	4.39E-05	21	3.05%	526	1.99E-05
6	2.18%	375	1.42E-05	14	6.57%	1133	4.28E-05	22	5.06%	873	3.30E-05
7	4.73%	815	3.08E-05	15	5.90%	1017	3.84E-05	23	3.35%	577	2.18E-05
8	3.39%	584	2.21E-05	16	4.23%	729	2.75E-05	24	0.67%	115	4.36E-06
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.85%	664	2.51E-05	9	6.74%	1162	4.39E-05	17	6.40%	1104	4.17E-05
2	3.18%	549	2.07E-05	10	8.25%	1421	5.37E-05	18	4.10%	706	2.67E-05
3	2.35%	404	1.53E-05	11	6.24%	1075	4.06E-05	19	2.38%	411	1.55E-05
4	1.01%	173	6.54E-06	12	7.41%	1277	4.82E-05	20	1.21%	209	7.89E-06
5	1.01%	173	6.54E-06	13	6.74%	1162	4.39E-05	21	3.05%	526	1.99E-05
6	2.18%	375	1.42E-05	14	6.57%	1133	4.28E-05	22	5.06%	873	3.30E-05
7	4.73%	815	3.08E-05	15	5.90%	1017	3.84E-05	23	3.35%	577	2.18E-05
8	3.39%	584	2.21E-05	16	4.23%	729	2.75E-05	24	0.67%	115	4.36E-06
								Total		17,236	

803-851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_COM	Commercial Street Northbound	NB	1	385.3	0.24	9.7	32	1.3	25	17,236
PM2.5_SB_COM	Commercial Street Southbound	SB	1	385.2	0.24	9.7	32	1.3	25	17,236
									Total	34,472

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.002443			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	3.13E-05	9	7.12%	1227	1.99E-04	17	7.43%	1281	2.08E-04
2	0.41%	71	1.16E-05	10	4.38%	755	1.23E-04	18	8.24%	1420	2.31E-04
3	0.38%	65	1.05E-05	11	4.65%	801	1.30E-04	19	5.72%	987	1.60E-04
4	0.17%	30	4.84E-06	12	5.89%	1015	1.65E-04	20	4.30%	742	1.21E-04
5	0.45%	78	1.27E-05	13	6.17%	1064	1.73E-04	21	3.26%	561	9.12E-05
6	0.85%	147	2.38E-05	14	6.05%	1042	1.69E-04	22	3.31%	571	9.27E-05
7	3.73%	644	1.05E-04	15	7.05%	1216	1.98E-04	23	2.49%	429	6.96E-05
8	7.77%	1339	2.17E-04	16	7.19%	1239	2.01E-04	24	1.87%	323	5.25E-05
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	3.13E-05	9	7.12%	1227	1.99E-04	17	7.43%	1281	2.08E-04
2	0.41%	71	1.16E-05	10	4.38%	755	1.23E-04	18	8.24%	1420	2.31E-04
3	0.38%	65	1.05E-05	11	4.65%	801	1.30E-04	19	5.72%	987	1.60E-04
4	0.17%	30	4.83E-06	12	5.89%	1015	1.65E-04	20	4.30%	742	1.20E-04
5	0.45%	78	1.27E-05	13	6.17%	1064	1.73E-04	21	3.26%	561	9.11E-05
6	0.85%	147	2.38E-05	14	6.05%	1042	1.69E-04	22	3.31%	571	9.27E-05
7	3.73%	644	1.05E-04	15	7.05%	1216	1.97E-04	23	2.49%	429	6.96E-05
8	7.77%	1339	2.17E-04	16	7.19%	1239	2.01E-04	24	1.87%	323	5.25E-05
								Total		17,236	

803-851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_COM	Commercial Street Northbound	NB	1	385.3	0.24	9.7	32	1.3	25	17,236
TEXH_SB_COM	Commercial Street Southbound	SB	1	385.2	0.24	9.7	32	1.3	25	17,236
									Total	34,472

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.05746			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	7.36E-04	9	7.12%	1227	4.69E-03	17	7.43%	1281	4.89E-03
2	0.41%	71	2.73E-04	10	4.38%	755	2.88E-03	18	8.24%	1420	5.43E-03
3	0.38%	65	2.47E-04	11	4.65%	801	3.06E-03	19	5.72%	987	3.77E-03
4	0.17%	30	1.14E-04	12	5.89%	1015	3.88E-03	20	4.30%	742	2.84E-03
5	0.45%	78	2.99E-04	13	6.17%	1064	4.07E-03	21	3.26%	561	2.14E-03
6	0.85%	147	5.60E-04	14	6.05%	1042	3.98E-03	22	3.31%	571	2.18E-03
7	3.73%	644	2.46E-03	15	7.05%	1216	4.65E-03	23	2.49%	429	1.64E-03
8	7.77%	1339	5.12E-03	16	7.19%	1239	4.73E-03	24	1.87%	323	1.23E-03
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	7.36E-04	9	7.12%	1227	4.69E-03	17	7.43%	1281	4.89E-03
2	0.41%	71	2.73E-04	10	4.38%	755	2.88E-03	18	8.24%	1420	5.42E-03
3	0.38%	65	2.47E-04	11	4.65%	801	3.06E-03	19	5.72%	987	3.77E-03
4	0.17%	30	1.14E-04	12	5.89%	1015	3.88E-03	20	4.30%	742	2.83E-03
5	0.45%	78	2.98E-04	13	6.17%	1064	4.07E-03	21	3.26%	561	2.14E-03
6	0.85%	147	5.60E-04	14	6.05%	1042	3.98E-03	22	3.31%	571	2.18E-03
7	3.73%	644	2.46E-03	15	7.05%	1216	4.65E-03	23	2.49%	429	1.64E-03
8	7.77%	1339	5.11E-03	16	7.19%	1239	4.73E-03	24	1.87%	323	1.23E-03
								Total		17,236	

803-851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_COM	Commercial Street Northbound	NB	1	385.3	0.24	9.7	32	1.3	25	17,236
TEVAP_SB_COM	Commercial Street Southbound	SB	1	385.2	0.24	9.7	32	1.3	25	17,236
									Total	34,472

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle per Hour (g/hour)	1.24545			
Emissions per Vehicle per Mile (g/VMT)	0.04982			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	6.38E-04	9	7.12%	1227	4.07E-03	17	7.43%	1281	4.24E-03
2	0.41%	71	2.37E-04	10	4.38%	755	2.50E-03	18	8.24%	1420	4.70E-03
3	0.38%	65	2.14E-04	11	4.65%	801	2.65E-03	19	5.72%	987	3.27E-03
4	0.17%	30	9.86E-05	12	5.89%	1015	3.36E-03	20	4.30%	742	2.46E-03
5	0.45%	78	2.59E-04	13	6.17%	1064	3.53E-03	21	3.26%	561	1.86E-03
6	0.85%	147	4.86E-04	14	6.05%	1042	3.45E-03	22	3.31%	571	1.89E-03
7	3.73%	644	2.13E-03	15	7.05%	1216	4.03E-03	23	2.49%	429	1.42E-03
8	7.77%	1339	4.43E-03	16	7.19%	1239	4.10E-03	24	1.87%	323	1.07E-03
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	6.38E-04	9	7.12%	1227	4.06E-03	17	7.43%	1281	4.24E-03
2	0.41%	71	2.37E-04	10	4.38%	755	2.50E-03	18	8.24%	1420	4.70E-03
3	0.38%	65	2.14E-04	11	4.65%	801	2.65E-03	19	5.72%	987	3.27E-03
4	0.17%	30	9.86E-05	12	5.89%	1015	3.36E-03	20	4.30%	742	2.46E-03
5	0.45%	78	2.59E-04	13	6.17%	1064	3.52E-03	21	3.26%	561	1.86E-03
6	0.85%	147	4.86E-04	14	6.05%	1042	3.45E-03	22	3.31%	571	1.89E-03
7	3.73%	644	2.13E-03	15	7.05%	1216	4.03E-03	23	2.49%	429	1.42E-03
8	7.77%	1339	4.43E-03	16	7.19%	1239	4.10E-03	24	1.87%	323	1.07E-03
								Total		17,236	

803-851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Commercial Street
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_COM	Commercial Street Northbound	NB	1	385.3	0.24	9.7	32	1.3	25	17,236
FUG_SB_COM	Commercial Street Southbound	SB	1	385.2	0.24	9.7	32	1.3	25	17,236
									Total	34,472

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00205			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01482			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03367			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_COM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	4.31E-04	9	7.12%	1227	2.75E-03	17	7.43%	1281	2.87E-03
2	0.41%	71	1.60E-04	10	4.38%	755	1.69E-03	18	8.24%	1420	3.18E-03
3	0.38%	65	1.45E-04	11	4.65%	801	1.79E-03	19	5.72%	987	2.21E-03
4	0.17%	30	6.66E-05	12	5.89%	1015	2.27E-03	20	4.30%	742	1.66E-03
5	0.45%	78	1.75E-04	13	6.17%	1064	2.38E-03	21	3.26%	561	1.26E-03
6	0.85%	147	3.28E-04	14	6.05%	1042	2.33E-03	22	3.31%	571	1.28E-03
7	3.73%	644	1.44E-03	15	7.05%	1216	2.72E-03	23	2.49%	429	9.60E-04
8	7.77%	1339	3.00E-03	16	7.19%	1239	2.77E-03	24	1.87%	323	7.23E-04
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_COM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	4.31E-04	9	7.12%	1227	2.75E-03	17	7.43%	1281	2.87E-03
2	0.41%	71	1.60E-04	10	4.38%	755	1.69E-03	18	8.24%	1420	3.18E-03
3	0.38%	65	1.45E-04	11	4.65%	801	1.79E-03	19	5.72%	987	2.21E-03
4	0.17%	30	6.66E-05	12	5.89%	1015	2.27E-03	20	4.30%	742	1.66E-03
5	0.45%	78	1.75E-04	13	6.17%	1064	2.38E-03	21	3.26%	561	1.26E-03
6	0.85%	147	3.28E-04	14	6.05%	1042	2.33E-03	22	3.31%	571	1.28E-03
7	3.73%	644	1.44E-03	15	7.05%	1216	2.72E-03	23	2.49%	429	9.59E-04
8	7.77%	1339	3.00E-03	16	7.19%	1239	2.77E-03	24	1.87%	323	7.23E-04
								Total		17,236	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_ECR	El Camino Real Northbound	NB	2	755.4	0.47	13.3	43.7	3.4	35	17,543
DPM_SB_ECR	El Camino Real Southbound	SB	3	750.5	0.47	17.0	55.7	3.4	35	17,543
									Total	35,086

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00050			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.85%	676	4.43E-05	9	6.74%	1182	7.75E-05	17	6.40%	1124	7.37E-05
2	3.18%	558	3.66E-05	10	8.25%	1447	9.49E-05	18	4.10%	719	4.72E-05
3	2.35%	411	2.70E-05	11	6.24%	1094	7.18E-05	19	2.38%	418	2.74E-05
4	1.01%	176	1.16E-05	12	7.41%	1300	8.52E-05	20	1.21%	213	1.39E-05
5	1.01%	176	1.16E-05	13	6.74%	1182	7.75E-05	21	3.05%	536	3.51E-05
6	2.18%	382	2.51E-05	14	6.57%	1153	7.56E-05	22	5.06%	888	5.83E-05
7	4.73%	830	5.44E-05	15	5.90%	1035	6.79E-05	23	3.35%	588	3.85E-05
8	3.39%	595	3.90E-05	16	4.23%	742	4.86E-05	24	0.67%	118	7.71E-06
								Total		17,543	

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.85%	676	4.40E-05	9	6.74%	1182	7.70E-05	17	6.40%	1124	7.32E-05
2	3.18%	558	3.64E-05	10	8.25%	1447	9.43E-05	18	4.10%	719	4.69E-05
3	2.35%	411	2.68E-05	11	6.24%	1094	7.13E-05	19	2.38%	418	2.73E-05
4	1.01%	176	1.15E-05	12	7.41%	1300	8.47E-05	20	1.21%	213	1.39E-05
5	1.01%	176	1.15E-05	13	6.74%	1182	7.70E-05	21	3.05%	536	3.49E-05
6	2.18%	382	2.49E-05	14	6.57%	1153	7.51E-05	22	5.06%	888	5.79E-05
7	4.73%	830	5.41E-05	15	5.90%	1035	6.75E-05	23	3.35%	588	3.83E-05
8	3.39%	595	3.87E-05	16	4.23%	742	4.83E-05	24	0.67%	118	7.66E-06
								Total		17,543	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_ECR	El Camino Real Northbound	NB	2	755.4	0.47	13.3	44	1.3	35	17,543
PM2.5_SB_ECR	El Camino Real Southbound	SB	3	750.5	0.47	17.0	56	1.3	35	17,543
									Total	35,086

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001702			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	196	4.35E-05	9	7.12%	1249	2.77E-04	17	7.43%	1303	2.89E-04
2	0.41%	73	1.61E-05	10	4.38%	768	1.70E-04	18	8.24%	1445	3.21E-04
3	0.38%	66	1.46E-05	11	4.65%	815	1.81E-04	19	5.72%	1004	2.23E-04
4	0.17%	30	6.72E-06	12	5.89%	1033	2.29E-04	20	4.30%	755	1.68E-04
5	0.45%	80	1.76E-05	13	6.17%	1083	2.40E-04	21	3.26%	571	1.27E-04
6	0.85%	149	3.31E-05	14	6.05%	1061	2.35E-04	22	3.31%	581	1.29E-04
7	3.73%	655	1.45E-04	15	7.05%	1237	2.75E-04	23	2.49%	436	9.68E-05
8	7.77%	1362	3.02E-04	16	7.19%	1261	2.80E-04	24	1.87%	329	7.29E-05
								Total		17,543	

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	196	4.32E-05	9	7.12%	1249	2.75E-04	17	7.43%	1303	2.87E-04
2	0.41%	73	1.60E-05	10	4.38%	768	1.69E-04	18	8.24%	1445	3.19E-04
3	0.38%	66	1.45E-05	11	4.65%	815	1.80E-04	19	5.72%	1004	2.21E-04
4	0.17%	30	6.68E-06	12	5.89%	1033	2.28E-04	20	4.30%	755	1.66E-04
5	0.45%	80	1.75E-05	13	6.17%	1083	2.39E-04	21	3.26%	571	1.26E-04
6	0.85%	149	3.29E-05	14	6.05%	1061	2.34E-04	22	3.31%	581	1.28E-04
7	3.73%	655	1.44E-04	15	7.05%	1237	2.73E-04	23	2.49%	436	9.62E-05
8	7.77%	1362	3.00E-04	16	7.19%	1261	2.78E-04	24	1.87%	329	7.25E-05
								Total		17,543	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_ECR	El Camino Real Northbound	NB	2	755.4	0.47	13.3	44	1.3	35	17,543
TEXH_SB_ECR	El Camino Real Southbound	SB	3	750.5	0.47	17.0	56	1.3	35	17,543
									Total	35,086

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03831			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	196	9.80E-04	9	7.12%	1249	6.24E-03	17	7.43%	1303	6.51E-03
2	0.41%	73	3.63E-04	10	4.38%	768	3.84E-03	18	8.24%	1445	7.22E-03
3	0.38%	66	3.29E-04	11	4.65%	815	4.07E-03	19	5.72%	1004	5.02E-03
4	0.17%	30	1.51E-04	12	5.89%	1033	5.16E-03	20	4.30%	755	3.77E-03
5	0.45%	80	3.97E-04	13	6.17%	1083	5.41E-03	21	3.26%	571	2.85E-03
6	0.85%	149	7.45E-04	14	6.05%	1061	5.30E-03	22	3.31%	581	2.90E-03
7	3.73%	655	3.27E-03	15	7.05%	1237	6.18E-03	23	2.49%	436	2.18E-03
8	7.77%	1362	6.80E-03	16	7.19%	1261	6.30E-03	24	1.87%	329	1.64E-03
								Total		17,543	

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	196	9.73E-04	9	7.12%	1249	6.20E-03	17	7.43%	1303	6.47E-03
2	0.41%	73	3.61E-04	10	4.38%	768	3.81E-03	18	8.24%	1445	7.17E-03
3	0.38%	66	3.27E-04	11	4.65%	815	4.04E-03	19	5.72%	1004	4.98E-03
4	0.17%	30	1.50E-04	12	5.89%	1033	5.13E-03	20	4.30%	755	3.75E-03
5	0.45%	80	3.95E-04	13	6.17%	1083	5.37E-03	21	3.26%	571	2.83E-03
6	0.85%	149	7.40E-04	14	6.05%	1061	5.27E-03	22	3.31%	581	2.88E-03
7	3.73%	655	3.25E-03	15	7.05%	1237	6.14E-03	23	2.49%	436	2.16E-03
8	7.77%	1362	6.76E-03	16	7.19%	1261	6.26E-03	24	1.87%	329	1.63E-03
								Total		17,543	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_ECR	El Camino Real Northbound	NB	2	755.4	0.47	13.3	44	1.3	35	17,543
TEVAP_SB_ECR	El Camino Real Southbound	SB	3	750.5	0.47	17.0	56	1.3	35	17,543
									Total	35,086

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.24545			
Emissions per Vehicle per Mile (g/VMT)	0.03558			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	196	9.10E-04	9	7.12%	1249	5.79E-03	17	7.43%	1303	6.05E-03
2	0.41%	73	3.37E-04	10	4.38%	768	3.56E-03	18	8.24%	1445	6.70E-03
3	0.38%	66	3.06E-04	11	4.65%	815	3.78E-03	19	5.72%	1004	4.66E-03
4	0.17%	30	1.41E-04	12	5.89%	1033	4.79E-03	20	4.30%	755	3.50E-03
5	0.45%	80	3.69E-04	13	6.17%	1083	5.02E-03	21	3.26%	571	2.65E-03
6	0.85%	149	6.92E-04	14	6.05%	1061	4.92E-03	22	3.31%	581	2.70E-03
7	3.73%	655	3.04E-03	15	7.05%	1237	5.74E-03	23	2.49%	436	2.02E-03
8	7.77%	1362	6.32E-03	16	7.19%	1261	5.85E-03	24	1.87%	329	1.52E-03
								Total		17,543	

2022 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	196	9.04E-04	9	7.12%	1249	5.76E-03	17	7.43%	1303	6.01E-03
2	0.41%	73	3.35E-04	10	4.38%	768	3.54E-03	18	8.24%	1445	6.66E-03
3	0.38%	66	3.04E-04	11	4.65%	815	3.76E-03	19	5.72%	1004	4.63E-03
4	0.17%	30	1.40E-04	12	5.89%	1033	4.76E-03	20	4.30%	755	3.48E-03
5	0.45%	80	3.67E-04	13	6.17%	1083	4.99E-03	21	3.26%	571	2.63E-03
6	0.85%	149	6.88E-04	14	6.05%	1061	4.89E-03	22	3.31%	581	2.68E-03
7	3.73%	655	3.02E-03	15	7.05%	1237	5.70E-03	23	2.49%	436	2.01E-03
8	7.77%	1362	6.28E-03	16	7.19%	1261	5.81E-03	24	1.87%	329	1.52E-03
								Total		17,543	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - El Camino Real
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_ECR	El Camino Real Northbound	NB	2	755.4	0.47	13.3	44	1.3	35	17,543
FUG_SB_ECR	El Camino Real Southbound	SB	3	750.5	0.47	17.0	56	1.3	35	17,543
									Total	35,086

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00205			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01482			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03367			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_ECR

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	196	8.61E-04	9	7.12%	1249	5.48E-03	17	7.43%	1303	5.72E-03
2	0.41%	73	3.19E-04	10	4.38%	768	3.37E-03	18	8.24%	1445	6.34E-03
3	0.38%	66	2.89E-04	11	4.65%	815	3.58E-03	19	5.72%	1004	4.41E-03
4	0.17%	30	1.33E-04	12	5.89%	1033	4.53E-03	20	4.30%	755	3.31E-03
5	0.45%	80	3.49E-04	13	6.17%	1083	4.75E-03	21	3.26%	571	2.51E-03
6	0.85%	149	6.55E-04	14	6.05%	1061	4.66E-03	22	3.31%	581	2.55E-03
7	3.73%	655	2.88E-03	15	7.05%	1237	5.43E-03	23	2.49%	436	1.91E-03
8	7.77%	1362	5.98E-03	16	7.19%	1261	5.54E-03	24	1.87%	329	1.44E-03
								Total		17,543	

2022 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_ECR

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	196	8.55E-04	9	7.12%	1249	5.45E-03	17	7.43%	1303	5.68E-03
2	0.41%	73	3.17E-04	10	4.38%	768	3.35E-03	18	8.24%	1445	6.30E-03
3	0.38%	66	2.87E-04	11	4.65%	815	3.55E-03	19	5.72%	1004	4.38E-03
4	0.17%	30	1.32E-04	12	5.89%	1033	4.51E-03	20	4.30%	755	3.29E-03
5	0.45%	80	3.47E-04	13	6.17%	1083	4.72E-03	21	3.26%	571	2.49E-03
6	0.85%	149	6.51E-04	14	6.05%	1061	4.63E-03	22	3.31%	581	2.53E-03
7	3.73%	655	2.86E-03	15	7.05%	1237	5.40E-03	23	2.49%	436	1.90E-03
8	7.77%	1362	5.94E-03	16	7.19%	1261	5.50E-03	24	1.87%	329	1.43E-03
								Total		17,543	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Old County Road
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_OLD	Old Country Road Northbound	NB	1	772.2	0.48	9.7	31.7	3.4	35	17,236
DPM_SB_OLD	Old Country Road Southbound	SB	1	773.5	0.48	9.7	31.7	3.4	35	17,236
									Total	34,472

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00050			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM_NB_OLD

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.85%	664	4.45E-05	9	6.74%	1162	7.79E-05	17	6.40%	1104	7.40E-05
2	3.18%	549	3.68E-05	10	8.25%	1421	9.53E-05	18	4.10%	706	4.74E-05
3	2.35%	404	2.71E-05	11	6.24%	1075	7.21E-05	19	2.38%	411	2.76E-05
4	1.01%	173	1.16E-05	12	7.41%	1277	8.56E-05	20	1.21%	209	1.40E-05
5	1.01%	173	1.16E-05	13	6.74%	1162	7.79E-05	21	3.05%	526	3.53E-05
6	2.18%	375	2.52E-05	14	6.57%	1133	7.59E-05	22	5.06%	873	5.85E-05
7	4.73%	815	5.47E-05	15	5.90%	1017	6.82E-05	23	3.35%	577	3.87E-05
8	3.39%	584	3.92E-05	16	4.23%	729	4.88E-05	24	0.67%	115	7.74E-06
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_OLD

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.85%	664	4.46E-05	9	6.74%	1162	7.80E-05	17	6.40%	1104	7.41E-05
2	3.18%	549	3.68E-05	10	8.25%	1421	9.55E-05	18	4.10%	706	4.74E-05
3	2.35%	404	2.71E-05	11	6.24%	1075	7.22E-05	19	2.38%	411	2.76E-05
4	1.01%	173	1.16E-05	12	7.41%	1277	8.58E-05	20	1.21%	209	1.40E-05
5	1.01%	173	1.16E-05	13	6.74%	1162	7.80E-05	21	3.05%	526	3.54E-05
6	2.18%	375	2.52E-05	14	6.57%	1133	7.61E-05	22	5.06%	873	5.86E-05
7	4.73%	815	5.47E-05	15	5.90%	1017	6.83E-05	23	3.35%	577	3.88E-05
8	3.39%	584	3.92E-05	16	4.23%	729	4.89E-05	24	0.67%	115	7.76E-06
								Total		17,236	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Old County Road
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_OLD	Old Country Road Northbound	NB	1	772.2	0.48	9.7	32	1.3	35	17,236
PM2.5_SB_OLD	Old Country Road Southbound	SB	1	773.5	0.48	9.7	32	1.3	35	17,236
									Total	34,472

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001702			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_OLD

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	4.37E-05	9	7.12%	1227	2.78E-04	17	7.43%	1281	2.90E-04
2	0.41%	71	1.62E-05	10	4.38%	755	1.71E-04	18	8.24%	1420	3.22E-04
3	0.38%	65	1.47E-05	11	4.65%	801	1.82E-04	19	5.72%	987	2.24E-04
4	0.17%	30	6.75E-06	12	5.89%	1015	2.30E-04	20	4.30%	742	1.68E-04
5	0.45%	78	1.77E-05	13	6.17%	1064	2.41E-04	21	3.26%	561	1.27E-04
6	0.85%	147	3.33E-05	14	6.05%	1042	2.36E-04	22	3.31%	571	1.29E-04
7	3.73%	644	1.46E-04	15	7.05%	1216	2.76E-04	23	2.49%	429	9.72E-05
8	7.77%	1339	3.04E-04	16	7.19%	1239	2.81E-04	24	1.87%	323	7.33E-05
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_OLD

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	4.38E-05	9	7.12%	1227	2.79E-04	17	7.43%	1281	2.91E-04
2	0.41%	71	1.62E-05	10	4.38%	755	1.71E-04	18	8.24%	1420	3.23E-04
3	0.38%	65	1.47E-05	11	4.65%	801	1.82E-04	19	5.72%	987	2.24E-04
4	0.17%	30	6.76E-06	12	5.89%	1015	2.31E-04	20	4.30%	742	1.69E-04
5	0.45%	78	1.78E-05	13	6.17%	1064	2.42E-04	21	3.26%	561	1.27E-04
6	0.85%	147	3.33E-05	14	6.05%	1042	2.37E-04	22	3.31%	571	1.30E-04
7	3.73%	644	1.46E-04	15	7.05%	1216	2.76E-04	23	2.49%	429	9.74E-05
8	7.77%	1339	3.04E-04	16	7.19%	1239	2.82E-04	24	1.87%	323	7.34E-05
								Total		17,236	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Old County Road
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_OLD	Old Country Road Northbound	NB	1	772.2	0.48	9.7	32	1.3	35	17,236
TEXH_SB_OLD	Old Country Road Southbound	SB	1	773.5	0.48	9.7	32	1.3	35	17,236
									Total	34,472

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03831			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_OLD

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	9.84E-04	9	7.12%	1227	6.26E-03	17	7.43%	1281	6.54E-03
2	0.41%	71	3.65E-04	10	4.38%	755	3.85E-03	18	8.24%	1420	7.25E-03
3	0.38%	65	3.31E-04	11	4.65%	801	4.09E-03	19	5.72%	987	5.04E-03
4	0.17%	30	1.52E-04	12	5.89%	1015	5.18E-03	20	4.30%	742	3.79E-03
5	0.45%	78	3.99E-04	13	6.17%	1064	5.43E-03	21	3.26%	561	2.86E-03
6	0.85%	147	7.48E-04	14	6.05%	1042	5.32E-03	22	3.31%	571	2.91E-03
7	3.73%	644	3.29E-03	15	7.05%	1216	6.21E-03	23	2.49%	429	2.19E-03
8	7.77%	1339	6.83E-03	16	7.19%	1239	6.33E-03	24	1.87%	323	1.65E-03
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_OLD

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	9.86E-04	9	7.12%	1227	6.28E-03	17	7.43%	1281	6.55E-03
2	0.41%	71	3.65E-04	10	4.38%	755	3.86E-03	18	8.24%	1420	7.26E-03
3	0.38%	65	3.31E-04	11	4.65%	801	4.09E-03	19	5.72%	987	5.05E-03
4	0.17%	30	1.52E-04	12	5.89%	1015	5.19E-03	20	4.30%	742	3.79E-03
5	0.45%	78	4.00E-04	13	6.17%	1064	5.44E-03	21	3.26%	561	2.87E-03
6	0.85%	147	7.50E-04	14	6.05%	1042	5.33E-03	22	3.31%	571	2.92E-03
7	3.73%	644	3.29E-03	15	7.05%	1216	6.22E-03	23	2.49%	429	2.19E-03
8	7.77%	1339	6.85E-03	16	7.19%	1239	6.34E-03	24	1.87%	323	1.65E-03
								Total		17,236	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Old County Road
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_OLD	Old Country Road Northbound	NB	1	772.2	0.48	9.7	32	1.3	35	17,236
TEVAP_SB_OLD	Old Country Road Southbound	SB	1	773.5	0.48	9.7	32	1.3	35	17,236
									Total	34,472

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.24545			
Emissions per Vehicle per Mile (g/VMT)	0.03558			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_OLD

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	9.14E-04	9	7.12%	1227	5.82E-03	17	7.43%	1281	6.07E-03
2	0.41%	71	3.39E-04	10	4.38%	755	3.58E-03	18	8.24%	1420	6.73E-03
3	0.38%	65	3.07E-04	11	4.65%	801	3.80E-03	19	5.72%	987	4.68E-03
4	0.17%	30	1.41E-04	12	5.89%	1015	4.81E-03	20	4.30%	742	3.52E-03
5	0.45%	78	3.71E-04	13	6.17%	1064	5.05E-03	21	3.26%	561	2.66E-03
6	0.85%	147	6.95E-04	14	6.05%	1042	4.94E-03	22	3.31%	571	2.71E-03
7	3.73%	644	3.05E-03	15	7.05%	1216	5.77E-03	23	2.49%	429	2.03E-03
8	7.77%	1339	6.35E-03	16	7.19%	1239	5.88E-03	24	1.87%	323	1.53E-03
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_OLD

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	9.16E-04	9	7.12%	1227	5.83E-03	17	7.43%	1281	6.08E-03
2	0.41%	71	3.39E-04	10	4.38%	755	3.58E-03	18	8.24%	1420	6.74E-03
3	0.38%	65	3.08E-04	11	4.65%	801	3.80E-03	19	5.72%	987	4.69E-03
4	0.17%	30	1.41E-04	12	5.89%	1015	4.82E-03	20	4.30%	742	3.52E-03
5	0.45%	78	3.71E-04	13	6.17%	1064	5.06E-03	21	3.26%	561	2.67E-03
6	0.85%	147	6.96E-04	14	6.05%	1042	4.95E-03	22	3.31%	571	2.71E-03
7	3.73%	644	3.06E-03	15	7.05%	1216	5.78E-03	23	2.49%	429	2.04E-03
8	7.77%	1339	6.36E-03	16	7.19%	1239	5.89E-03	24	1.87%	323	1.53E-03
								Total		17,236	

803 - 851 Old County Road, San Carlos, CA - Off-Site Residential
Cumulative Operation - Old County Road
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2022

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_OLD	Old Country Road Northbound	NB	1	772.2	0.48	9.7	32	1.3	35	17,236
FUG_SB_OLD	Old Country Road Southbound	SB	1	773.5	0.48	9.7	32	1.3	35	17,236
									Total	34,472

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00205			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01482			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03367			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_OLD

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.12%	193	8.65E-04	9	7.12%	1227	5.51E-03	17	7.43%	1281	5.75E-03
2	0.41%	71	3.21E-04	10	4.38%	755	3.39E-03	18	8.24%	1420	6.37E-03
3	0.38%	65	2.90E-04	11	4.65%	801	3.59E-03	19	5.72%	987	4.43E-03
4	0.17%	30	1.34E-04	12	5.89%	1015	4.55E-03	20	4.30%	742	3.33E-03
5	0.45%	78	3.51E-04	13	6.17%	1064	4.77E-03	21	3.26%	561	2.52E-03
6	0.85%	147	6.58E-04	14	6.05%	1042	4.68E-03	22	3.31%	571	2.56E-03
7	3.73%	644	2.89E-03	15	7.05%	1216	5.46E-03	23	2.49%	429	1.92E-03
8	7.77%	1339	6.01E-03	16	7.19%	1239	5.56E-03	24	1.87%	323	1.45E-03
								Total		17,236	

2022 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_OLD

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.12%	193	8.66E-04	9	7.12%	1227	5.52E-03	17	7.43%	1281	5.76E-03
2	0.41%	71	3.21E-04	10	4.38%	755	3.39E-03	18	8.24%	1420	6.38E-03
3	0.38%	65	2.91E-04	11	4.65%	801	3.60E-03	19	5.72%	987	4.43E-03
4	0.17%	30	1.34E-04	12	5.89%	1015	4.56E-03	20	4.30%	742	3.33E-03
5	0.45%	78	3.51E-04	13	6.17%	1064	4.78E-03	21	3.26%	561	2.52E-03
6	0.85%	147	6.59E-04	14	6.05%	1042	4.69E-03	22	3.31%	571	2.57E-03
7	3.73%	644	2.89E-03	15	7.05%	1216	5.46E-03	23	2.49%	429	1.93E-03
8	7.77%	1339	6.02E-03	16	7.19%	1239	5.57E-03	24	1.87%	323	1.45E-03
								Total		17,236	

803-851 Old County Road, San Carlos, CA - El Camino Real Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2022
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	4.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological	Concentration (µg/m3)*		
Data Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0041	0.3032	0.2815

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)*		
Data Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.2799	0.2665	0.0135

803-851 Old County Road, San Carlos, CA - El Camino Real Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL
0	0.25	-0.25 - 0*	2022	10	0.0041	0.3032	0.2815	0.056	0.024	0.0013	0.08
1	1	0 - 1	2022	10	0.0041	0.3032	0.2815	0.677	0.284	0.0156	0.98
2	1	1 - 2	2023	10	0.0041	0.3032	0.2815	0.677	0.284	0.0156	0.98
3	1	2 - 3	2024	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
4	1	3 - 4	2025	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
5	1	4 - 5	2026	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
6	1	5 - 6	2027	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
7	1	6 - 7	2028	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
8	1	7 - 8	2029	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
9	1	8 - 9	2030	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
10	1	9 - 10	2031	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
11	1	10 - 11	2032	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
12	1	11 - 12	2033	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
13	1	12 - 13	2034	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
14	1	13 - 14	2035	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
15	1	14 - 15	2036	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
16	1	15 - 16	2037	3	0.0041	0.3032	0.2815	0.107	0.045	0.0024	0.15
17	1	16-17	2038	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
18	1	17-18	2039	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
19	1	18-19	2040	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
20	1	19-20	2041	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
21	1	20-21	2042	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
22	1	21-22	2043	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
23	1	22-23	2044	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
24	1	23-24	2045	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
25	1	24-25	2046	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
26	1	25-26	2047	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
27	1	26-27	2048	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
28	1	27-28	2049	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
29	1	28-29	2050	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
30	1	29-30	2051	1	0.0041	0.3032	0.2815	0.012	0.005	0.0003	0.02
Total Increased Cancer Risk								3.07	1.288	0.070	**4.43**

* Third trimester of pregnancy

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00082	0.27	0.28

803-851 Old County Road, San Carlos, CA - Old County Road Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2022
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological	Concentration (µg/m3)*		
Data Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0020	0.1399	0.1300

Construction School MEI PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)*		
Data Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1292	0.1230	0.0062

803-851 Old County Road, San Carlos, CA - Old County Road Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
8-Hr BR* =	361	1200	520	240
A =	1	1	1	1
EF =	250	250	250	250
AT =	70	70	70	70
FAH =	1.00	1.00	3.73	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL	Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG				
0	1	-0.25 - 0*	2022	10	0.0020	0.1399	0.1300	0.077	0.031	0.0017	0.11	0.0004	0.12	0.13
1	1	0 - 1	2022	10	0.0020	0.1399	0.1300	0.256	0.103	0.0056	0.36			
2	1	1 - 2	2023	10	0.0020	0.1399	0.1300	0.256	0.103	0.0056	0.36			
3	1	2 - 3	2024	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
4	1	3 - 4	2025	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
5	1	4 - 5	2026	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
6	1	5 - 6	2027	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
7	1	6 - 7	2028	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
8	1	7 - 8	2029	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
9	1	8 - 9	2030	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
10	1	9 - 10	2031	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
11	1	10 - 11	2032	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
12	1	11 - 12	2033	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
13	1	12 - 13	2034	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
14	1	13 - 14	2035	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
15	1	14 - 15	2036	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
16	1	15 - 16	2037	3	0.0020	0.1399	0.1300	0.124	0.050	0.0027	0.18			
17	1	16-17	2038	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
18	1	17-18	2039	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
19	1	18-19	2040	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
20	1	19-20	2041	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
21	1	20-21	2042	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
22	1	21-22	2043	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
23	1	22-23	2044	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
24	1	23-24	2045	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
25	1	24-25	2046	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
26	1	25-26	2047	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
27	1	26-27	2048	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
28	1	27-28	2049	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
29	1	28-29	2050	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
30	1	29-30	2051	1	0.0020	0.1399	0.1300	0.005	0.002	0.0001	0.01			
Total Increased Cancer Risk								2.396	0.967	0.053	**3.42**			

* Third trimester of pregnancy

803-851 Old County Road, San Carlos, CA - Commercial Street Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2022
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAAQMD San Carlos Airport Met Data	2011 - 2015
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction School MEI Cancer Risk Maximum Concentrations

Meteorological	Concentration (µg/m3)*		
Data Years	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0007	0.0644	0.0559

Construction School MEI PM2.5 Maximum Concentrations

Meteorological	PM2.5 Concentration (µg/m3)*		
Data Years	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0406	0.0378	0.0028

803-851 Old County Road, San Carlos, CA - Commercial Street Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
SAF = Student Adjustment Factor (unitless)
= (24 hrs/9 hrs) x (7 days/5 days) = 3.73
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
8-Hr BR* =	361	1200	520	240
A =	1	1	1	1
EF =	250	250	250	250
AT =	70	70	70	70
FAH =	1.00	1.00	3.73	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)						
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	TOTAL	Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0	1	-0.25 - 0*	2022	10	0.0007	0.0644	0.0559	0.027	0.014	0.0007	0.04	0.0001	0.04	0.04
1	1	0 - 1	2022	10	0.0007	0.0644	0.0559	0.090	0.047	0.0024	0.14			
2	1	1 - 2	2023	10	0.0007	0.0644	0.0559	0.090	0.047	0.0024	0.14			
3	1	2 - 3	2024	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
4	1	3 - 4	2025	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
5	1	4 - 5	2026	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
6	1	5 - 6	2027	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
7	1	6 - 7	2028	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
8	1	7 - 8	2029	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
9	1	8 - 9	2030	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
10	1	9 - 10	2031	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
11	1	10 - 11	2032	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
12	1	11 - 12	2033	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
13	1	12 - 13	2034	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
14	1	13 - 14	2035	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
15	1	14 - 15	2036	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
16	1	15 - 16	2037	3	0.0007	0.0644	0.0559	0.044	0.023	0.0012	0.07			
17	1	16-17	2038	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
18	1	17-18	2039	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
19	1	18-19	2040	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
20	1	19-20	2041	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
21	1	20-21	2042	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
22	1	21-22	2043	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
23	1	22-23	2044	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
24	1	23-24	2045	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
25	1	24-25	2046	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
26	1	25-26	2047	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
27	1	26-27	2048	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
28	1	27-28	2049	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
29	1	28-29	2050	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
30	1	29-30	2051	1	0.0007	0.0644	0.0559	0.002	0.001	0.0000	0.00			
Total Increased Cancer Risk								0.847	0.445	0.023	**1.31**			

* Third trimester of pregnancy

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

Click here for guidance on coducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.

Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.

Table A: Requester Contact Information

Date of Request	**12/1/2021**
Contact Name	Zachary Palm
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x117
Email	zpalm@illingworthrodkin.com
Project Name	803-851 Old County Road
Address	803-851 Old County Road
City	San Carlos
County	San Mateo
Type (residential, commercial, mixed use, industrial, etc.)	Office/R&D
Project Size (# of units or building square feet)	339.933 ksf
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in Table A Incomplete forms will not be processed. Please include a project site map.

2. Download and install the free program Google Earth, **http://www.google.com/earth/download/ge/,** and then download the county specific Google Earth stationary source application files from the District's website, **http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.** The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.

3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.

4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.

5. List the stationary source information in Table B blue section only.

6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (Map B on right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.

7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Areana Flores at 415-749-4616, or aflores@baaqmd.gov

Table B: Google Earth data

Construction MEI

Distance from Receptor (feet) or MEI[1]	Plant No.	Facility Name	Address	Cancer Risk[2]	Hazard Risk[2]	$PM_{2.5}$[2]	Source No.[3]	Type of Source[4]	Fuel Code[5]	Status/Comments	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
1000+	2939	CEMEX Construction Materials Pacific, LLC	1026 Bransten Road	2.72	0.08	64.41		Ready-Mix Concrete Manufacturing		2018 Dataset	0.13	0.36	0.011	8.50
1000+	10925	Royalite Manufacturing Inc	1055 Terminal Way	0.00	0.00	0.00		(1) Metal Coating Operation		2018 Dataset	0.13	0.00	0.000	0.00
1000+	20582	Nxedge San Carlos	1000 Commercial Street	0.75	0.00	0.06		(1) Generator, (2) Boilers, (2) Colvent Cleaning operations		2018 Dataset	0.13	0.10	0.000	0.01
1000+	24886	Grove Construction	1007 Bransten Road	0.16	0.00			(1) Sub-slab Vapor Mitigation System		2018 Dataset	0.13	0.02	0.000	0.00
950	23758	Plantation Coffee Roastery	784 Laurel Street	0.02	0.00	0.01		(1) Coffee Roaster		2018 Dataset	0.15	0.00	0.000	0.00
220	103155	Nielsen Automotive Inc	888 El Camino Real	11.12	0.05			Gas Dispensing Facility		2018 Dataset	0.17	1.93	0.009	0.00
1000+	108501	City of San Carlos - Corporation Yard	1000 Bransten Rd	9.42	0.00	0.01		Gas Dispensing Facility		2018 Dataset	0.02	0.14	0.000	0.00

Footnotes:
1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSA) was completed for the source, the application number will be listed here.
7. The date that the HRSA was completed.
8. Engineer who completed the HRSA. For District purposes only.
9. All HRSA completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSA "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
    a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
    b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of
    c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
    d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should
    e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Mulitplier worksheet.
    f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
    g. This spray booth is considered to be insignificant.

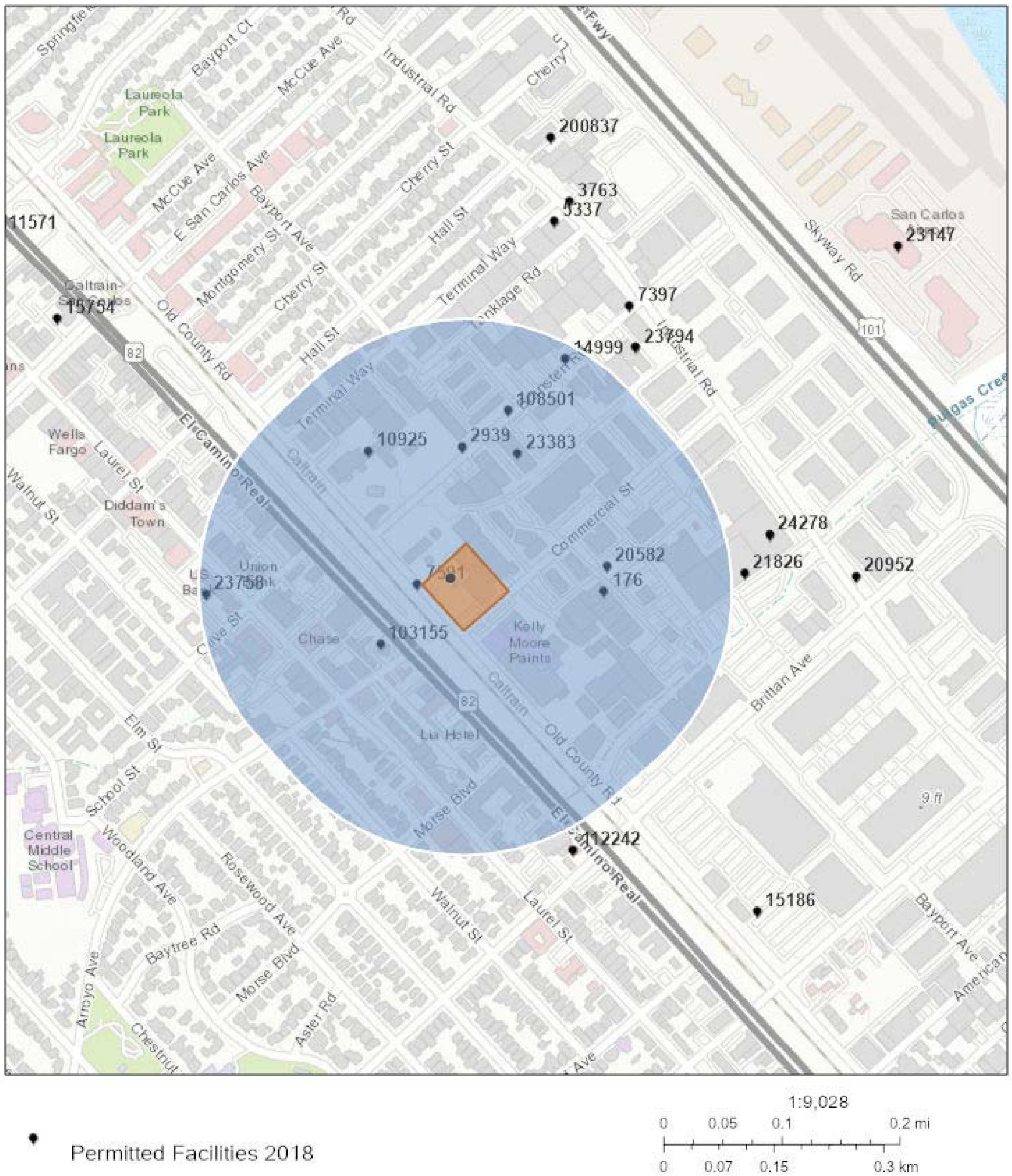
Date last updated:
03/13/2018

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 4,309,929.35 ft²

Dec 1 2021 7:38:12 Eastern Standard Time



Redwood City, County of San Mateo, California, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	10	N/A	N/A

Permitted Facilities 2018

#	FACID	Name	Address	City	St
1	176	Kelly-Moore Paint Co, Inc	1015 Commercial Street	San Carlos	CA
2	2939	CEMEX Construction Materials Pacific, LLC	1026 Bransten Road	San Carlos	CA
3	7591	Garden Supply	803 Old County Road	San Carlos	CA
4	10925	Royalite Manufacturing Inc	1055 Terminal Way	San Carlos	CA
5	14999	Superior Body Shop	956 Bransten Rd	San Carlos	CA
6	20582	Nxedge San Carlos	1000 Commercial Street	San Carlos	CA
7	23383	Greenmarc, LLC	1007 Bransten Road	San Carlos	CA
8	23758	Plantation Coffee Roastery	784 Laurel Street	San Carlos	CA
9	103155	Nielsen Automotive Inc	888 El Camino Real	San Carlos	CA
10	108501	City of San Carlos - Corporation Yard	1000 Bransten Rd	San Carlos	CA

#	Zip	County	Cancer	Hazard	PM_25	Type	Count
1	94070	San Mateo	0.000	0.000	0.000	Contact BAAQMD	1
2	94070	San Mateo	2.720	0.080	64.410	Contact BAAQMD	1
3	94070	San Mateo	0.000	0.000	0.150	Contact BAAQMD	1
4	94070	San Mateo	0.000	0.000	0.000	Contact BAAQMD	1
5	94070	San Mateo	0.000	0.000	0.000	Contact BAAQMD	1
6	94070	San Mateo	0.750	0.000	0.060	Contact BAAQMD	1
7	94070	San Mateo	0.160	0.000	0.000	Contact BAAQMD	1
8	94070	San Mateo	0.020	0.000	0.010	Contact BAAQMD	1
9	94070	San Mateo	11.120	0.050	0.000	Gas Dispensing Facility	1
10	94070	San Mateo	9.420	0.000	0.010	Gas Dispensing Facility	1

Note: The estimated risk and hazard impacts from these sources would be expected to be substantially lower when site specific Health Risk Screening Assessments are conducted.

The screening level map is not recommended for evaluating sensitive land uses such as schools, senior centers, day cares, and health facilities.

HISTORICAL ASSESSMENT, CULTURAL RECORDS SEARCH, SACRED LANDS SEARCH

ATTACHMENT B

to the
841 Old County Road Project Initial Study / Mitigated Negative Declaration

PRESERVATION
ARCHITECTURE

March 15, 2022

803-841-851 OLD COUNTY RD., SAN CARLOS
Historic Resource Evaluations

This report provides an historical evaluation of three parcels and four associated buildings located at the above addresses. Several directly associated parcels are without structures or buildings so are not addressed herein. The purpose of this evaluation effort is to determine if the three subject properties and buildings do or do not qualify as historic resources per the California Register of Historical Resources criteria per the California Environmental Quality Act.

This evaluation effort is based on a review of the subject buildings and their setting, the collection and review of applicable records, including a current environmental report,[1] historic maps and aerial views, historic telephone directories,[2] building permit records from the City of San Carlos and deed records from the County of San Mateo. This author also recently evaluated the overall adjoining block of industrial resources, which historical evaluation directly informed the current effort.[3]

EVALUATION SUMMARY

The three subject properties and their existing buildings are sited at the western end of a block directly east of downtown San Carlos and bound by Old County Rd. to the west, Commercial St. south and Bransten Rd. north (figs.1-3 – for the purposes of this report, descriptive orientations place the freeway to the east and downtown San Carlos to the west.). The subject addresses, assessor's parcels (APN) and buildings are:

- 803 Old County Rd. (APN 146-035-02), with two extant structures, a 1963 commercial building at front and a 1971 metal storage warehouse at rear.
- 841 Old County Rd. (APN 146-182-10), with a c1946 concrete block warehouse building at front and 1977 dog kennels at rear (the latter attached to and associated with 851 Old County Rd.).
- 851 Old County Rd. (APN 146-182-11), with a c1950 concrete block warehouse building enclosed by 1977 additions.

With respect to potential historic resources on these parcels, the existing kennel structures at the rear of lot #10 and the associated additions to 851 Old County Rd. date to late 1977 to 1978. As that construction is less than 45 years of age and as they have no exceptional design or construction qualities, for planning purposes under CEQA, those built resources have no historic resource potential.

All of the extant development on these parcels occurred in the post-World War II period and were originally associated with the manufacturing and/or supply of building construction materials and equipment.

At 803 Old County Rd., the original, per-1960 construction and uses are no longer extant and the existing buildings date to 1963 and 1971. The original c1946 building at 841 Old County Rd. appears to remain, though its original use as a construction material warehouse has not existed since the 1950s. At 851 Old County Rd., a c1950 building again appears to remain yet again does not retain

[1] PES Environmental, Inc; *Phase 1 Environmental Site Assessment: 803-851 Old County Road, San Carlos, California;* November 30, 2021.
[2] San Mateo County directories, Library of Congress (loc.org), accessed Feb.-Mar.2022.
[3] *900-960 Industrial Rd., 987-1003-1011 Commercial St., San Carlos, Historic Resource Evaluations;* Dec. 28, 2020.

446 17th Street #302 Oakland CA 94612
510.418.0285 mhulbert@earthlink.net

its original construction material manufacturing and warehouse use, which was replaced in the late-1970s (when a directly adjoining building was replaced with the existing kennel facilities) and when new additions also wrapped that c1950 warehouse building.

Altogether, the extant buildings, which were evidently ultra-functional to begin with, have been altered and their historic uses lost.

Based on empirical as well as historical evidence, the subject building designs are without historical design or construction distinction. In each case, no detailed evidence of the buildings' origins has been located and no original architects, engineers, etc. are identifiable. While associated by proximity and by their mid-20th century building supply uses, which were common in this locale in that period, the properties and buildings have no design or construction relationships, neither were they unified by shared ownership or users – in fact, their ownership history remains, despite research efforts, unclear – nor have any important persons been identified as individually associated with these properties and buildings. Additionally, the subject parcels and their buildings are not directly associated with any events of historic significance because no individual discoveries, innovations or inventions of importance are identifiably associated.

Altogether, the predominate lack of specific records about the origins of these buildings underscore their lack of potential importance. Nor would the discovery of additional details about their origins alter the evaluative outcome.

This evaluation report therefore concludes that the three existing properties and four buildings at 803, 841 and 851 Old County Rd. in San Carlos do not meet any CR criteria so are not eligible for the CR.

SUMMARY HISTORIES

Prior to any development, the entire, approximately 20 acre block today bound by Old County Rd. (west), Bransten Rd. (north), Industrial Ave., (east) and Commercial St. (south) was, in November 1925, acquired by K. A. Winter and Charles Bransten from Asa Hull. Immediately thereafter, Winter and Bransten began the process of subdivision for industrial development by first indenturing the Southern Pacific Railroad, in May 1926, to create a rail spur through the property. From 1926-1929, K. A. Winter advertised the sale of industrial parcels in San Francisco newspapers, which ads identified Winter as the owner. Despite efforts, no deeds from Winter to subsequent owners have been located, in part due to the reality that a large number of official records were associated with Winter. Thus, it is not known to what extent the parcels on the subject block sold prior to the onset of the Great Depression or whether their sales followed.

The subject block is first depicted in a 1946 aerial (fig.4), which shows the rail spurs along with scattered development, including concentrations at its center and its western end. With respect to the parcels at the western end, none of the development seen in the 1946 aerial remains. Such early development included:

- The parcel at the corner of Old County and Bransten roads (lot #1) first housed a saw mill that, per directory listings, was operated by the Fryer Lumber Co. from 1947-1953, and which mill building was removed by the mid-1950s.
- On lot #10 (841 Old County), the then extant building at the rear of the lot may have been in place as early as 1936, as directory listings identified the CA Concrete Products Co. (and its successors) at 841 Old County from 1936-1951. That building was removed c1977. Another

facility also then existed at lot #3 (833 Old County) and which was an oil company from 1948 (Seaside Oil Co.) to 2004 (Rennco), when the former building and tanks were removed.

The properties were next depicted in the 1950 Sanborn map (fig.5), when the early buildings described above remained and by when two additional buildings were added: a warehouse on the front of lot #10, at 841 Old County (the rear building on that parcel having been assigned the address 839 and, by then, was in use as a furniture manufacturer); and a warehouse on lot #11 (851 Old County). The former was added c1947 for the CA Concrete Block Co./Calstone, and the latter added c1950 for Calstone. Both of those concrete block buildings remain, as do the partially ornamental concrete block perimeter site walls, which likely also date to c1950, as Calstone – whose products were undoubtedly used for display purposes – moved from these sites in 1951.

The 1965 Sanborn map (fig.6) shows the c1950 building at 803 Old County that replaced the earlier construction on that site while the other parcels remained the same. And the next (and latest) period of change occurred in the latter 1970s, when parcels #11 and 12 were under common ownership and, in part, common use. In 1977, the building supply business that apparently occupied the overall 841/851 site, Trico Building Supplies, was closed and the former manufacturing/warehouse building at the rear of 841 Old County Rd. was removed and replaced with the extant kennels. At that same time, the former warehouse at 851 Old County Rd. was altered and added to, also for dog care and kennel use. The front building at #841 likely then changed uses, although it is not presently known what business occupied that front building from 1977 into the mid-1980s.

Further details about property and building histories are included in the parcel-by-parcel summaries.

HISTORICAL SETTING

In the first half of the 20th century, fill of the San Francisco Bay shoreline and construction of the Bayshore Highway interconnecting San Francisco and San Jose provided a new landscape and development zone along the eastern boundaries of the cities of the San Francisco Peninsula, including San Carlos. The Bayshore Highway and associated bay fill dates to the late 1930s while the present-day Bayshore (aka James Lick) Freeway succeeded the highway within some twenty years. Based on historic topographic maps, in the 1940s, prior to any development, the subject block was essentially at the historic shoreline. Once filled, development was enabled eastward from the center of San Carlos, yet which development largely awaited the post-World War II period. As remains in evidence today, much of the surrounding development was industrial, yet commercial and residential development were also in the 1950s mix.

In addition to its eastern end having been filled shoreline, another characteristic that gave shape to the interior of the subject block was the railroad spur lines that entered the block near its southwestern corner and which spurs serviced each of the subject parcels, with the exception of the frontward building at #841, which did not have rail frontage.

Along Old County Rd. and the railroad as well as nearer to downtown, the central and western ends of the subject and adjoining blocks were first developed with industries. As noted, per the 1950 Sanborn, the earliest development on the subject sites were a saw mill at 803 and a sheet metal equipment and supply facility at the rear of 841. There were also other, similar uses on the subject block, including another lumber mill (Klamath Lumber Co.) on Bransten and another concrete block manufacturer (Western Pumistone) on Commercial. In fact, trading off, Klamath Lumber relocated to the 803 Old County Rd. property in 1957 while, c1951, Calstone relocated from 851 to the former Western Pumistone site on Commercial.

SUMMARY DESCRIPTIONS & HISTORIES

803 Old County Rd. (figs.7-10)

The primary building at 803 Old County Rd. is a 1-1/2 story, concrete commercial-industrial building fronting on Old County Rd. to the west with sides facing associated, adjoining lots and, directly behind, a freestanding, metal clad, 1-story industrial warehouse with a loading opening to the north. These two buildings occupy lot #2 (APN 046-135-020), while the directly associated site consists of side parcels #1 (north) and #3 (south) plus, to the rear (east), lots #4, 5, 6 and 16. These surrounding sites are flat and concrete paved, including an area on parcel #1 with concrete pavers. As the parcel map indicates, each of these lots were given shape by the railroad spurs, yet which shapes are not in evidence on site.

Per permit records, the two buildings at 803 Old Country Rd. are dated to 1963 and 1971, respectively. The front building, its plan approximately 140 feet deep by 50 feet wide, was constructed as an office-warehouse for its then property owner, Howard C. Hansen and by the south bay industrial contractor Holvick, which permit was assigned to the address 821 Old County, as the corner site (lot #1) was historically #803. Per directory listings, from 1957-1967, the occupants of 803/821 Old County Rd. was Klamath Lumber Co., while the rear storage building was constructed for Rayberg Lumber Co. and without identification of a contractor, nor did either building have an identified architect or engineer. Rayberg occupied this property from c1968-c1981. Since 1981, the garden supply operations have occupied 803 and its associated parcels. Aside from this general information, no plans or images have been found.

The existing front building is a tall, concrete walled structure with a flat roof. Two pebble-finished infill wall panels flank the original front entry bay. That central front entry has a pair of aluminum framed doors with flanking door lites under a shallow, flat concrete canopy with signage above – yet that entry way is not in use and has been blocked by a low planting bed with a knee wall of cast stonework. The front sidewalk has also been paved with cast stone material. At the north side, facing the driveway, parking area and material storage yard, the building's frontward three bays are again infilled with pebble-finished concrete wall panels, each with a mezzanine level aluminum framed window centered in the plain concrete walls above. A pair of aluminum frame doors, which evidently serve as the existing entry way, are centered in the second bay. Along this side, to the east, there are three loading door bays with metal industrial roll-up doors and a solid bay at the very east end. Its rear (east) and south side walls are solid – the south wall at present has landscape material piled high against it.

The rear building is a gabled metal clad and metal roofed material storage structure, its gabled walls facing south and north and with a large opening toward the north.

841 Old County Rd. (figs.11-13)

The existing frontward building that occupies a portion of the 841 Old County Rd. parcel (APN 046-182-100) is a tall one-story warehouse structure. It is some 110 feet wide (south-north) by 30 feet deep and is constructed of concrete block walls with a wood framed and metal clad shedded roof, sloping downward form front (west) to rear. Facing Old County Rd., the front wall has three loading doors at its center, a flush entrance door and composition windows at the left (north), and a steel framed industrial window at its right side. Another egress door and window are in the north side wall. The long rear wall has a single egress door and is otherwise a monolithic block wall. And the south side exterior wall is concealed by adjacent construction that partly stands on this parcel yet is associated with the uses at 851 Old County Rd.

While the 841/851 parcels are legally separate, they have been under shared ownership and a partially shared kennel use sine the 1970s. Thus, the kennel uses and structures at the rear of parcel #10 are directly associated with the building and address at 851 Old County Rd.

Though there are again no records of the origins of the front building at 841 Old County Rd., it was first in evidence in the 1950 Sanborn, where it was labeled a machinery warehouse and was then, presumably associated with the CA Concrete Block Co. Based on this general information, that frontward building dates to c1947 and to the CA Concrete Block Co., which conclusion is supported by its concrete block construction. The concrete block perimeter site walls are also presumed to date to that period and company.

Permit records indicate that the existing kennels were constructed in 1977-1978 for Prion, Inc. and have, since 1987, been operated as Peninsula Pet Resort. Those kennels replaced the previous building at the rear of lot #10 and which had a variety of uses: first as a sheet metal equipment company (Dreis Sheet Metal, 1947-1949); then as a furniture manufacturer (Campbell & Sons, 1950-1952); and thereafter as part of a building supply business that also then occupied 851 Old County Rd. (Trico Building Supply, 1954-1977).

851 Old County Rd. (figs.11,14-16)

The bulk of the buildings and structures at and associated with 851 Old County Rd. were constructed in 1977-1978 as a dog care and boarding facility, which uses remain. That facility converted the property from its former building supply uses, which former uses spanned from c1947 to 1977, and also adapted a pre-existing building at 851 Old County Rd. yet which is, today, enclosed within the 1977-1978 construction. That remaining building was erected c1950 for its then user, Calstone, a manufacturer of concrete products, who would have occupied it for just a couple of years as they moved from the site c1951. Yet again, no records have been found for this c1950 building. Its earliest depiction, in the 1950 Sanborn map, recorded that it was another warehouse of concrete block construction. Its low-slope bowed roof is visible in aerial views yet its exterior walls are not visible at the exterior except partially within the west facing loggia. Thus, the c1950 building has been altered beyond recognition, though it is also understood that it was and is a utilitarian building. This parcel's ownership history is, until recently, not known and its early owners and users were not one and the same. The current business was founded by Wanda Adams in 1987. She and her husband, Arthur L. Adams, presumably first acquired parcels #10-11 c1973.

ASSOCIATED PERSONS

Individuals historically associated with the subject properties and building include the following.

At the time of its first subdivision in the mid-1920s, Karl A. Winter (1872-1944) was the owner of the subject block. In the 1930 U.S. census (@heritagequest.com), Winter was a resident of Oakland and his occupation was identified as bill board advertising, though the numerous property transactions (deeds, reconveyances, leases, etc.) under his name confirm he was also a property investor.

Per available permit records, Howard C. Hansen (1905-1991) was the property owner of the 803 Old County Rd. parcels from at least 1963. Aside from records associated with these properties, based on directory listings, Hansen was a concrete contractor (Hansen & Kellogg, 19402; H. C. Hansen, 1950s-60s), though those businesses were located in Belmont so were not associated with the Old County Rd. properties. No other historical records about Hansen have been found.

The 841-851 Old County Rd. (lots #10-11) were first owned by Arthur L. and Wanda Mae Adams of Adams Enterprises, c1973. Wanda Adams founded the Peninsula Pet Resort on these parcels in 1987.[4] Again, no historical information for the Adams has been found while their ownership briefly overlaps the historical period.

BUILDERS

In permit records, the builder of the extant 803 Old County Rd. building (then addressed 821 County Rd.) was identified as Holvick, deRegt & Koering, aka Carl A. Holvick & Co.

Holvick was a general building contractor, led by Carl A. Holvick, who built on the San Francisco Peninsula beginning in 1950. Obituaries for Holvick (1913-2003) state that he was a "pioneer builder" with an expertise in tilt-up concrete industrial structures, and specifically the buildings of Silicon Valley.[5] His obituaries, wherein no individual buildings were identified, also cite a 1961 newspaper article entitled "He Builds Them By The Week," while further stating that his industrial buildings "were popping up like mushrooms all over the peninsula." Based on current research, only a few Holvick project examples are generally identifiable (2600 El Camino Real, Palo Alto, demolished; 3181 Porter Dr., Palo Alto, demolished; Clarkson Co., Palo Alto; Bohannon Industrial Park, Menlo Park, demolished).

HISTORIC CONTEXTS

As summarized above, relative to the historical setting of the subject block, there are two primary historical contexts.

Historic Development Context

The development context of the subject and adjoining blocks is strictly post-war, as development in the immediate vicinity occurred only after WWII. This development context is directly situated in the post-World War II, American suburbanization and transportation boom, which context also embodied the outset of large-scale conversion of agricultural land. This development context was far-ranging in the post-war period throughout the region, including the towns and cities of the San Francisco Peninsula, each of which then experienced extensive new industrial, commercial and residential development.

Historic Architectural Context

Given their period of development, each of the subject resources relates to mid-20th century, commercial and industrial design and construction.

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4 From https://www.peninsulapetresort.com (accessed Mar.2022).
5 "Holvick, Carl - 1913-2003." *SF Chronicle,* Sat. Aug.2, 2003 @ http://www.sfgate.com/news/article/HOLVICK-Carl-2562862.php (accessed Mar.2022). Note: The referenced 1961 new article has not been located.

While smaller cities the likes of San Carlos have not addressed historic contexts re: modern architecture and landscape architecture, other regional jurisdictions have prepared context statements for Modern resources. For example, San Jose's Modern context statement and which encompasses architecture in the overall period from 1935-1975 yet which does not have a directly applicable category for Modern industrial resources.[6] Thus, the most applicable historic context statement to the subject buildings is the City of San Francisco's which, in addition to addressing the broad range of Modern resources specifically addresses the Midcentury Modern style.[7] As documented therein:

Midcentury Modern and late interpretations of the International Style were the primary styles applied to everyday residential, commercial, and institutional buildings. Midcentury Modern design elements include:

- *Cantilevered roofs and overhangs*
- *The use of bright or contrasting colors*
- *Projecting eaves*
- *Canted windows*
- *Projecting boxes that frame the upper stories*
- *Stucco siding*
- *Spandrel glass*
- *Large expanses of windows˙*
- *Flat or shed roof forms*
- *Vertical corrugated siding*
- *Stacked roman brick cladding*
- *And, occasionally, vertical wood siding.*
- *New technology and materials, such as plastic laminates, spandrel glass, and anodized metal sheaths were increasingly incorporated in midcentury modern buildings.*

Midcentury Modern design reflected the emerging philosophy of indoor-outdoor living. Design elements such as overhanging trellises, pergolas, atriums, and planters integrated in the building's design literally wedded the building form to the environment. Projecting trellises, in particular, were a notable design element of residential, commercial, and institutional buildings.[8]

While these descriptions and characterizations are most applicable to architecturally designed residential, commercial and institutional resources, the overall characterization is applicable toward gauging the character of built resources from the mid-century period.

EVALUATION

The three subject parcels and their four buildings have not previously been evaluated for historic resource eligibility. In order to address the requirements of the California Environmental Quality Act (CEQA) specific to historic resources, the current effort has been requested and is intended to provide such historic resource evaluation.

Under CEQA, which applies the California Register of Historical Resources (CR) evaluation criteria,

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[6] Past Consultants. *San Jose Modernism Context Statement.* June 2009.
[7] Mary Brown, San Francisco City and County Planning Department. *San Francisco Modern Architecture and Landscape Design 1935-1970: Historic Context Statement*, September 30, 2010.
[8] *San Francisco Modern,* pp.115-116.

historic resources are generally greater than 50 years old. However, for planning purposes, 45 years of age is a recommended threshold at which properties and their buildings should be evaluated as historic resources. As noted, in this combined case, there are three parcels with four built resources completed before early 1977, thus greater than 45 years:

- 803 Old County Rd., with two extant structures, a 1963 commercial building at front and a 1971 metal storage warehouse at rear.
- 841 Old County Rd., with a c1946 concrete block warehouse building at front.
- 851 Old County Rd., with a c1950 concrete block warehouse building (enclosed by 1977 additions).

To be eligible for listing on the CR, a resource must be historically significant at the local, state, or national level, under one or more of the following four criteria.

1. *It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;*

   In their post-WWII development context, there is no potential historical significance associated with these former materials manufacturing and warehousing uses or buildings, which generally fit a far-ranging post-war development pattern.

   Thus, as there is no evidence, individually or collectively, of any historic events directly associated with the subject properties, these three properties and their buildings do not meet *CR criterion 1.*

2. *It is associated with the lives of persons important to local, California, or national history;*

   Few individuals are identifiably associated with the subject properties in their potential historical period, and there is at present no specific evidence of the property owners associated with their mid-20th century development period.

   While the early-20th century originator of the properties, K. A. Winter, may have been a noteworthy and, likely, wealthy person, there is no evidence that he is a person of historic importance, neither is there evidence that he had any direct association to the existing mid-20th century development on these parcels. Nor does any other of the few identifiably associated persons have any potential historic importance. Consequently, none of the subject resources meet *CR criterion 2.*

3. *It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values;*

   Each of the four existing built resources were constructed in the post-WWII period. The earliest building in this grouping, the front warehouse building at 841 Old County, dates to c1947, followed by the c1950 warehouse at 851, the 1963 warehouse/office building at 803 and, the latest (of greater than 45 years of age), the 1971 storage building at the rear of 803 Old County.

   In their historic architectural context, each of these four buildings is a generic light-industrial type structure without architectural character or construction interest. Each of these buildings lack distinction in terms of mid-20th century design and construction, as there are no inventive, unique, prototypical or distinctive design forms, building systems or materials. Rather, the light industrial buildings exhibit utilitarian and expeditious design and construction. Additionally, the c1950 building at 851 Old County Rd has been substantially altered and added to.

Further, no evidence has been found to identify any original engineers, architects or designers. One contractor is identifiable relative to 803 Old County Rd., Holvick, the builder of its 1963 office-warehouse structure, yet who are not historically important builders.

Lastly, while most of these built resources directly interrelate to their mid-20th century period of development, there is no evidence of any planning or design interrelationships. Again, the buildings were individually expedient and utilitarian.

As the four subject buildings do not embody any design or construction distinction in terms of type, period, region or methods; as they are not the work of any identified architect, engineer or designer; neither is the identified builder identifiably important; nor do they possess any artistic values; the four subject buildings at 803-841-851 Old County Rd. are not eligible for the CR under *CR Criterion 3.*

4. *It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation;*

   The three subject properties and buildings have not yielded and do not appear to have the potential to yield any important historic information beyond the present historical record (prehistory is outside the scope of this historical effort). As addressed herein, the subject resources do not present any historic information specific or unique to their context, setting or locale; each of the buildings are plain, light-industrial structures of no identifiable design or construction interest; none of their uses have identifiable importance and there are no associated individuals of historical interest. Thus, relative to the subject of this evaluation – potential historic resources – despite detailed research efforts, the four built resources have not yielded and have no identifiable potential to yield important historical information, so do not meet *CR Criterion 4.*

In conclusion, the extant resources at 803-841-851 Old County Rd. do not meet any applicable criteria so are not eligible for the CR. This conclusion is also plainly visible, as none of these buildings, individually and collectively, suggest or present noteworthy uses, designs or construction. In addition, the predominate lack of records about the origins of these buildings further underscores their lack of potential importance. Finally, the discovery of additional details about their origins would not alter the evaluative outcome.

Signed:

Mark Hulbert
Preservation Architect

attached: Figs.1-16 (pp.10-19)

Fig.1 – 803-841-851 Old County Rd. (highlighted) - Location aerial (Google Earth, 2021, north at top of page)

Fig. 2 – 803-841-851 Old County Rd. - Site aerial with parcel lines and subject buildings indicated
(Google Earth, 2020, north at top)

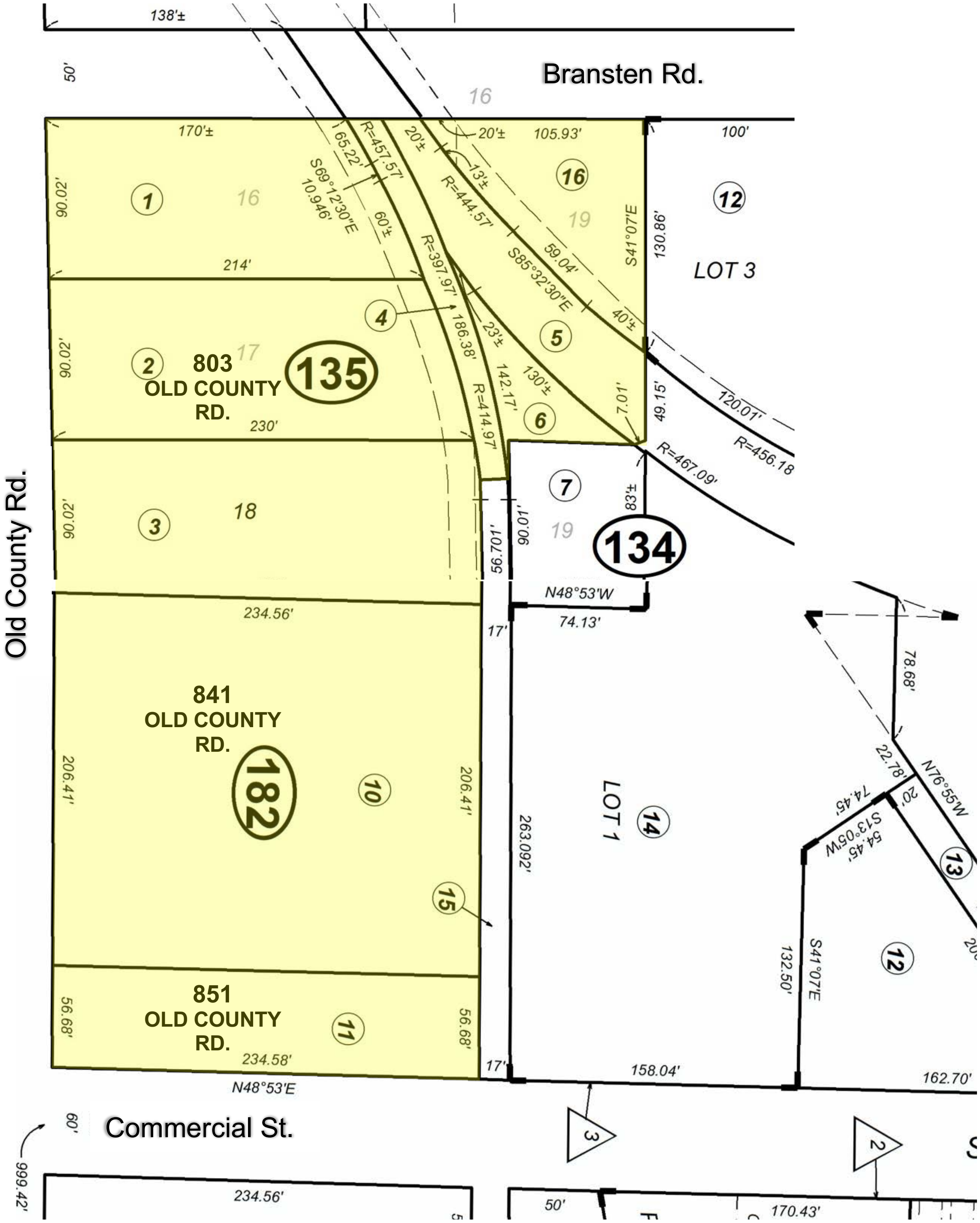

Fig.3 – 803-841-851 Old County Rd. - Assessor's parcel maps (composite, partially skewed, north at upper right)

Fig.4 – 803-841-851 Old County Rd. - Aerial view, 1946, with addresses
(from PES Environmental, Inc; *Phase 1 Environmental Site Assessment*, north at top)

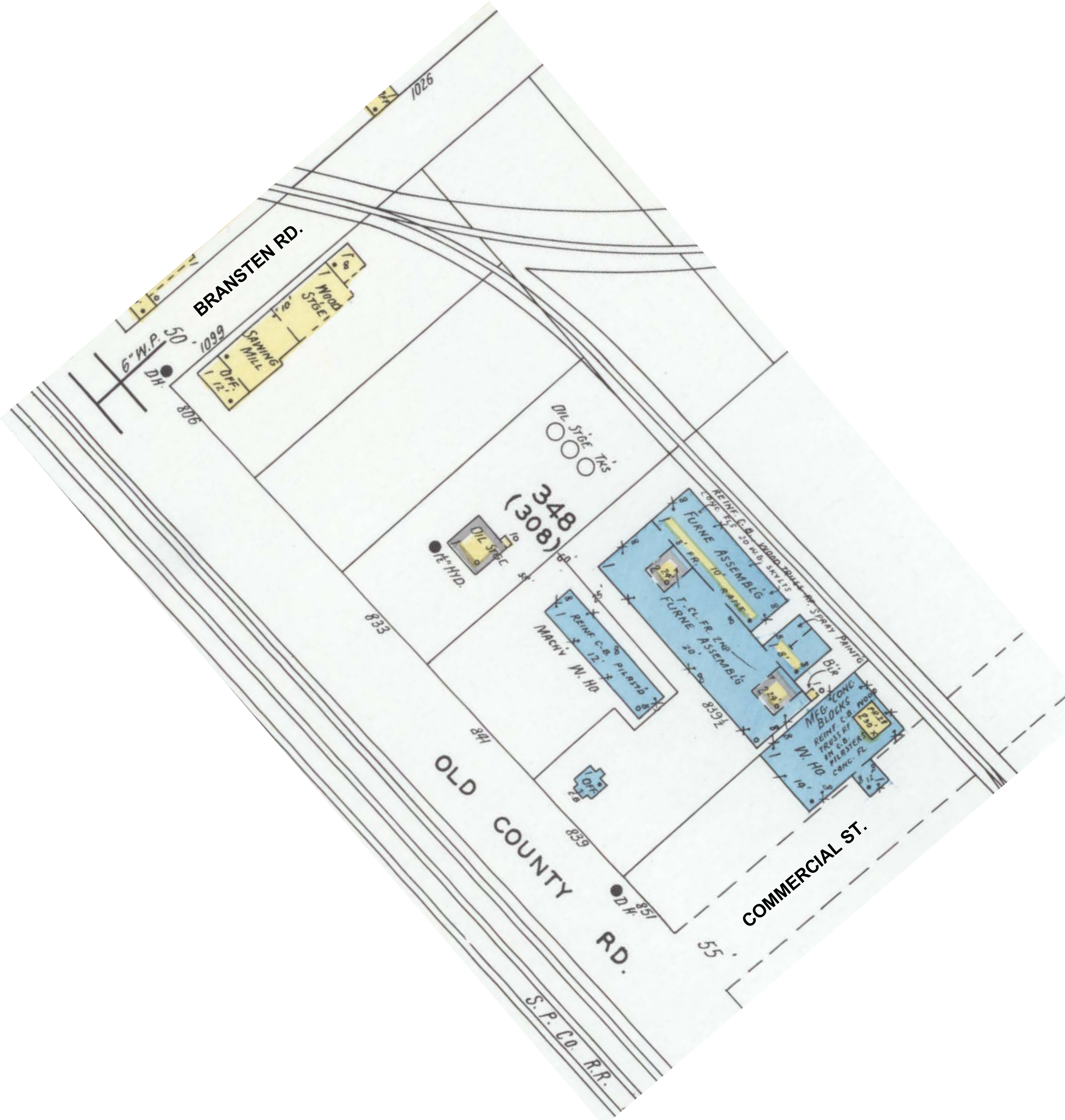

Fig.5 – 803-841-851 Old County Rd. - from Sanborn map, 1950 (note street addresses, from Library of Congress, north at top)

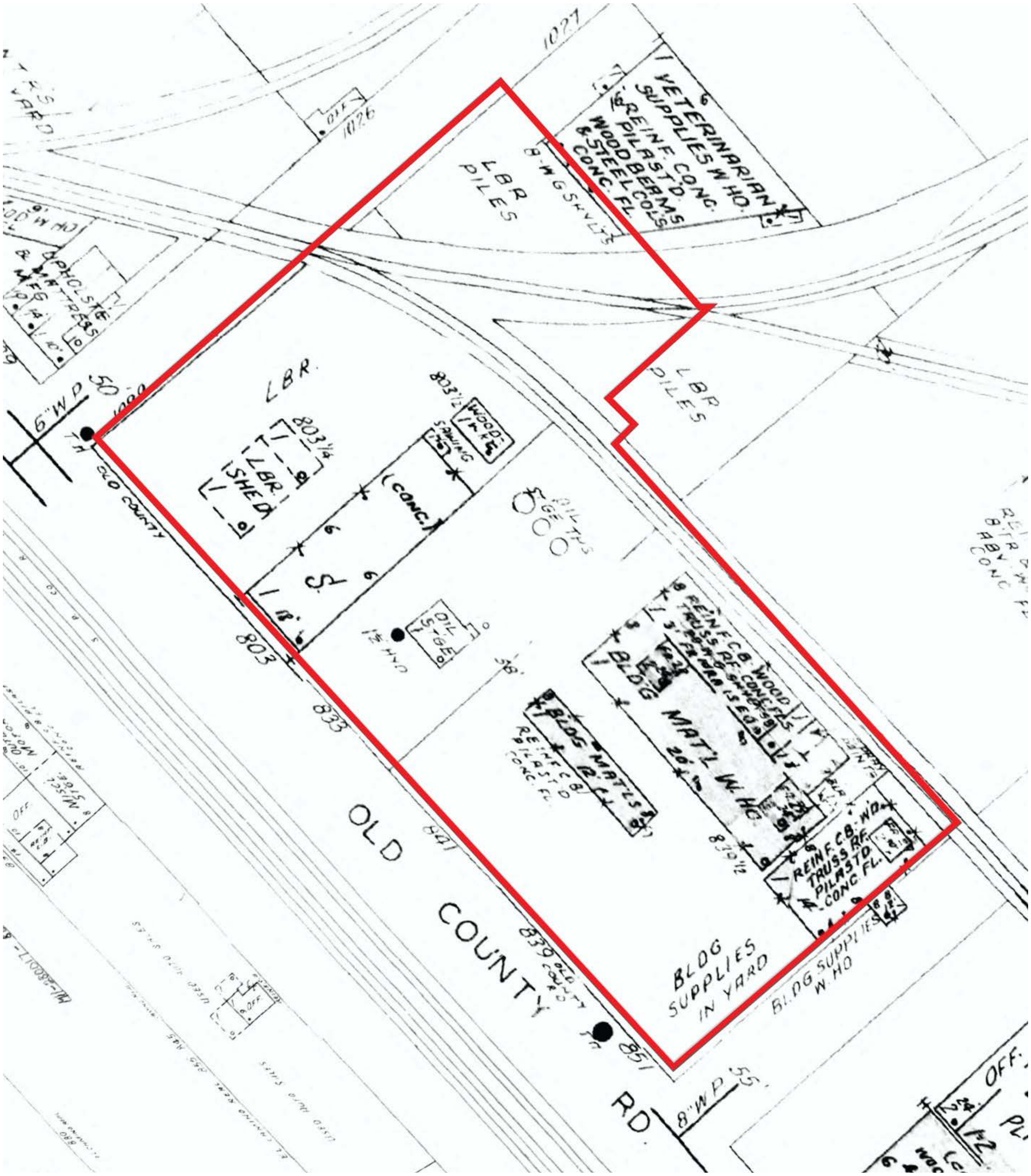

Fig.6 – 803-841-851 Old County Rd. - from 1965 Sanborn map
(from PES Environmental, Inc; *Phase 1 Environmental Site Assessment*, north at top)

Fig.7 – 803 Old County Rd. – Aerial (north at upper right – figs.7-17, from Google Earth, 2021)

Fig.8 – 803 Old County Rd. – Front (west), from Old County Rd.

Fig.9 – 803 Old County Rd. – North side and front (west), from Old County Rd.


Fig.10 – 803 Old County Rd. – North side, rear building (at center left) and rear of front building (at right), from Bransten Rd.

Fig.11 – 841 (above) & 851 (below) Old County Rd. – Aerial (north at upper right)
(note: c1950 building at 851 highlighted)

Fig.12 – 841 Old County Rd. – Front (west), from Old County Rd.

Fig.13 – 841 Old County Rd. – Front (west) with perimeter site wall in foreground, from Old County Rd.

Fig.14 – 851 Old County Rd. – Front (west) with perimeter site wall in foreground, from Old County Rd.

Fig.15 – 851 Old County Rd. – Front (west) and south side, from Commercial St.

Fig.16 – 851 Old County Rd. – South side and part rear, from Commercial St.

CALIFORNIA
HISTORICAL
RESOURCES
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SYSTEM

ALAMEDA
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CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
https://nwic.sonoma.edu

ACCESS AGREEMENT SHORT FORM

File Number: 21-1145

I, the the undersigned, have been granted access to historical resources information on file at the Northwest Information Center of the Califronia Historical Resources Information System.

I understand that any CHRIS Confidential Information I receive shall not be disclosed to individuals who do not qualify for access to such information, as specified in Section III(A-E) of the CHRIS Information Center Rules of Operation Manual, or in publicly distributed documents without written consent of the Information Center Coordinator.

I agree to submit historical Resource Records and Reports based in part on the CHRIS information released under this Access Agreement to the Information Center within sixy (60) calendar days of completion.

I agree to pay for CHRIS services provided under this Access Agreement within sixty (60) calendar days of receipt of billing.

I understand that failure to comply with this Access Agreement shall be grounds for denial of access to CHRIS Information.

Print Name: Rebecca Auld
Date:
Signature:
Affiliation: Lamphier-Gregory, Inc.
Address:
City/State/ZIP:
Billing Address (if different from above):
Special Billing Information
Telephone: (510) 535-6670
Email: rauld@lamphier-gregory.com
Purpose of Access:
Reference (project name or number, title of study, and street address if applicable):
841 Old County Project
County: SMA
USGS 7.5' Quad: San Mateo

This is not an invoice. Sonoma State University will send separate Invoice

CALIFORNIA
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January 27, 2022 NWIC File No.: 21-1145

Rebecca Auld
Lamphier-Gregory, Inc.
4100 Redwood Road, Ste 20A - #601
Oakland, CA 94619

Re: Record search results for the proposed 841 Old County Project

Dear Rebecca Auld:

Per your request received by our office on the 20th of January, 2022, a rapid response records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) base maps that reference cultural resources records and reports, historic-period maps, and literature for Alameda County. Please note that use of the term cultural resources includes both archaeological resources and historical buildings and/or structures.

The proposed project entails an approximately 3.4-acre site is bounded by Bransten Road to the north, Old County Road to the west, and Commercial Street to the south. The site includes the following addresses: 803, 821, 833, 841, and 851 Old County Road (Assessor's Parcel Numbers 046-133-160, 046-134-050 and -060; 046-135- 010, -020, -030, and -040; and 046-182-100, -110, and -150). The site currently contains various commercial buildings and retail spaces, along with associated surface parking.

The project sponsor is proposing to demolish all existing buildings and to construct two new office/R&D buildings with a total of 79,445 square feet of building space, a 2-level underground parking structure, and some ground level open space, landscaping, and circulation/parking elements. Construction details are not yet final, but construction activities are anticipated to disturb all onsite soils (e.g., during demolition, site grading and preparation, and foundation work) with subsurface excavation up to 25 feet. The site is almost fully covered by the existing buildings and asphalt surface parking, and is known to be underlain by 1 to 11 feet of undocumented fill with alluvial deposits below.

Review of the information at our office indicates that there have been three cultural resource studies that covers up to approximately 100% of the 841 Old County project area (see enclosed Report Listing). This 841 Old County project area contains no recorded archaeological resources. The State Office of Historic Preservation Built Environment Resources Directory (OHP BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists no recorded buildings or structures within or adjacent to the proposed 841 Old County project area. In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the proposed 841 Old County project area.

At the time of Euroamerican contact, the Native Americans that lived in the area were speakers of the Ramaytush language, which is part of the Costanoan/Ohlone language family (Levy 1978: 485). Using Milliken's study of various mission records, the proposed project area is located within the lands of the Lamchin tribe, whose territory held the portion of the bay shore of the San Francisco Peninsula from present day Belmont south to present day Redwood City, and adjacent interior valleys to the west (Milliken 1995: 246-7).

Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of San Mateo County have been found in areas marginal to the San Francisco Bayshore and its associated wetlands, near intermittent and perennial fresh watercourses, and near areas populated by oak, buckeye, manzanita, and pine, as well as near a variety of plant and animal resources. The 841 Old County project area is located in the San Carlos area approximately 900 meters from the current margins of the San Francisco Bayshore at Steinberger Slough near its confluence with Smith Slough and Pulgas Creek, approximately 270 meters southwest of the historic bayshore and marshland margins located approximately 250 meters north of Pulgas Creek. Aerial maps indicate buildings and paved areas, with some small areas of dirt. Given the similarity of these environmental factors, there is a moderate to high potential for unrecorded Native American resources to be within the proposed 841 Old County project area.

Review of historical literature and maps indicated historic-period activity within the 841 Old County project area. Early San Mateo County maps indicated the project area was located within the lands of T.G. Phelps (Bromfield 1894). As there are no buildings indicated on the maps, it is unclear if this land was developed at this time. With this information in mind, there is a moderate potential for unrecorded historic-period archaeological resources to be within the proposed 841 Old County project area.

The 1949 San Mateo USGS 7.5-minute topographic quadrangle depicts two buildings and railroad spurs of the nearby Southern Pacific Railroad within the 841 Old County project area. If present, these unrecorded buildings or structures meet the Office of Historic Preservation's minimum age standard that buildings, structures, and objects 45 years or older may be of historical value.

RECOMMENDATIONS:

1) There is a moderate to high potential for Native American archaeological resources and a moderate potential for historic-period archaeological resources to be within the project area. Due to the general area information provided in the one of the surveys with only approximate areas of field survey (Jurich and Grady 2011), as well as the passage of time since the other two previous surveys (BioSystems Analysis Inc. 1989, Holman 1996), and the changes in archaeological theory and method since that time, we recommend a qualified archaeologist conduct further archival and field study for the entire project area to identify cultural resources.

The proposed project area, however, has been highly developed and is presently covered with asphalt, buildings, or fill that obscures the visibility of original surface soils, which negates the feasibility of an adequate surface inspection. Field study may include, but is not limited to, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of buried archaeological resources. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

2) We recommend the lead agency contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/373-3710.

3) If the proposed project area contains buildings or structures that meet the minimum age requirement, prior to commencement of project activities, it is recommended that this resource be assessed by a professional familiar with the architecture and history of San Mateo County. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

4) Review for possible historic-period buildings or structures has included only those sources listed in the attached bibliography and should not be considered comprehensive.

5) If archaeological resources are encountered **during construction,** work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

6) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: https://ohp.parks.ca.gov/?page_id=28351

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact this office if you have any questions, (707) 588-8455.

Sincerely,

Jillian Guldenbrein
Researcher

LITERATURE REVIEWED

In addition to archaeological maps and site records on file at the Northwest Information Center of the Historical Resources Information System, the following literature was reviewed:

Brabb, Earl E., Fred A. Taylor, and George P. Miller

1982 *Geologic, Scenic, and Historic Points of Interest in San Mateo County, California*. Miscellaneous Investigations Series, Map I-1257-B, 1:62,500. Department of the Interior, United States Geological Survey, Washington, D.C.

Bromfield, Davenport

1894 Official Map of San Mateo County, California

Helley, E.J., K.R. Lajoie, W.E. Spangle, and M.L. Blair

1979 *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning*. Geological Survey Professional Paper 943. United States Geological Survey and Department of Housing and Urban Development.

Levy, Richard

1978 Costanoan. In *California*, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Milliken, Randall

1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Anthropological Papers No. 43, Menlo Park, CA.

Nelson, N.C.

1909 *Shellmounds of the San Francisco Bay Region*. University of California Publications in American Archaeology and Ethnology 7(4):309-356. Berkeley. (Reprint by Kraus Reprint Corporation, New York, 1964)

Nichols, Donald R., and Nancy A. Wright

1971 Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California. U.S. Geological Survey Open File Map. U.S. Department of the Interior, Geological Survey in cooperation with the U.S. Department of Housing and Urban Development, Washington, D.C.

San Mateo County Historic Resources Advisory Board

1984 San Mateo County: Its History and Heritage. Second Edition. Division of Planning and Development Department of Environmental Management.

State of California Department of Parks and Recreation

1976 *California Inventory of Historic Resources*. State of California Department of Parks and Recreation, Sacramento.

State of California Department of Parks and Recreation and Office of Historic Preservation

1988 *Five Views: An Ethnic Sites Survey for California*. State of California Department of Parks and Recreation and Office of Historic Preservation, Sacramento.

State of California Office of Historic Preservation **
2020 *Built Environment Resources Directory*. Listing by City (through March 3, 2020). State of California Office of Historic Preservation, Sacramento.

**Note that the Office of Historic Preservation's *Historic Properties Directory* includes National Register, State Registered Landmarks, California Points of Historical Interest, and the California Register of Historical Resources as well as Certified Local Government surveys that have undergone Section 106 review.

Report List

NWIC File # 21-1145 841 Old County Project

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-011396		1989		Technical Report of Cultural Resources Studies for the Proposed WTG-WEST, Inc., Los Angeles to San Francisco and Sacramento, California: Fiber Optic Cable Project	BioSystems Analysis, Inc.
S-018235	Voided - S-021711	1996	Miley Paul Holman	Archaeological Field Inspection of a Box Culvert Replacement Project at Pulgas Creek and Old County Road, San Carlos, San Mateo County, California (letter report)	Holman & Associates

Report List

NWIC File # 21-1145 841 Old County Project

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-048738		2011	Denise Jurich and Amber Grady	California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Archaeological Survey Report, Technical Report [Draft]	PBS&J

Report List

NWIC File # 21-1145 841 Old County Project

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-048738a		2011	Amber Grady and Richard Brandi	California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Historic Architectural Survey Report, Technical Report [Draft]	PBS&J

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 8, 2022

Rebecca Auld
Lamphier-Gregory

Via Email to: rauld@lamphier-gregory.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, 841 Old County Road Project, San Mateo County

Dear Ms. Auld:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

ENERGY CALCULATIONS

ATTACHMENT C

to the
841 Old County Road Project Initial Study / Mitigated Negative Declaration

Construction Energy Use

To support the Energy Analysis for the following project: 841 Old County

Construction Equipment/Vehicles

	# of Vehicles	Hrs per Day	Horse-power	Load Factor	Days in Phase	Fuel Used (gallons)
Demolition						
Rubber Tired Dozers	2	2	247	0.4	20	418
Concrete Saws	1	0.1	81	0.73	20	7
Excavators	3	8	158	0.38	20	1,525
Below Grade Excavation/Grading						
Graders	1	0.7	187	0.41	65	185
Excavators	2	8	158	0.38	65	3,303
Rubber Tired Dozers	1	0.7	247	0.4	65	238
Tractors/Loaders/Backhoes	2	3.9	97	0.37	65	1,070
Below Grade Foundation						
Excavators	1	8	158	0.38	50	1,270
Tractors/Loaders/Backhoes	1	4	97	0.37	50	422
Garage Concrete						
Cranes	1	8	231	0.29	87	2,466
Forklifts	3	6	89	0.2	87	1,639
Generator Sets	1	1.8	84	0.74	87	572
Phase I - Building Construction North						
Cranes	1	8	231	0.29	180	5,103
Forklifts	3	6	89	0.2	180	3,391
Tractors/Loaders/Backhoes	2	1.8	97	0.37	180	1,367
Welders	3	0.9	46	0.45	180	592
Phase I Site						
Pavers	2	0.5	130	0.42	80	231
Paving Equipment	2	0.5	132	0.36	80	201
Rollers	2	0.5	80	0.38	80	143
Tractors/Loaders/Backhoes	2	3	97	0.37	80	1,013
Phase II - Building Construction South						
Cranes	1	8	231	0.29	200	5,670
Forklifts	3	6	89	0.2	200	3,768
Tractors/Loaders/Backhoes	2	1.6	97	0.37	200	1,351
Welders	3	0.8	46	0.45	200	584
Phase II Site						
Pavers	2	0.5	130	0.42	80	231
Paving Equipment	2	0.5	132	0.36	80	201
Rollers	2	0.5	80	0.38	80	143
Tractors/Loaders/Backhoes	2	3	97	0.37	80	1,013
Architectural Coating						
Air Compressors	0	0	78	0.48	18	0
Total Fuel Used for Construction Equipment/Vehicles						**38,118** gallons (diesel)

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors used in the above calculations are [1]
(in gallons per horsepower-hour/BSFC)

0.0588 <100 horsepower
0.0529 >100 horsepower

Worker Trips

Phase	MPG [2]	Trips	Trip Length (miles)	Total Miles per Day	Days in Phase	Fuel Used (gallons)	
Demolition	24	15	10.8	162	20	135	
Below Grade Excavation	24	15	10.8	162	65	439	
Below Grade Foundations	24	5	10.8	54	50	113	
Garage Concrete	24	234	10.8	2527.2	87	9,161	
Phase I Building Construction	24	234	10.8	2527.2	180	18,954	
Phase I Site	24	20	10.8	216	80	720	
Phase II Building Construction	24	234	10.8	2527.2	200	21,060	
Phase II Site	24	20	10.8	216	80	720	
Total Fuel Used for Construction Worker Trips						**51,301**	gallons (gasoline)

Vendor Trips

Phase	MPG [2]	Trips	Trip Length (miles)	Total Miles per Day	Days in Phase	Fuel Used (gallons)	
Demolition	7.4	0	7.3	0	20	0	
Below Grade Excavation	7.4	0	7.3	0	65	0	
Below Grade Foundations	7.4	0	7.3	0	50	0	
Garage Concrete	7.4	105	7.3	766.5	87	9,012	
Phase I Building Construction	7.4	105	7.3	766.5	180	18,645	
Phase I Site	7.4	0	7.3	0	80	0	
Phase II Building Construction	7.4	105	7.3	766.5	200	20,716	
Phase II Site	7.4	0	7.3	0	80	0	
Total Fuel Used for Vendor Trips						**48,372**	gallons (diesel)

Hauling Trips

Phase	MPG [2]	Trips in Phase	Trip Length (miles)	Total Miles in Phase	Fuel Used (gallons)	
Demolition	7.4	546	20	10920	1,476	
Below Grade Excavation	7.4	15125	20	302500	40,878	
Below Grade Foundations	7.4	0	20	0	0	
Garage Concrete	7.4	8080	20	161600	21,838	
Phase I Building Construction	7.4	380	20	7600	1,027	
Phase I Site	7.4	26	20	520	70	
Phase II Building Construction	7.4	590	20	11800	1,595	
Phase II Site	7.4	24	20	480	65	
Total Fuel Used for Hauling Trips					**66,949**	gallons (diesel)

Total Construction Fuel Use	**153,439**	**gallons (diesel)**
	51,301	**gallons (gasoline)**

Fuel Use Converted to MMBtu

	Total Construction Fuel Use (gallons)	Conversion Factor Btu/gallon	Source	Fuel Converted to Energy Use	
Diesel	153,439	137,381	[3]	21,080	MMBtu
Gasoline	51,301	109,786	[4]	5,632	MMBtu
Total Energy Use from Construction Fuel				26,712	MMBtu

Operational Energy Use

Operational Vehicular Fuel Use

Gross Annual VMT	7,098,639

Fleet Class	2026 Fleet Mix	VMT per Class	Fuel Ecomony [3]	Fuel Consumption (gallons)		
Light Duty Auto (LDA)	0.430608	3056730.7	30.9	98923.33		
Light Duty Truck 1 (LDT1)	0.03901	276917.91	26.63	10398.72		
Light Duty Truck 2 (LDT2)	0.288195	2045792.3	24.36	83981.62		
Medium Duty Vehicle (MDV)	0.168896	1198931.7	20.2	59353.06		
Motorcycle (MCY)	0.00432	30666.12	37.06	827.47	Total Gasoline	253,484
Light Heavy Duty 1 (LHD1)	0.033969	241133.67	18.23	13227.30		gallons
Light Heavy Duty 2 (LHD2)	0.007587	53857.374	16.24	3316.34		
Medium Heavy Duty (MHD)	0.012483	88612.311	9.43	9396.85		
Heavy Heavy Duty (HHD)	0.007199	51103.102	6.42	7959.98		
Other Bus (OBUS)	0.004815	34179.947	8.26	4138.01		
Urban Bus (UBUS)	0.001838	13047.298	5.17	2523.66		
School Bus (SBUS)	0.00042	2981.4284	7.25	411.23		
Motorhome (MH)	0.000661	4692.2004	9.91	473.48	Total Diesel	41,447
						gallons

Note that the above numbers represent gross fuel consumption.

The project is required to implement a TDM program, which would be expected to reduce VMT, resulting in the following gasoline usage:

Anticpated TDM VMT reduction: [4]	20%	
Resultant Total Gasoline Use with TDM Reductions:	202,787	gallons (gasoline)

	Total Fuel Use (gallons)	Conversion Factor Btu/gallon	Source	Fuel Converted to Energy Use	
Diesel	41,447	137,381	[3]	5,694	MMBtu
Gasoline	202,787	109,786	[4]	22,263	MMBtu
Total Energy Use from Operational Fuel				**27,957**	MMBtu

Operational Built Environment

Type of Energy	Annual Usage	Units	Converted to MMBtu
Electricity	4.15E+06	kWh	14,167
Natural Gas	0	kBtu	0

Sum of above		
Total Annual Operational Energy Use	**42,124**	**MMBtu**

Existing and Net Energy Use

Net Operational Vehicular Fuel Energy Use

To determine the net increase in fuel usage, fuel usage of the existing uses at the site can be subtracted from the gross consumption above. The

Existing Use VMT:	2,080,916	
Resultant Net Annual Gasoline Use:	143,342	gallons
Resultant Net Annual Diesel Use:	29,297	gallons

	Net Fuel Use (gallons)	Conversion Factor Btu/gallon	Source	Fuel Converted to Energy Use	
Diesel	29,297	137,381	[3]	4,025	MMBtu
Gasoline	143,342	109,786	[4]	15,737	MMBtu
Total Energy Use from Net Operational Fuel				**19,762**	MMBtu

Existing and Net Operational Built Environment

	Existing			Net
Type of Energy	Annual Usage	Units	Converted to MMBtu	Energy Use in MMBtu
Electricity	1.18E+05	kWh	404	13,763
Natural Gas	3.47E+05	kBtu	347	(347)
Total			750	**13,417**

Sum of above

Total Net Annual Operational Energy Use **33,178** **MMBtu**

Sources

Unless otherwise noted, information in these calculations is from the project-specific Air Quality/Emissions Assessment for the project, including CalEEMod output tables.

[1] United States Environmental Protection Agency. 2018. Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b . July 2018. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2018. National Transportation Statistics 2018 . Available at: https://www.bts.gov/sites/bts.dot.gov/files/docs/browse-statistical-products-anddata/national-transportation-statistics/223001/ntsentire2018q4.pdf.

[3] U.S. Energy Information Administration, Energy Units and Calculations Explained, last updated June 29, 2022. Available at: https://www.eia.gov/totalenergy/data/monthly/archive/00352205.pdf

[4] California Air Resources Board, CA-GREET 2.0 Supplemental Document and Tables of Changes, Appendix C, Supplement to the LCFS CA-GREET 2.0 Model, 12/15/2014 , page C-24, Table 10. Available at: https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2015/lcfs2015/lcfs15appc.pdf

[5] California Air Resources Board (CARB), EMFAC2021 v1.0.0., 2021. Available at https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools-emfac-software-and

[6] Anticipated TDM reduction information is from the the project-specific CEQA Transportation Analysis.

Acronyms used include:

Btu = British Thermal Units
hrs = hours
kBtu = Thousand British Thermal Units
kWH = kilowatt hours
MMBtu = Million British Thermal Units
MPG = miles per gallon
TDM = Transportation Demand Management
VMT = vehicle miles traveled

NOISE ASSESSMENT

ATTACHMENT D

to the
841 Old County Road Project Initial Study / Mitigated Negative Declaration

COFFMAN ENGINEERS

Memorandum

Date:	April 14, 2022	**Project:**	841 Old County Road San Carlos, CA Noise Assessment Revision Based on Comments
To:	Rebecca Auld Lamphier-Gregory	**From:**	Christopher Barnobi Coffman Engineers

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This memorandum contains an acoustical analysis of the proposed project located at 841 Old County Road in San Carlos, CA.

Project Description

The applicant proposes redevelopment of the 3.4-acre site bounded by Bransten Road to the north, Commercial Street to the south, and Old County Road to the west. All existing uses would be removed, including a garden supply center, kennels, and a tree services office. Noise sensitive receptors start at residences about 600 feet to the southwest and about 700 feet to the north.

The proposed development totals about 340,000 gross square feet of office / R&D / life science use plus two subterranean levels of parking and would include a central courtyard and roof decks for tenant use. Construction would proceed in two phases, beginning with a 5-story, 204,057 square foot structure on the south lot and continuing to a 4-story 135,676 sf structure on the north lot. These two phases would be connected as one building through a pedestrian bridge on the 3rd and 4th floors and two levels of underground parking that span the entire site.

Regulatory Setting

The proposed Project would be subject to noise-related regulations, plans, and policies established via planning documents prepared by the State of California and the City of San Carlos. These documents are implemented during the environmental review process to limit noise exposure at existing and proposed noise sensitive land uses. Applicable planning documents include:

1) The California Environmental Quality Act (CEQA) Guidelines, Appendix G,
2) The City of San Carlos Noise Element of the General Plan, and
3) The City of San Carlos Municipal Code.

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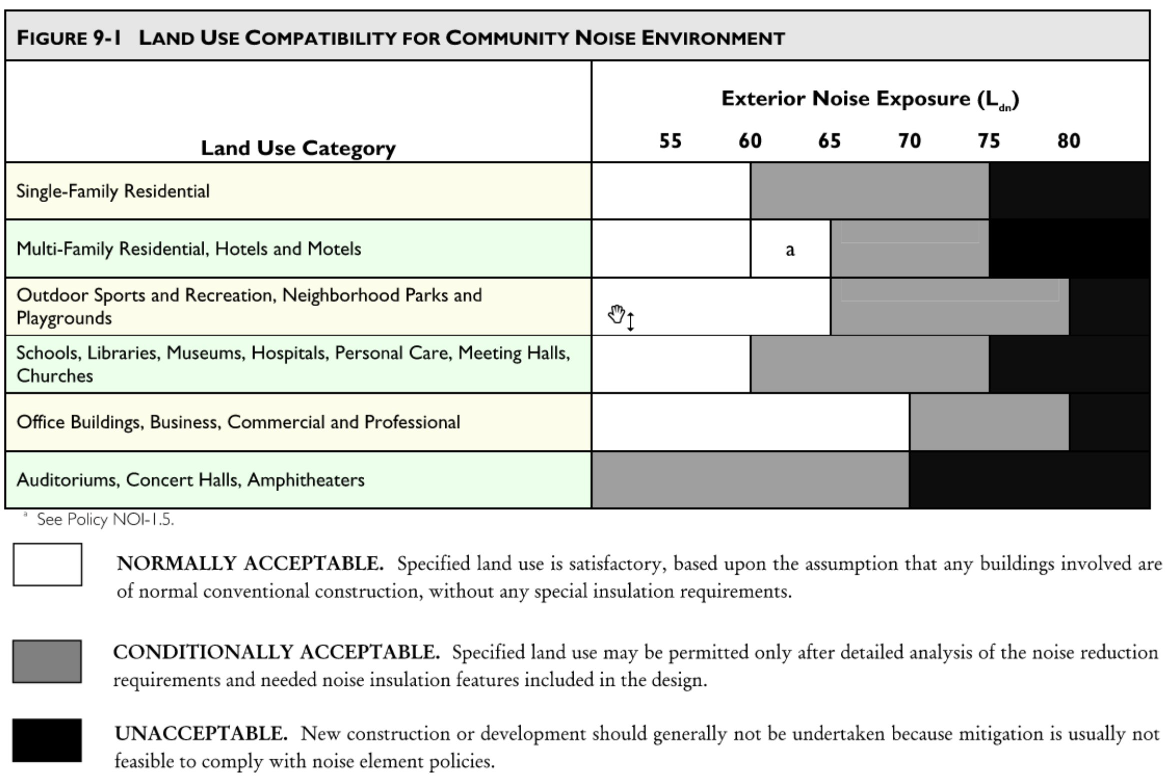
Regulations, plans, and policies presented within these documents form the basis of the significance criteria used to assess Project impacts.

<u>City of San Carlos General Plan</u>

The Noise Element of the City of San Carlos General Plan addresses noise sources in the community and identifies ways to reduce the impacts of these noise sources. The Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. Land uses that are sensitive to noise are identified and future noise generating land uses are located so that they do not impact those sensitive areas. The following are the guiding policies contained in the Noise Element of the City of San Carlos relevant to the project.

Policy NOI-1.3 Limit noise impacts on noise-sensitive uses to noise level standards as indicated in [Figure] 9-1.



Policy NOI-1.8 During all phases of construction activity, reasonable noise reduction measures shall be utilized to minimize the exposure of neighboring properties to excessive noise levels.

a. Construction activities shall comply with the City’s noise ordinance.

The City's website, in the Frequently Asked Questions section (https://www.cityofsancarlos.org/government/departments/community-development/building/building-permits/frequently-asked-questions-faqs), includes a note about construction hours:

> *What are the construction noise hours in San Carlos?*
>
> *In response to concerns surrounding COVID-19, the San Carlos City Manager issued an emergency order limiting construction hours. Effective immediately, construction hours are: 8 a.m. to 5 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday. Construction hours include set up and securing of the site.*
>
> *Construction work on Sunday is prohibited. No construction noise-related activities are allowed on the following holidays: New Year's Day, Martin Luther King, Jr. Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day*

<u>City of San Carlos Municipal Code</u>

The noise regulations of the City of San Carlos Municipal Code are contained in Chapter 9.30 of the Code. The following excerpts contain relevant noise limits.

> *9.30.030 Basic noise regulation.*
>
> *Except as otherwise permitted under this chapter, no person shall cause and no property owner shall permit, as to property owned by him, a noise produced by any person, amplified sound or device, or any combination thereof in excess of the noise limits established in **Table 18.21.050-A** to emanate from any property, public or private, as measured at the receiving property line. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)*
>
> *9.30.070 Exempt activities. Amended Res. 2020-026 – Temporary Construction Hours*
>
> *The following noise-generating activities are exempt from the provisions of this chapter:*
>
> *B. Construction activities; such activities, however, shall be limited to the hours of eight a.m. to six p.m. Monday through Friday, and nine a.m. to five p.m. on Saturdays and Sundays. No construction noise-related activities on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. All gasoline-powered construction equipment shall be equipped with an*

operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted (the Building Official shall have the authority to grant exceptions to construction noise-related activities);

From Chapter 18.21 Noise Performance Standards:

A. Noise Limits. No use or activity shall create noise levels that exceed the following standards. The maximum allowable noise levels specified in Table 18.21.050-A, Noise Limits, do not apply to noise generated by automobile traffic or other mobile noise sources in the public right-of-way.

TABLE 18.21.050-A: NOISE LIMITS					
Land Use Receiving the Noise	**Noise-Level Descriptor**	**Exterior Noise Level Standard in Any Hour (dBA)**		**Interior Noise-Level Standard in Any Hour (dBA)**	
		Daytime (7 a.m. – 10 p.m.)	**Nighttime (10 p.m. – 7 a.m.)**	**Daytime (7 a.m. – 10 p.m.)**	**Nighttime (10 p.m. – 7 a.m.)**
Residential	L50	55	45	40	30
	Lmax	70	60	55	45

1. Adjustments to Noise Limits. The maximum allowable noise levels of Table 18.21.050-A, Noise Limits, shall be adjusted according to the following provisions. No more than one increase in the maximum permissible noise level shall be applied to the noise generated on each property.

A. Ambient Noise. If the ambient noise level at a noise-sensitive use is ten dBA or more below the standard, the allowable noise standard shall be decreased by five decibels.
B. Duration. The maximum allowable noise level (L50) shall be increased as follows to account for the effects of duration:
i. Noise that is produced for no more than a cumulative period of fifteen minutes in any hour may exceed the noise limit by five decibels; and
ii. Noise that is produced for no more than a cumulative period of five minutes in any hour may exceed the noise limits by ten decibels;
iii. Noise that is produced for no more than a cumulative period of one minute in any hour may exceed the noise limits by fifteen decibels.
C. Character of Sound. If a noise contains a steady audible tone or is a repetitive noise (such as hammering or riveting) or contains music or speech conveying informational content, the maximum allowable noise levels shall be reduced by five decibels.

D. Prohibited Noise. Noise for a cumulative period of thirty minutes or more in any hour which exceeds the noise standard for the receiving land use.

B. Noise Exposure—Land Use Requirements and Limitations. Table 18.21.050-B, Noise Exposure—Land Requirements and Limitations, describes the requirements and limitations of various land uses within the listed day/night average sound level (Ldn) ranges.

TABLE 18.21.050-B: NOISE EXPOSURE—LAND USE REQUIREMENTS AND LIMITATIONS		
Land Use	**Day/Night Average Sound Level (Ldn)**	**Requirements and Limitations**
Residential (1) and Other Noise-Sensitive Uses (e.g., Schools, Hospitals, and Churches)	Less than 60	Satisfactory
	60 to 75	Acoustic study and noise attenuation measures required
	Over 75	Acoustic study and noise attenuation measures required
Commercial and Industrial	Less than 70	Satisfactory
	70 to 80	Acoustic study and noise attenuation measures required
	Over 80	Airport-related development only; noise attenuation measures required

<u>Vibration Standards</u>

Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of ground-borne noise and vibration. To date, the City has not adopted a quantifiable threshold for ground-borne vibration impacts. Section *18.21.060 Vibration* of the San Carlos Municipal Code limits vibrations from being discernable without instrumentation at the lot lines of a site. In the same section, it states that vibration from temporary construction and demolition activities are exempt.

However, the Department of Transportation (Caltrans) has adopted vibration standards to evaluate potential impacts related to construction activities. For engineered concrete and masonry buildings, 0.3 inches/second PPV is a limit where building damage is possible (Caltrans 2004). This 0.3 inches/second vibration damage threshold is applied to the project at the closest structure(s), the neighboring commercial buildings in this case.

California CEQA Guidelines Appendix G

The California Environmental Quality Act (CEQA) is a statute that requires state and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate those impacts when feasible. Appendix G of CEQA includes a set of guidelines for impacts. In December 2018, those guidelines were updated (http://opr.ca.gov/ceqa/updates/guidelines/).

In accordance with Appendix G of the State CEQA Guidelines, the project would have a significant impact with regard to noise or vibration if it would result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
b) Generation of excessive groundborne vibration or groundborne noise levels?
c) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Project Thresholds

For (a), temporary increases in noise levels are addressed in the construction noise analysis section. The San Carlos Municipal Code and website provide exemptions for limited construction hours. Construction noise levels are analyzed and discussed for informational purposes in the Construction Noise Section.

For permanent increases in traffic noise levels, NOI-1.3 states noise impacts should be limited based on the noise level standards in Table 9-1. Existing traffic noise levels are considered during significance threshold comparison in the analysis. Additionally, on-site mechanical equipment is assessed by applying the noise limits from Table 18.21.050.

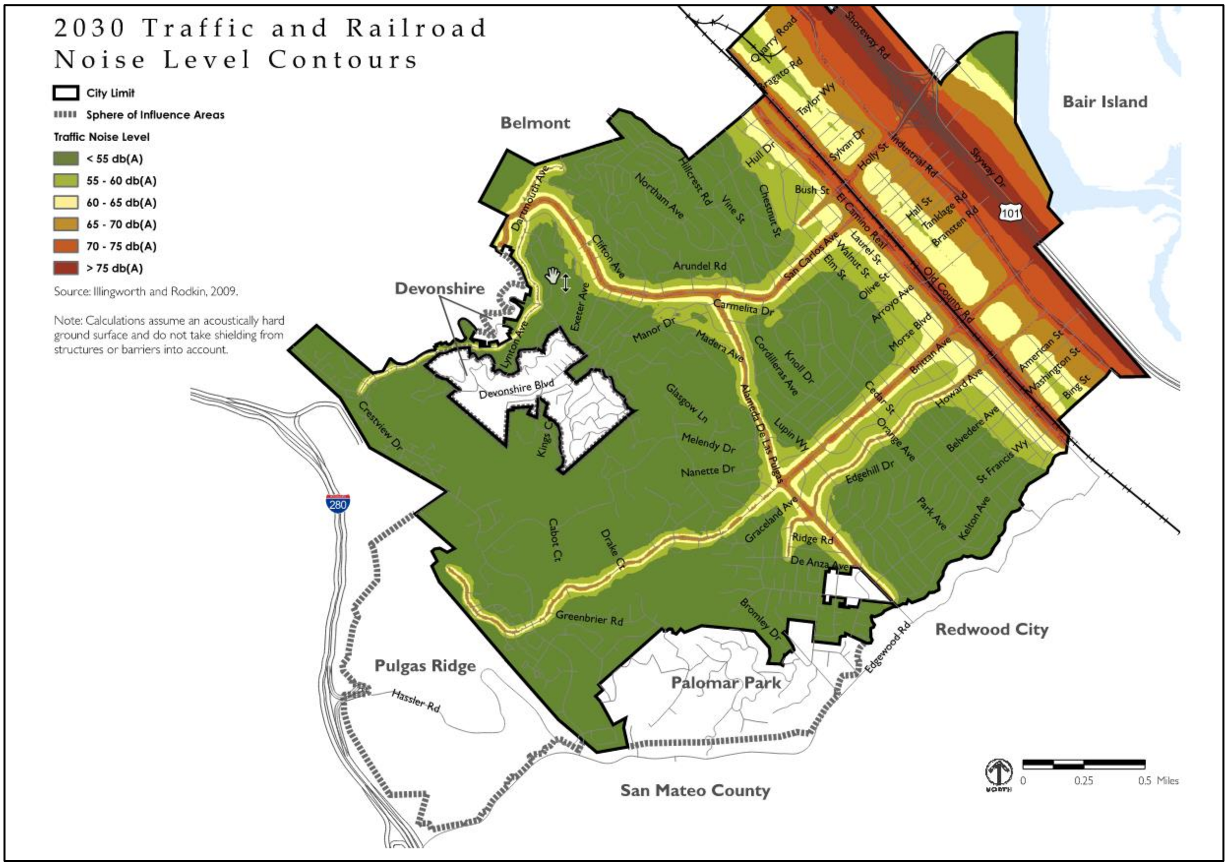
For (b), excessive ground-borne vibration and noise would be significant if construction or operational vibration levels exceed 0.3 inches/second peak particle velocity (PPV) per the FTA standard for structural damage at the nearby commercial buildings. Other demolition or construction related vibration is exempt from the San Carlos Municipal Code’s perceptibility vibration limit.

For (c), the project is located about 0.5 miles southwest of the San Carlos Airport. Based on the San Carlos Airport Noise Contour Map contained within the General Plan Noise Element, the site is outside of the 55 CNEL noise contour for the airport. Aircraft noise plays a part in establishing the ambient levels in the site vicinity, but at this distance no significant impact is expected from the aircraft noise on the project site.

Existing Ambient Environment

The City's General Plan Noise Element includes discussion and data related to the expected noise levels from traffic in 2030. Figure 9-3 (from the Noise Element) shows noise contours based on the expected traffic in 2030.

Figure 9-3. General Plan Noise Element: 2030 Traffic Noise Level Contours



The 2030 traffic noise levels from Figure 9-3 show that the project site has expected noise levels at some locations along El Camino Real and Old Country Road that exceed 65 dBA. The existing site areas that are farthest away from traffic noise are expected to have noise levels above about 60 dBA on the site.

Noise sensitive residences about 600 feet to the southwest and about 700 feet to the north of the site have a range of existing and future noise exposure. At worst case residential locations, traffic noise is expected to be greater than 65 dBA. At residential locations farther from traffic noise sources existing and future traffic noise levels may be as low as 55 dBA.

Construction Noise

The noise levels generated by construction equipment would vary depending on factors such as the type and specific model of the equipment, the condition of the equipment, and the operation being performed. The average sound level of the construction activity also depends upon the amount of time that the equipment operates and the intensity of the construction during the time period. Construction activities would occur during the City's allowable hours of operation.

The maximum noise level ranges for various pieces of construction equipment at a distance of 50 feet are depicted in Table 1. Note that these are maximum noise levels, not the average sound level generally used in this assessment. The average sound level at construction sites is typically less than the maximum noise level because the equipment operates in alternating cycles of full power and lower power. Thus, the average noise levels produced are less than the maximum level. Additionally, due to the dynamic nature of a construction site, noise levels are calculated from the center of the activity.

The typical operating cycles for construction equipment involve one or two minutes of full power operation followed by three or four minutes at lower power settings. Noise from construction equipment generally exhibits point source acoustical characteristics.

Construction noise in a well-defined area typically attenuates at approximately 6 dB per doubling of distance. When the sites have an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, an excess ground attenuation value of 1.5 dB per doubling distance can be assumed. These rules apply to the propagation of sound waves with no obstacles between source and receivers, such as topography (ridges or berms) or structures (Caltrans 2013, FTA 2006).

Table 1. Construction Equipment Noise Emission Levels

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Measured Lmax @50ft (dBA, slow)
All Other Equipment > 5 HP	No	50	N/A (85 Spec)
Backhoe	No	40	78
Compressor (air)	No	40	78
Concrete Saw	No	20	90
Crane	No	16	81
Dozer	No	40	82
Dump Truck	No	40	76
Excavator	No	40	81
Flat Bed Truck	No	40	74
Front End Loader	No	40	79
Generator	No	50	81
Grader	No	40	N/A (85 Spec)
Man Lift	No	20	75
Mounted Impact Hammer (hoe ram)	Yes	20	90
Paver	No	50	77
Pickup Truck	No	40	75
Pneumatic Tools	No	50	85
Roller	No	20	80
Scraper	No	40	84

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Measured Lmax @50ft (dBA, slow)
Tractor	No	40	N/A (84 Spec)
Welder/Torch	No	40	74

Source: DOT 2006.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM; FHWA 2008) and project-specific construction equipment were used to estimate construction noise levels at the nearest noise-sensitive land uses. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two excavators, a loader, a dump truck), the duty cycle for each piece of equipment (i.e., percentage of hours the equipment typically works per day), and the distance from the sensitive noise receptor. The RCNM has default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty cycle values were used for this noise analysis.

Project Specific Construction Details

Construction is estimated to take place over approximately 38.4 months. Demolition is expected to take 45 days. Excavation and grading are expected to take 65 days. Foundation work is expected to take 50 days. Phased construction for the North Building is expected to take place over 180 days, while 200 days is expected for the South Building. Paving and sitework are expected to take about 80 days for the North Site and 80 days for the South site. The time between phases is assumed to have no gaps.

Table 2 provides a summary of the construction phases and expected daily construction equipment.

Table 2. Summary of Construction Phases and Equipment

Phase ID	Phase	Project Equipment	Quantity of Equipment
1	Demolition	Concrete/Industrial Saws	1
1	Demolition	Excavators	3
1	Demolition	Rubber-Tired Dozers	2
2	Below Grade Garage Excavation and Grading	Excavators	2
2	Below Grade Garage Excavation and Grading	Graders	1
2	Below Grade Garage Excavation and Grading	Rubber Tired Dozers	1
2	Below Grade Garage Excavation and Grading	Tractors/Loaders/Backhoes	2
3	Below Grade Garage Foundations	Excavators	1
3	Below Grade Garage Foundations	Tractors/Loaders/Backhoes	1
4	Garage Concrete	Cranes	1
4	Garage Concrete	Forklifts	3
4	Garage Concrete	Generator Sets	1
5	Phase 1 - Building Construction North	Cranes	1
5	Phase 1 - Building Construction North	Forklifts	3

Phase ID	Phase	Project Equipment	Quantity of Equipment
5	Phase 1 - Building Construction North	Tractors/Loaders/Backhoes	2
5	Phase 1 - Building Construction North	Welders	3
6	Phase 1 - Site	Pavers	2
6	Phase 1 - Site	Rollers	2
6	Phase 1 - Site	Tractors/Loaders/Backhoes	2
7	Phase 2 - Building Construction South	Cranes	1
7	Phase 2 - Building Construction South	Forklifts	3
7	Phase 2 - Building Construction South	Tractors/Loaders/Backhoes	2
7	Phase 2 - Building Construction South	Welders	3
8	Phase 2 - Site	Pavers	2
8	Phase 2 - Site	Rollers	2
8	Phase 2 - Site	Tractors/Loaders/Backhoes	2

Construction Noise Results

Construction equipment with substantially higher noise-generation characteristics (such as pile drivers, rock drills, blasting equipment) are not expected to be necessary. Construction of the proposed project would be operated and managed strictly in accordance with City regulations.

The results presented below are from the RCNM model and based on construction equipment defaults assumed for the proposed project based on the phase description. The noise levels shown in Tables 3 take into account operation of multiple pieces of construction equipment operating simultaneously for the Leq results. The Lmax results only consider the single loudest piece of equipment. This is because the Lmax noise level from a piece of equipment would come from an almost instantaneous duration. It would only be a short, worst-case instance of the equipment operation so it’s unrealistic that multiple pieces of equipment would produce their Lmax levels simultaneously. The table shows construction noise results at the nearest residences to the project site, which are located 600 feet southwest and 700 feet north from the project site.

Table 3. Construction Noise Modeling Summary Results

Construction Phase	L_{eq}/L_{max}* (dBA)	
	Residential 600 feet SW	*Residential 700 feet N*
Demolition	65/68	64/67
Below Grade Garage Excavation and Grading	65/63	63/62
Below Grade Garage Foundations	60/62	59/61
Garage Concrete	59/59	58/58

Phase 1 - Building Construction North	62/62	60/61
Phase 1 - Site	62/62	60/61
Phase 2 - Building Construction South	62/62	60/61
Phase 2 - Site	62/62	60/61
*Leq is the sum of the average noise levels for all pieces of equipment operating during this phase. Whereas Lmax is the value for the single loudest piece of equipment during the phase. This is because it is unlikely that all pieces of equipment will experience their loudest instantaneous condition at the same time.		

Leq is a metric that represents the energy average of sound measured over a specified amount of time. Whereas the L50 metric is more equivalent to a median value. The Leq is used throughout various situations and is the standard metric for most calculations and limits used in the field of acoustics. The L50 is something that cannot usually be calculated but must be measured. For these reasons, the calculated Leq levels are the most appropriate metric that can be used to predict compliance against the L50 limit.

The estimated construction noise levels generated by the proposed project would range from 58 to 65 dBA Leq and 58 to 68 dBA Lmax for typical, moderate construction efforts at the nearest residential properties. When intense construction is conducted the noise levels will be higher. The City's noise limits during construction hours are 55 dBA L50 and 70 dBA Lmax. Construction noise would likely remain under the Lmax limit but exceed L50 limit.

However, the City's Municipal Code and website include exemptions for construction activities conducted during certain daytime hours. All construction is expected to be conducted within the allowable hours. **The construction noise will have a less than significant temporary noise impact** due to the exemption in the Municipal Code.

Construction Vibration

Construction vibration is evaluated to determine if it would result in building damage or annoyance at residential areas. In general, on-site construction equipment that would cause the most ground-borne vibration would be associated with demolition, site excavation, and grading. During these construction efforts, the largest ground-borne vibration levels are anticipated to be generated by vibratory rollers, large bulldozers, and loaded trucks used for earthmoving. According to the FTA, vibration levels associated with the use of bulldozers range from approximately 0.003 to 0.089 inches per second PPV at 25 feet, as shown in Table 4. Additionally, loaded trucks used for soil hauling during grading could generate vibration levels of approximately 0.076 inches per second PPV at 25 feet.

Table 4. Construction Equipment Vibration Levels

Equipment	PPV at 25 feet (inches per second)
Vibratory roller	0.210
Jackhammer	0.035
Caisson Drilling	0.089
Large bulldozer	0.089
Loaded trucks	0.076
Small bulldozer	0.003

Sources: FTA 2006; Caltrans 2011.
PPV = peak particle velocity

The nearest building to the construction site would be the adjacent commercial buildings, approximately 5 feet from the construction boundary. For engineered concrete and masonry buildings, 0.3 inches/second PPV is a limit where building damage is possible (Caltrans 2004).

Using the distance and established criteria, vibration from construction activity was calculated at the nearby commercial building(s) (as close as 5 feet away). Results are presented below, in Table 5.

Table 5. Calculated Construction Vibration Levels at Adjacent Receivers

Receiver	Equipment	Distance to Construction	Calculated Vibration Level, PPV	Criteria PPV	Below PPV?
Nearest Commercial Building	Vibratory Roller	5	1.23	0.3	N
	Large Bulldozer	5	0.52	0.3	N
	Loaded Trucks	5	0.45	0.3	N

As shown in Table 5, construction-related vibration levels at nearby commercial building(s) could exceed the damage threshold applicable to the buildings of 0.3 inches/second PPV when activities are 5 feet away from existing structures. Further analysis of vibratory roller vibration shows that at distances farther than 20 feet from existing structures, the vibration levels fall below the criteria. For other equipment such as large bulldozers and loaded trucks, vibration levels are expected to fall below the criteria at about 10 feet from the existing structures. Thus, damage to adjacent commercial buildings is **a potentially significant impact from construction vibration due to the project**. Mitigation measures are provided below to reduce the potentially significant impact to less than significant.

Construction Vibration Mitigation

- Wherever feasible, avoid operation of vibratory rollers within 20 feet of existing buildings and operation of other construction equipment such as large bulldozers or loaded trucks within 10 feet of existing structures on adjacent lots.

- If vibratory rollers must operate within 20 feet of existing buildings or other major construction equipment must operate within 10 feet of existing buildings, then prepare a vibration monitoring plan to monitor construction vibration at the nearest structures.

Operational Noise: Mechanical Equipment

The project consists of office, research & development, and life science spaces. To support these uses, various pieces of mechanical equipment are expected to be part of the project.

Based on the Planning Resubmission set dated 2021-12-02 from Studios Architecture, the rooftop also includes heat pumps, cooling towers, and air handling units.

From Table 18.21.050-A, the residential noise limit is 45 dBA L50 at nighttime. The closest residential area is 600 feet away. This distance would provide approximately 42 dB of attenuation (reduction) in the noise from rooftop equipment compared to about 5 feet from the acoustic center of the equipment. Thus, if the L50 of rooftop equipment exceeds 87 dBA at 5 feet, then there is **a potential significant impact for equipment noise levels** to exceed to local noise ordinance. With various equipment that has not yet been specified, there is potential for noise levels from mechanical equipment to exceed the noise ordinance limits. Thus, noise impacts from rooftop mechanical equipment are potentially significant. To assess any potential impact, the project should include a noise study once exterior mechanical equipment has been selected. Shielding from noise barriers is a common practice for mechanical equipment exceeding noise criteria and can provide more than 10 dB of noise reduction (if well-designed for noise), making it possible for mechanical equipment to be located closer to sensitive uses with potentially less than significant impact.

Rooftop Mechanical Equipment Mitigation

- Conduct a detailed mechanical noise analysis once rooftop equipment has been selected. Provide silencers, barriers, or other noise mitigation treatments to reduce expected noise levels from the mechanical equipment to within the noise ordinance limits.

Emergency Generator

The project includes one (1) emergency standby generator serving both buildings. The generator is sized at 450kW to serve code-mandated life-safety and legally-required loads. The generator will be enclosed within a Level II sound enclosure and is currently located within the surface parking lot.

In addition to the standby generator, there is also space allocated for a future tenant generator. The space allocation is for a 500kW tenant standby generator serving tenants' optional standby loads. The generators are expected to be in locations without line of sight to the residential areas. This would mean that generator noise would be largely blocked by existing structures.

Applying the generator data from RCNM to two generators placed on the site, the calculated noise level at the nearest residential receptors 600 feet away is approximately 47 dBA Leq. Because the generators are only expected to run during regular testing that would occur during daytime hours, the L50 exterior noise limit is 55 dBA for this noise source as shown in Table 18.21.050-A. Additionally, the exterior Lmax noise limit from that table is 70 dBA. Based on the RCNM calculation, the Lmax from both generators running at the same time at the nearest residential location is 49 dBA. Thus, the expected noise from the backup generators that are part of the project are below the local noise limits at the nearest residential areas. Therefore, **a less than significant noise impact is expected from the backup generators** that are part of the project.

Operational Noise: Traffic

The Existing Ambient Environment section of this memorandum includes Figure 9-3 from the City's General Plan Noise Element. The figure shows that US 101 is the largest source of traffic noise in the City with El Camino Real as the second largest source of traffic noise. In the project vicinity, Industrial Road also adds to the traffic noise from US 101, east of the site. Refer to the Existing Ambient Environment section of this memorandum for details regarding the existing traffic noise levels in the site vicinity and at the closest residential locations.

Traffic data for the project was provided by W-Trans via email on March 17, 2022. That data has been processed to calculate the percent difference between the 2040 no-project average daily traffic (ADT) and the 2040 with project-related traffic scenarios. Traffic data for existing traffic is shown within the 2019 column. The same increase in traffic that was indicated in 2040 was applied to the 2019 data to produce the 2019 with project-related traffic data. This data is summarized in Table 6.

Table 6. Traffic Data

North-South Streets	2019	2019 with Project	2040 No Project	2040 with Project	2040 Percent Difference
US 101 South of Brittan Ave					
Total ADT	272265	272492	333500	333727	0%
US 101 between Brittan Ave and Holly St					
Total ADT	260962	260896	335388	335322	0%
US 101 North of Holly Street					
Total ADT	27690	27909	73922	74141	0%
Industrial Rd south of Brittan Ave					
Total ADT	7502	7671	14739	14908	1%
Industrial Rd between Brittan Ave and Commercial					
Total ADT	6029	6300	13582	13853	2%
Industrial Rd between Commercial and Bransten					
Total ADT	6029	5937	13578	13486	-1%
Industrial Rd between Bransten and Terminal					
Total ADT	4087	4840	11865	12618	6%
Industrial Rd between Terminal and Montgomery					
Total ADT	4087	4840	11865	12618	6%
Industrial Rd between Montgomery and San Carlos Ave					
Total ADT	3544	4300	11324	12080	7%
Industrial Rd between San Carlos Ave and Holly St					
Total ADT	9994	10739	16807	17552	4%
Industrial Rd north of Holly St					
Total ADT	4378	4410	3707	3739	1%

El Camino Real (SR 82) south of Brittan Ave					
Total ADT	20307	20307	30212	30684	2%
El Camino Real (SR 82) from Brittan Ave to Commercial					
Total ADT	16147	16147	23844	23666	-1%
El Camino Real (SR 82) from Commercial to San Carlos Ave					
Total ADT	21278	21278	27240	26985	-1%
El Camino Real (SR 82) between San Carlos Ave & Holly St					
Total ADT	30143	30143	36251	36025	-1%
El Camino Real (SR 82) north of Holly St					
Total ADT	18709	18709	26202	26614	2%

Table 6 shows that the major roads do not see large percentage increases in ADT due to the project. For roadway traffic, a doubling (100% increase) in ADT corresponds to approximately a 3 dB increase in traffic noise. For typical hearing, a difference of 3 dB is a barely perceptible change in noise level. With all roadways experiencing a small percentage increase, the expected traffic noise increase due to the project would be less than 1 dB. This is less than the typical minimum perceptible difference. Additionally, the local noise limits do not apply to noise generated by automobile traffic or other mobile noise sources in the public right-of-way, per the San Carlos Muncipal code sections 9.30.070 (A) and 18.21.050 (A). Thus, **traffic noise impacts from the project are expected to be less than significant**.

Lower-volume roadways were not analyzed as these would have much lower traffic volumes and speeds, meaning much lower noise levels. As mentioned above, it would take a doubling of traffic volumes to increase their noise levels by only 3 dB. Anything less would not be perceptible to the typical person with healthy hearing. Additionally, noise from automobile traffic on roadways is exempt from the San Carlos noise limits.

Additionally, a raised BART line exists between Old County Road and El Camino Real. The new project building will include large vertical surfaces at the exterior which can reflect sound. Coffman analyzed the potential for increased noise at residential areas due to these new sound reflections. For residences to the north, the location of the building would not produce significant additional noise from roadways or BART based on the angle between these noise sources, the new façade, and the receivers. For receivers to the southwest, a small increase in noise due to the reflections may occur. Calculations based on conservative assumptions show that the increase in noise at these receivers would be less than 0.5 dB due to the sound reflections off of the building. This is less than a perceptible difference. Thus, **noise impacts from sound reflections off the new building are expected to be less than significant**.

Conclusion

This noise analysis memorandum includes analyses of potential noise and vibration impacts related to the proposed project. Most impacts are expected to be less than significant. Construction vibration and rooftop mechanical equipment noise impacts are potentially significant. Mitigation measures included in this memorandum are expected to reduce the construction vibration and rooftop mechanical equipment noise impacts to less than significant.

References

Caltrans (California Department of Transportation). 2004. *Transportation- and Construction-Induced Vibration Guidance Manual*. Sacramento, California: Caltrans Noise, Vibration and Hazardous Waste Management Office. June 2004.

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FTA (Federal Transit Administration). 2006. Transit Noise and Vibration Impact Assessment. May 2006. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf.

San Carlos General Plan Noise Element

San Carlos Municipal Code, https://www.codepublishing.com/CA/SanCarlos/html/SanCarlos09/SanCarlos0930.html

San Carlos Website Frequently Asked Questions (accessed March 8, 2022) https://www.cityofsancarlos.org/government/departments/community-development/building/building-permits/frequently-asked-questions-faqs

CEQA Transportation Analysis

Attachment E

to the
841 Old County Road Project Initial Study / Mitigated Negative Declaration

January 17, 2023

Ms. Rebecca Auld
Lamphier-Gregory
4100 Redwood Road, Suite 20A - #601
Oakland, California 94619

841 Old County Road CEQA Transportation Analysis

Dear Ms. Auld;

The proposed 841 Old County Road Project would include the redevelopment of approximately 3.5 acres into about 325,473 square feet of office and research and development in San Carlos. The purpose of this letter is to summarize this project's potential transportation impacts under the guidelines of the California Environmental Quality Act (CEQA).

Project Description

It is our understanding that the proposed project would include removal of the existing landscaping and pet care commercial land uses at 803-851 Old County Road between Bransten Road and Commercial Street and construct 325,473 square feet of Life Sciences office space.

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021. Because the site is currently occupied by a landscaping service provider (light industrial), a garden supply store, and pet care commercial land uses, the trip generation of the existing land uses was estimated and deducted. A review of available land use descriptions contained in the ITE manual indicates that the rates most closely aligned with the existing uses would be "General Light Industrial" (ITE LU #110), "Nursery (Garden Center)" (ITE LU #817) and "Day Care Center" (ITE LU#565). Similarly, the most appropriate trip generation rates for the proposed land uses include the application of both "General Office Building" (Land Use #710) and "Research and Development Center" (Land Use #760) based on gross floor area. For a conservative analysis, and to be consistent with other recently analyzed Life Sciences office projects in San Carlos, the higher daily trip generation rate for "Research and Development Center" and the peak hour trip generation rates for "General Office Building" were applied to approximate the number of vehicle trips generated by the proposed project based on the proposed square footage. The anticipated number of vehicle trips estimated by these rates are comparable to trip estimates using the assumption that the building would have an occupancy of approximately one employee per 300 square feet of office space or in this case an occupancy of approximately 1,085 employees.

The proposed project would be expected to increase vehicle trips, parking demand, traffic congestion, and vehicle emissions. Per Section 18.25.080 of the City of San Carlos municipal code, a Transportation Demand Management (TDM) Plan achieving a minimum 20-percent vehicle trip reduction is required for this project. To provide a conservative analysis, and to be consistent with other transportation studies in San Carlos, trip reductions associated with a TDM plan were not included with the trip generation estimates used for the VMT analysis or LOS analysis. Reductions associated with the TDM plan are discussed following CEQA conclusions.

Based on these assumptions, the proposed project is expected to generate an average of 3,606 daily trips, including 495 a.m. peak hour trips and 469 trips during the p.m. peak hour. This represents a net increase in trips over the existing land uses of 2,346 trips per day including 295 and 237 more trips during the a.m. and p.m. peak hours, respectively. These results are summarized in Table 1.

Table 1 – Trip Generation Summary											
Land Use	**Units**	**Daily**		**AM Peak Hour**				**PM Peak Hour**			
	(ksf)	**Rate**	**Trips**	**Rate**	**Trips**	**In**	**Out**	**Rate**	**Trips**	**In**	**Out**
Existing											
General Light Industrial	2.800	4.87	-14	0.74	-2	-2	0	0.65	-2	0	-2
Nursery (Garden Center)	6.800	68.10	-463	2.43	-17	-9	-8	6.94	-47	-23	-24
Pet Day Care Center	16.450	47.62	-783	11.00	-181	-96	-85	11.12	-183	-86	-97
Proposed											
General Office Building	325.473	11.08*	3,606	1.52	495	436	59	1.44	469	80	389
Net New Trips			**2,346**		**295**	**329**	**-34**		**237**	**-29**	**266**

Note: * Rate applied is for a Research and Development Center; ksf = 1,000 square feet

Trip Reduction/Transportation Demand Management (TDM) Plan

Per Section 18.25.030 of the City of San Carlos Municipal Code, a Transportation Demand Management (TDM) Plan is required that shall incorporate measures to meet vehicle trip generation rates that are 20 percent lower than the standard rates as established in the most recent edition of the Institute of Transportation Engineers (ITE) trip generation manual. In essence, this amounts to a 20 percent trip reduction in vehicle trips.

As proposed, the project would include a Transportation Demand Management (TDM) Plan that would include measures aimed at reducing trips to and from the site as well as the expected parking demand. Based on preliminary documents provided by the applicant, proposed TDM measures would include a private or public shuttle service, marketing and management strategies, on-site amenities, site improvements, incentive programs, and other items.

The proposed TDM measures were evaluated using the California Emissions Estimator Model (CalEEMod, version 2016.3.1). CalEEMod is a land use emissions model used to quantify potential emissions impacts associated with a variety of land use projects. The model quantifies direct emissions, including vehicle use, and indirect emissions, including energy and water use. The model was developed for California Air Pollution Control Officers Association (CAPCOA) and incorporates the mitigation measures outlined in *Quantifying Greenhouse Gas Mitigation Measures*, CAPCOA 2010. CalEEMod estimates vehicle travel as a function of land use and geographic location using ITE standard trip generation rates and trip length data collected from various jurisdictions around the State of California. Using this data, the CalEEMod model can determine the number of Vehicle Miles Traveled (VMT) for a given development. The underlying CAPCOA methodology limits VMT reductions based on the development's location. The proposed project site is in a suburban center area of San Carlos, where the overall maximum reduction allowed by the CAPCOA methodology is 20 percent. It should be noted that while CAPCOA limits the expected trip reduction, a potential 25 to 30-percent reduction was calculated based on the proposed TDM measures. While this estimate is larger than the cap imposed by CAPCOA, a maximum 20-percent trip reduction appears reasonable to apply to this project.

After deductions for both the TDM program and existing trips from removed buildings were applied, the project would be expected to generate 1,625 net-new daily trips, including 196 during the morning peak hour and 143 during the evening peak hour; these new trips represent the net increase in traffic associated with the project compared to existing volumes, as summarized in Table 2.

Table 2 – Trip Generation Summary with 20 percent TDM Reduction										
Land Use	**Daily**		**AM Peak Hour**				**PM Peak Hour**			
	Rate	**Trips**	**Rate**	**Trips**	**In**	**Out**	**Rate**	**Trips**	**In**	**Out**
Office		3,606		495	436	59		469	80	389
TDM Reduction	-20%	-721	-20%	-99	-87	-21	-20%	-94	-16	-78
Existing Trips Credit		-1,260		-200	-107	-93		-232	-109	-123
Total		**1,625**		**196**	**242**	**-46**		**143**	**-45**	**188**

Regulatory Setting

This section describes federal, State, regional, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process for transportation and circulation. These policies provide a context for the impact discussion related to the proposed project's consistency with the applicable regulatory conditions.

Federal Regulations

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the US Access Board, an independent federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. These guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian signals, parking, public transit, and other components of public rights-of-way. These guidelines would apply to proposed roadways in the study area.

State Regulations

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, supporting previous climate-focused and transportation legislation, including the Sustainable Communities and Climate Protection Act of 2008 (SB 375) and the California Global Warming Solutions Act of 2006 (AB 32). SB 743 also supports implementation of the Complete Streets Act (AB 1358), which requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users. To further the State's commitment to the goals of SB 375, AB 32 and AB 1358, SB 743 added Chapter 2.7, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code.

SB 743 introduced fundamental changes in the assessment of transportation impacts through the CEQA process. These changes include the elimination of auto delay (measured as Level of Service, or LOS) as a basis for determining significant transportation impacts. SB 743 included amendments that revised the definition of "infill opportunity zones" to allow cities and counties to opt out of traditional LOS standards established by congestion management programs (CMPs) and required the California Governor's Office of Planning and Research (OPR) to update the CEQA Guidelines and establish "criteria for determining the significance of transportation impacts of projects within transit priority areas." As part of the new CEQA guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." SB 743-compliant CEQA analysis became mandatory on July 1, 2020. Since the CEQA transportation analysis prepared for the Certified EIR predated SB 743, potentially significant impacts were defined differently at that time and VMT was not evaluated as is currently required.

In December 2018, OPR released a final advisory to guide lead agencies in implementing SB 743, the "Technical Advisory on Evaluating Transportation Impacts in CEQA." Key guidance includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact under CEQA.
- Tour- and trip-based travel models are recommended for estimating VMT, but local agencies have the authority to select the tools they use.
- VMT for residential and office projects are generally assessed using efficiency metrics, i.e., on a "per rate" basis. Specifically, the adopted metrics used by the City of San Carlos are VMT per service population for both residential and office projects.
- The recommended threshold of significance for residential and office projects is VMT per capita or per employee that is fifteen percent below the city or regional average (whichever is applied). In other words, an office project that generates VMT per employee that is more than 85 percent of the regional VMT per employee could result in a significant impact. This threshold is in line with statewide GHG emission reduction targets.
- For retail projects, the recommended metric is the net change in total VMT in the study area as a result of the project. It is recommended that projects resulting in a net increase in VMT be considered as having a significant impact.
- Lead agencies have the discretion to set or apply their own significance thresholds in lieu of those recommended in the advisory, provided they are based on substantial evidence.
- Cities and counties still have the ability to use metrics such as LOS for other plans, studies, or network monitoring. However, LOS and similar metrics cannot constitute the sole basis for CEQA impacts.

California Complete Streets Act of 2008 (Assembly Bill 1358)

Originally passed in 2008, California's Complete Streets Act came into force in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction—county or city—that undertakes a substantive update of the circulation element of its general plan must consider "complete streets" and incorporate corresponding policies and programs.

Regional Regulations

Plan Bay Area 2040

Plan Bay Area 2040 was adopted in 2017 by the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG). As a single plan for the nine-county San Francisco Bay Area that includes the Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS), Plan Bay Area 2040 sets forth regional transportation policy and provides capital program planning for all regional, State, and Federally funded projects.

As the RTP, Plan Bay Area 2040 provides strategic investment recommendations to improve regional transportation system performance, including investments in regional highway, transit, local roadway, bicycle, and pedestrian facilities. These projects were identified through regional and local transportation planning processes. Plan Bay Area 2040 was the most current iteration of Plan Bay Area at the start of this study.

San Mateo County Comprehensive Bicycle and Pedestrian Plan

The Countywide Bicycle and Pedestrian Plan (CBPP) provides a framework to help the City/County Association of Governments of San Mateo County (C/CAG) improve walking and bicycle conditions in San Mateo County. By recommending a connected network of biking and walking facilities based on the best practices in the field, this Plan will make biking and walking safer and more comfortable for all, and improve health, accessibility, and livability throughout the county.

C/CAG is the County's Congestion Management Agency and is responsible for transportation planning, programming, and funding. This includes developing and updating the region's Congestion Management Plan and bicycle and pedestrian plans. This Plan builds on previous walking and bicycling planning efforts, including the San Mateo County Comprehensive Bicycle Route Plan (2000) and San Mateo County Comprehensive Bicycle and Pedestrian Plan (2011).

This Plan presents countywide priorities and provides project lists and program and design guidance which C/CAG and local jurisdictions can use to make roadways safer, reduce congestion, and encourage more people to walk and ride a bicycle.

Congestion Management Program

The 2021 Congestion Management Program (CMP) Update is a document of the City/County Association of Governments of San Mateo County (C/CAG), the designated Congestion Management Agency (CMA) for San Mateo County. The 2021 biennial update is required by State statute.

In 1990, California voters approved Propositions 111 and 108, which included a requirement that every urban county within California designate a CMA that would prepare, implement, and biennially update a CMP. In San Mateo County, C/CAG was designated as the CMA. Subsequent legislation (AB 2419) allowed existing Congestion Management Agencies to discontinue participation in the Program; however, C/CAG voted to continue to participate in and adopt a CMP.

According to the state legislation, the purpose of CMPs is to develop a procedure to alleviate or control anticipated increases in roadway congestion and to ensure that "federal, state, and local agencies join with transit districts, business, private and environmental interests to develop and implement comprehensive strategies needed to develop appropriate responses to transportation needs." The first CMP for San Mateo County was adopted by C/CAG in 1991. It has been updated and amended on a biennial basis. The last CMP update was in 2019.

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the public agency tasked with regulating air pollution in the nine-county Bay Area, including San Mateo County. As a primary source of air pollution in the Bay Area region is from motor vehicles, air district regulations affect transportation planning in the project study area. The BAAQMD's goals include reducing health disparities due to air pollution, achieving, and maintaining air quality standards, and implementing exemplary regulatory programs and compliance with federal, State, and regional regulations.

Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area, including San Mateo County. It also functions as the federally mandated metropolitan planning organization (MPO) for the region. It is responsible for regularly updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities.

Local Regulations

General Plan

The City of San Carlos General Plan Circulation & Scenic Highways Element (adopted October 2009) provides a framework for development within the City. Policies and strategies that are pertinent to the transportation analysis for the proposed project are summarized below:

- POLICY CSH-2.2 Continue to support operation of adequate public bus service throughout San Carlos.
- POLICY CSH-2.3 Access to public transportation facilities should be convenient and designed to encourage use of public transit.
- POLICY CSH-3.1 Strive to reduce baseline and development-related traffic by 20 percent through public-private partnership efforts.
- POLICY CSH-3.12 The City should preserve its existing alley and pedestrian path systems to the maximum extent feasible.
- POLICY CSH-3.2 Support city-wide efforts to reduce vehicular trips within and through the community.
- POLICY CSH-3.3 Support the incorporation of Transportation Demand Measures in new development to reduce traffic impacts.
- POLICY CSH-5.1 Connect neighborhoods, school sites, activity centers, transportation centers, recreational sites and other important community amenities with sidewalks, pedestrian paths, trails and bikeways.
- POLICY CSH-6.1 Bicycling and walking facilities should be incorporated into all new development projects to the maximum extent feasible.
- POLICY CSH-6.2 Support transit-oriented development with mixed, dense land use that reduces the need to travel and that is linked to good transit. The City shall work with local, regional and State representatives to encourage the support and funding of transit-oriented development projects.

Bicycle and Pedestrian Master Plan

The City of San Carlos Bicycle and Pedestrian Master Plan (adopted June 9, 2020) establishes a long-term vision for improving walking and bicycling in San Carlos and provides a strategy to develop a comprehensive bicycling and walking network that provides access to transit, schools and downtown. This document also identifies a plan to implement these projects and programs through prioritization and phasing to ensure projects are management and fundable.

This plan is an essential tool for guiding city staff and the development community in building a balanced transportation system where active modes are supported and accessible. The goal of the plan is to promote walking and bicycling through the creation of safe, comfortable, and connected networks, and to encourage alternatives to single-occupancy motor vehicle trips.

Transportation Significance Criteria

The City of San Carlos Transportation Significance Criteria was adopted by the City Council in September 2020. This adopted resolution aligns the City's transportation analysis procedures with state goals for climate change, active transportation, as well as the guidelines described in the Governor's Office of Planning and Research (OPR) for CEQA transportation analysis.

East Side Innovation District Vision Plan

The East Side Innovation District Vision Plan (adopted October 25, 2021) presents planning strategies, goals, principles, and action items to achieve the desired characteristics for the future East Side Innovation District area. This plan is meant to be used at the very beginning stages of project development to determine how a project can be conceptualized and programmed so that a portion of the plan can be fulfilled with each act of new construction or public involvement.

CEQA Checklist

Following is a discussion and analysis of transportation related CEQA checklist items. The results are summarized in Table 3 and a discussion of each criterion follows.

Table 3 – XVII. TRANSPORTATION/TRAFFIC				
Would the Project:	**Potentially Significant Impact**	**Less than Significant Impact with Mitigation**	**Less than Significant Impact**	**No Impact**
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Discussion of CEQA Checklist Items

a. Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

The proposed project was evaluated to determine whether it would conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bicycle racks, Class IV bikeways, etc.) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by existing transit, bicycle, or pedestrian facilities and plans.

Employees traveling to and from the proposed project site would have the option of driving, taking transit, walking, or cycling.

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of sidewalks, crosswalks, pedestrian signals, and curb ramps provide access for pedestrians in the vicinity of the proposed project site; however, sidewalk gaps, obstacles, and barriers can be found along some of the roadways connecting to the project site. Existing gaps and obstacles along the connecting roadways can impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

- **Old County Road** – Within the study area, continuous sidewalk coverage is provided on both sides Old County Road, except for the segment south of Montgomery Street where sidewalks are only available on the east side. Lighting is provided by overhead streetlights.

- **Commercial Street** – Intermittent sidewalks currently exist on both sides of Commercial Street between Old County Road and Industrial Road. Lighting is provided by overhead streetlights. It is noted that a new sidewalk along the south side of Commercial Street between Old County Road and Industrial Road is anticipated to be completed by others.
- **Industrial Road** – Continuous sidewalks are provided on Industrial Road within the vicinity of the proposed project. In general, Industrial Road has adequate pedestrian facilities including crosswalks, curb ramps, overhead streetlights, etc.
- **Caltrain Pedestrian Tunnel –** A tunnel provides access under the above-grade Caltrain tracks, connecting El Camino and Old County Road. Access is restricted in the tunnel to pedestrians and cyclists only. The tunnel includes overhead lighting and is approximately 15 feet wide and 50 feet in length.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, Class II bike lanes exist on Old County Road and Industrial Road. Bicyclists ride in the roadway and/or on sidewalks along all other streets within the project study area. Table 4 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *City of San Carlos Bicycle and Pedestrian Master Plan*, 2020.

Table 4 – Bicycle Facility Summary

Status *Facility*	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Existing				
Alameda De Las Pulgas	II	1.5	San Carlos Ave	South City Limits
Brittan Ave	II	0.8	Alameda De Las Pulgas	Elm St
Industrial Rd	II	2.1	North City Limits	South City Limits
Old County Rd	II	1.0	Terminal Wy	South City Limits
San Carlos Ave	II	1.0	Beverly Dr	Elm St
East San Carlos Ave	IIIB	0.3	Old County Rd	Industrial Rd
Arroyo Ave	III	0.8	Tarmack Ave	El Camino Real
Cedar St	III	1.9	Hull Dr	North City Limits
Old County Rd	III	1.2	North City Limits	Terminal Wy
San Carlos Ave	III	0.2	Elm St	Laurel St

Table 4 – Bicycle Facility Summary

Status / ***Facility***	**Class**	**Length (miles)**	**Begin Point**	**End Point**
Planned				
Bransten-Commercial Path	I	0.3	Old County Rd	Industrial Rd
Pulgas Creek Path	I	0.3	Old County Rd	Industrial Rd
Commercial St	II	0.3	Old County Rd	Industrial Rd
Arroyo Ave	IIIB	0.8	Tamarack Ave	El Camino Real
El Camino Real	IV	2.0	North City Limits	South City Limits
Old County Rd	IV	2.0	North City Limits	South City Limits
Industrial Rd	IV	2.1	North City Limits	South City Limits

Source: *City of San Carlos Bicycle and Pedestrian Master Plan*, 2020

Proposed Project Improvements to Pedestrian and Bicycle Facilities

The proposed project includes numerous changes to the existing pedestrian and bicycle network. It is presumed that these new facilities would be designed and constructed to current City standards to accommodate both pedestrians and bicyclists. All proposed improvements would be within the public right-of-way and would enhance pedestrian and bicycle safety, comfort, and mobility within the vicinity of the project site, specifically providing improved and continuous access between the project site and transit stops including the San Carlos Caltrain Station and SamTrans bus stops along El Camino Real. These improvements are also consistent with local policies and ordinances. A summary of these changes is provided below.

- Demolish and reconstruct the sidewalks along the project frontages along Bransten Road, Commercial Street and Old County Road. This would include ADA-compliant curb ramps and improved sidewalks.
- Construct a new Class IV Bikeway along the western side of Old County Road between Bransten Road and Commercial Street. It is noted that Old County Road north of Bransten Road would remain a Class III Bike Route until additional portions of the Old Country Road Class IV Bikeway is completed by others.
- Establishment of a bicycle crosswalk across Old County Road at the intersection of Old County Road/Bransten Road that connects the future Class IV Bikeway on Old County Road with Bransten Road.

Detailed design of the transition between the Class IV Bikeway to Class II bike lanes at the intersection of Old County Road and Bransten Road is currently undergoing a review and refinement process by City staff and as such has not been finalized, and therefore is not included with this evaluation. Upon completion of the review and refinement process, the design of this bicycle facility transition is not expected to substantially increase hazards due to a geometric design feature or incompatible use.

Transit Facilities

During the 2020-2022 Coronavirus (COVID-19) Global Pandemic, transit agencies throughout the San Francisco Bay Area have significantly reduced the amount of service provided. This includes the number of routes and bus stops serviced, the frequency of buses and trains, and the truncation of service hours. The addition of project-generated demand is generally expected to incrementally increase the use of transit within the study area. The additional transit trips would be spread out during the day, and also over several SamTrans bus lines and Caltrain rail service. The following is a snapshot of existing conditions, and it is noted that transit providers regularly update services in response to changing levels of transit demand.

SamTrans

The San Mateo County Transit District (SamTrans) provides fixed route bus service in San Carlos and throughout San Mateo County. SamTrans buses are equipped with the bike racks that can carry three bicycles. Bike rack space is on a first come, first served basis and riders must be able to load and unload their bicycles without any help from the operator. Two additional bicycles are allowed on SamTrans buses at the discretion of the driver and depending on passenger loads.

Route 397 provides service between San Francisco and Palo Alto with stops on El Camino Real in San Carlos. Route 397 operates seven days a week with 60-minute headways. The northbound route operates three buses between 12:46 a.m. and 4:54 a.m., while the southbound route operates four buses from 1:15 a.m. to 6:37 a.m. This route does not operate midday or in the evening. The bus stop nearest the project site is at the intersection of El Camino Real/Brittan Avenue, located approximately 0.1 miles from the project site.

Route 398 provides service between San Francisco and Redwood City along El Camino Real within San Carlos. Route 398 operates seven days a week with approximately 60-minute headways between 5:10 a.m. and 11:27 p.m. on weekdays, and around 6:00 a.m. to 11:00 p.m. on weekends. The bus stop nearest the project site is at the intersection of El Camino Real/Brittan Avenue, located approximately 0.1 miles from the project site.

Route ECR provides service between the Daly City BART station and Palo Alto with stops on El Camino Real within the study area. Route ECR operates seven days a week with 15- to 20-minute headways between 4:00 a.m. and 1:30 a.m. on weekdays and 30-minute headways between around 5:00 a.m. and 2:00 a.m. on weekends. The bus stop nearest the project site is at the intersection of El Camino Real/Brittan Avenue, located approximately 0.1 miles from the project site.

Redi-Wheels and RediCoast, also known as paratransit or door-to-door service, are available for those who are unable to independently use the transit system due to a physical or mental disability. Redi-Wheels is designed to serve the needs of individuals with disabilities within SamTrans and the greater San Carlos area. Trips must be scheduled at least one day in advance.

Caltrain

Caltrain is the commuter rail line serving the San Francisco Peninsula. It connects San Carlos with San Francisco to the north and San Jose and Gilroy to the south. On weekdays there are 56 trains servicing the San Carlos Station in the northbound and southbound directions, 15 of which provide limited-stop, express service. On weekends there are 12 trains that stop at the station in each direction on Saturdays, and 10 trains in each direction on Sundays. The San Carlos Caltrain Station is located just east of El Camino Real/San Carlos Avenue, approximately 0.46 miles from the project site. Both bicycle racks and lockers are provided at the San Carlos station. Bicycle racks are available on a first-come-first-served basis, while lockers must be reserved. Furthermore, paid vehicle parking is available at the station for riders.

On-Demand Transportation Services

On-demand private vehicle services (e.g., taxi, Uber, Lyft, etc.) are available in the study area 24 hours a day. These vehicles can be used for trips within the study area and farther destinations, including nearby airports and major transit stations.

Effect on East San Carlos Residential Streets

The City has separately been working with the East San Carlos Neighborhood to quantify and project existing and future cut-through traffic and potential measures to reduce such traffic as requested by concerned neighbors.

That process will continue to proceed separately, but the following statement demonstrates that cut-through traffic would not represent an environmental impact under CEQA for this project.

The City of San Carlos Neighborhood Traffic Management Program (NTMP) defines a local street as a low-speed, low-volume roadway that provides direct and full access to abutting land uses. These streets typically have two travel lanes with parking on both sides and daily traffic volumes of less than 1,200 vehicles per day.

The proposed project would generate 2,346 new daily vehicle trips, including 295 a.m. and 237 p.m. trips during the peak hours. In addition, the project would be required to implement a TDM program that would reduce the number of trips by at least 20 percent. Based on the projected trip distribution pattern and likely paths of travel, 61 percent of project trips would use the segments of either Old County Road or Industrial Road between Holly Street and Commercial Street to access the project site. Of these project trips, approximately 4.3 percent would be projected to use local residential streets to travel between Old County Road and Industrial Road within the area bounded by Old County Road, East San Carlos Avenue, Industrial Road, and Terminal Way, even in the absence of measures under consideration to reduce residential cut-through traffic. Based on the volume of added traffic in this area the proposed project would not substantially increase hazards due to a geometric design feature, nor result in inadequate emergency access. Furthermore, the addition of project-related traffic to existing volumes along these local streets are not predicted to exceed the 1,200 vehicle per day definition for a local street. Therefore, the addition of project-related vehicle trips to local streets would not conflict with the standards described in the NTMP.

Finding - Pedestrian, bicycle, and transit facilities, including those to be constructed with the proposed project, would be adequate to serve the project as proposed, based on the existing and proposed network of pedestrian, bicycle and transit facilities within the study area.

Additionally, the project would not conflict with any current programs, plans, ordinances, or policies addressing the circulation system. Therefore, the proposed project would be expected to have a less-than-significant impact on local programs, plans, ordinances, or policies.

b. Would the Project conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Senate Bill (SB) 743 established the potential increase in Vehicle Miles Traveled (VMT) associated with a project as the basis for determining transportation impacts of development projects. Guidance provided by both the California Governor's Office of Planning and Research (OPR) in the publication *Transportation Impacts (SB 743) CEQA Guidelines Update and Technical Advisory* (2018) and the City of San Carlos' *Transportation Significance Criteria Implementing Vehicle Miles Traveled* (2020) was used.

OPR proposes that an office project exceeding a level of 15 percent below the existing regional VMT per service population may indicate a significant transportation impact. For the purposes of this analysis, Research and Development (R&D) and Life Science uses are considered similar to office projects, as they are employment uses with similar travel patterns. The OPR publication, as well as CEQA Guidelines Section 15064.3(b)(1), also indicate that "generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact." However, City of San Carlos policy states that office, commercial and mixed-use projects that are within one-half mile of transit have the potential to increase VMT, depending on the land use, scale of the project, and tenant. As such, office, commercial and mixed-use projects that generate more than 100 daily trips should be evaluated.

According to the walkshed map provided with the City's Transportation Significance Criteria, this project site is located within the half-mile walkshed of the El Camino Real transit corridor and is also located just beyond the designated Priority Development Area and Transit Priority Area surrounding the San Carlos Caltrain Station. While this would qualify the project for screening under the OPR guidance, City policy requires consideration of VMT impacts for all office, commercial and mixed-use projects that generate more than 100 daily trips. Therefore, a quantified VMT analysis is included below.

A VMT analysis was conducted for the proposed project, per SB 743 and the City of San Carlos VMT Policy. The C/CAG-VTA Bi-County model was used for the VMT analysis, consistent with City and County guidelines for preparation of travel forecasts that include both VMT and trip estimates for the proposed project. Based on data from this model, San Mateo County has a Countywide average VMT for the existing 2019 year of 17.0 miles per service population. Applying the previously described guidance, an office project generating a VMT that is 15 percent or more below this value, or 14.5 miles per service population or less, would have a less-than-significant VMT impact. A summary of the VMT analysis results is enclosed.

This project as forecasted by the C/CAG-VTA Bi-County model would have an average VMT of 15.2 miles per service population in the 2040 cumulative plus project scenario. A Transportation Demand Management (TDM) program includes measures which can reduce the need for vehicle travel by employees of the proposed project. The TDM program proposed for this project is required per City of San Carlos Municipal Code Section 18.25.03 and is expected to reduce project-trips by 20 percent as well as the project-VMT by 20 percent according to calculations developed for CAPCOA. Successful implementation of the project's proposed TDM program would be expected to reduce VMT and would result in the project having a less-than-significant VMT impact. A summary of VMT reductions attributable to TDM is provided in Table 5 and a summary of the VMT analysis findings is provided in Table 6.

Table 5 – Summary of VMT Reduction Attributable to Proposed TDM Measures

Measure	**Description**	**Approximate VMT Reduction**
Carpool and Vanpool Programs	Rideshare matching service and incentives	-8.0%
Transit Subsidies	Assumes a full transit subsidy	-5.5%
TDM Administration and Promotion	Transportation coordinator, commute trip reduction marketing, annual monitoring, online kiosk and information packets	-4.0%
Bicycle and Pedestrian Amenities	Showers and lockers, bike lockers, bike repair stations, etc.	-2.7%
Modified Work Schedules/Telecommuting	Assumes 10% of employees work a 4/40 schedule	-1.5%
Guaranteed Ride Home		Supportive
Total		-21.7%
Dampened[1]		**-20.0%**

[1] Total reduction is dampened to 20.0% (per application of calculation methodologies) to reflect diminishing effectiveness of combined measures

Table 6 – Vehicle Miles Traveled Analysis Summary					
VMT Metric	**Baseline VMT Rate**	**Significance Threshold (15% below Baseline)**	**Project VMT Rate**	**Project VMT Rate (with TDM)**	**Significance**
Employment-based VMT per Service Population	17.0	14.5	15.2	12.2	Less-Than-Significant

Note: VMT Rate is measured in VMT per Service Population; Project Reduced VMT Rate is 15.2 less 20% = 12.2

The TDM Plan shall be prepared and implemented that includes, at a minimum, the following elements:

1. The project applicant will designate an on-site Transportation Coordinator that will be responsible for implementation of the TDM Plan, including providing relevant TDM trip reduction and program information to all employees on site, and arranging for independent annual monitoring and employee surveys.

2. The project applicant and the project's Transportation Coordinator will be responsible for ensuring that the TDM Plan is implemented each year and an annual monitoring report is submitted to the City of San Carlos.

3. Prior to the issuance of the first certificate of occupancy for the project, the TDM Plan must be completed and approved by the City of San Carlos. The project's designated Transportation Coordinator must provide a description and evidence of the programmatic TDM measures to be implemented and facilitate a site inspection by City staff to confirm that all approved physical measures in the project's TDM Plan are implemented and/or installed.

4. The TDM Plan monitoring will be completed by an independent consultant per Municipal Code Section 18.25.080. Regular monitoring will be necessary to ensure that the implemented TDM measures are effective and achieve the stated 20-percent trip reduction and 20-percent VMT reduction goal.

5. Consistent with common traffic engineering data collection principles, traffic conditions will be monitored annually by means of daily and a.m. and p.m. commute hour driveway counts at each project access point. The counts will include daily as well as peak hour traffic counts to be collected between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. on three non-consecutive days per year on typical weekdays (Tuesday, Wednesday, or Thursday) during the fall when school is in session. Mechanical tube counts, hand counts, or video counts may be used. The peak 60-minute period will be calculated for each two-hour traffic count period.

6. An annual employee survey will be conducted by an independent consultant to determine employee transportation mode choice (e.g., drive alone, carpool, bus, Caltrain, etc.). This annual commuter survey should be formatted as a general survey including non-transportation questions (e.g., satisfaction with property management, activities, etc.) to increase the response rate.

7. The project's Transportation Coordinator will work with an independent consultant to obtain traffic count data, implement the annual employee commuter surveys, and document all findings in a TDM monitoring report. The annual monitoring report will be submitted to the City of San Carlos by the Transportation Coordinator. The TDM Plan monitoring data will be reviewed by the City to assess whether the goal of a 20-percent trip reduction and 20-percent VMT reduction are being met. This will be assessed by comparing the driveway counts to the trip targets identified in this report.

8. For the life of the project, a monitoring form must be completed and approved on an annual basis to verify that both vehicle trip and VMT reduction goals per phase are being achieved. If the annual monitoring report shows that the applicable targets have not been achieved for the project, the applicant shall submit a list of

TDM Plan modifications to the Planning Director for approval within 60 calendar days of the report submittal. The Planning Director shall review the list of modifications and may also recommend modifications to the TDM Plan, as appropriate, to ensure that the applicable targets are achieved. Upon approval of the requested changes, the applicant shall have 30 calendar days to implement the approved measures. The applicant shall then submit a follow-up monitoring report within six months of implementation of the new measures.

9. If the project continues to not achieve the applicable targets, the City shall have the option to withhold the issuance of building permits, certificates of occupancy, and other City issued permits or licenses, or require the applicant to enact other measures as appropriate to achieve a minimum of 20-percent trip reduction on a daily, a.m. peak hour and p.m. peak hour basis or the necessary VMT reduction goal.

10. Within three months prior to the occupancy of future phases of development, the applicant must submit an updated monitoring form. If the project does not achieve the applicable targets set for each phase, the City shall have the option to withhold the issuance of building permits, certificates of occupancy, and other City issued permits or licenses for the future phase of development.

Finding – The project, including implementation of its TDM Plan, would be expected to have a VMT rate which is lower than the threshold of 14.5 VMT/service population (15 percent below the Countywide average of 17.0), which would result in a less-than-significant VMT impact.

c. Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Site Access

Vehicles would enter and exit the project site from driveways located on Commercial Street and Bransten Road. Each driveway would provide full access allowing for both left- and right-hand turns. The driveways on Commercial Street and Bransten Road would be located approximately 200 and 310 feet east of Old County Road, respectively. Each driveway would access the proposed garage structure as well as the main internal roadway that extends between Commercial Street and Bransten Road.

Pedestrian access to the building would be provided via various pedestrian entrances facing Old County Road, Bransten Road and Commercial Street. The network of walkways surrounding each building would provide access to the ground floor plaza between the North and South Buildings.

A vehicle queue analysis was conducted and indicated that the vehicle storage for the westbound (Commercial Street) approach to the Old County Road/Commercial Street intersection is expected to extend beyond the proposed driveway location under the cumulative condition. This queue would potentially block access to the site driveway on Commercial Street during peak hours. However, in the event the driveway is blocked, motorists would access the site via the Bransten Road driveway. As such, the queue on Commercial Street would not be a significant impact.

Sight Distance

At driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting to enter the street and the driver of an approaching vehicle. Sight distances along Industrial Road at the project driveway were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for driveway approaches are based on stopping sight distance and use the approach travel speed as the basis for determining the recommended sight distance. The posted speed limit for Commercial Street and Bransten Road are both 25 mph. Based on these speed limits, the minimum stopping sight distance required would be 150 feet along both Commercial Street and Bransten Road. These roads are relatively flat and straight with favorable sight lines along the project frontage. A review of publicly available aerial photographs shows that sight distances at each proposed project driveway location would extend up to 400 feet. Therefore, the sight distance for motorists exiting either project driveway is adequate since the available sight distance is greater than the 150 feet required.

For a motorist traveling along either eastbound Commercial Street or westbound Bransten Road intending to turn left into a project driveway, the stopping sight distance either looking east along Commercial Street or west along Bransten Road also extends up to 400 feet, which also exceeds the required 150 feet and is more than adequate for the posted speed limit of 25 mph.

The posted speed limit on Old County Road is 35 mph and the recommended sight distance is 250 feet. For a driver traveling on Old County Road in either direction approaching the bicycle crossing at the intersection of Bransten Road/Old County Road there is a stopping sight distance of 500 feet in each direction, which is more than adequate for the posted speed limit.

Finding – The project must be designed to meet applicable Federal, State and City codes and regulations, and as a result would not introduce any new hazards in terms of its design. Adequate sight lines would be provided at each of the proposed project access points. All roadway modifications proposed by the project would be designed and constructed to meet current City standards and therefore would have no impact in terms of potentially increasing hazards related to design features. The project also proposes to modify various elements of the transportation network including changes to adjacent sidewalks, crosswalks, bicycle facilities and travel lanes within the study area. However, the proposed project would not increase hazards due to geometric design features and would have a less-than-significant impact regarding geometric design features or incompatible uses.

Would the Project result in inadequate emergency access?

Emergency Access

All driveways and internal roadways would be designed and constructed to current City standards to accommodate both passenger and emergency vehicles. Emergency response vehicles would be able to access the site via driveways on Commercial Street and Bransten Road as illustrated on the plan sheets (C5.0) enclosed. Since all roadway users must yield the right-of-way to emergency vehicles when using their sirens and lights, the added project-generated traffic would not impact access for emergency vehicles.

Finding – The project would result in a less-than-significant impact regarding adequacy of emergency access since all driveways and internal roadways would be designed to accommodate emergency vehicles and all roadway users must yield to emergency vehicles when using their lights and sirens.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

Kenneth Jeong, PE
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
MARK E. SPENCER
TR001737
TRAFFIC
STATE OF CALIFORNIA

Mark Spencer, PE
Senior Principal

MES/kbj/SCA028.L1

Enclosures: VMT Analysis Summary, Preliminary Fire Access Plan Sheet C5.0

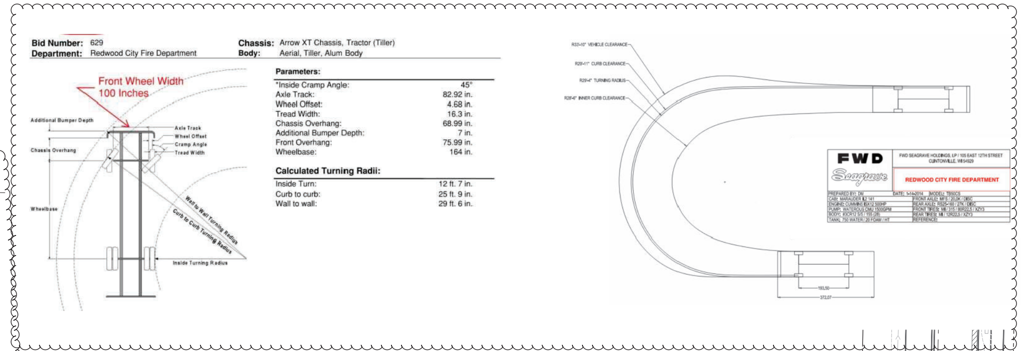
Table 1: VMT Results

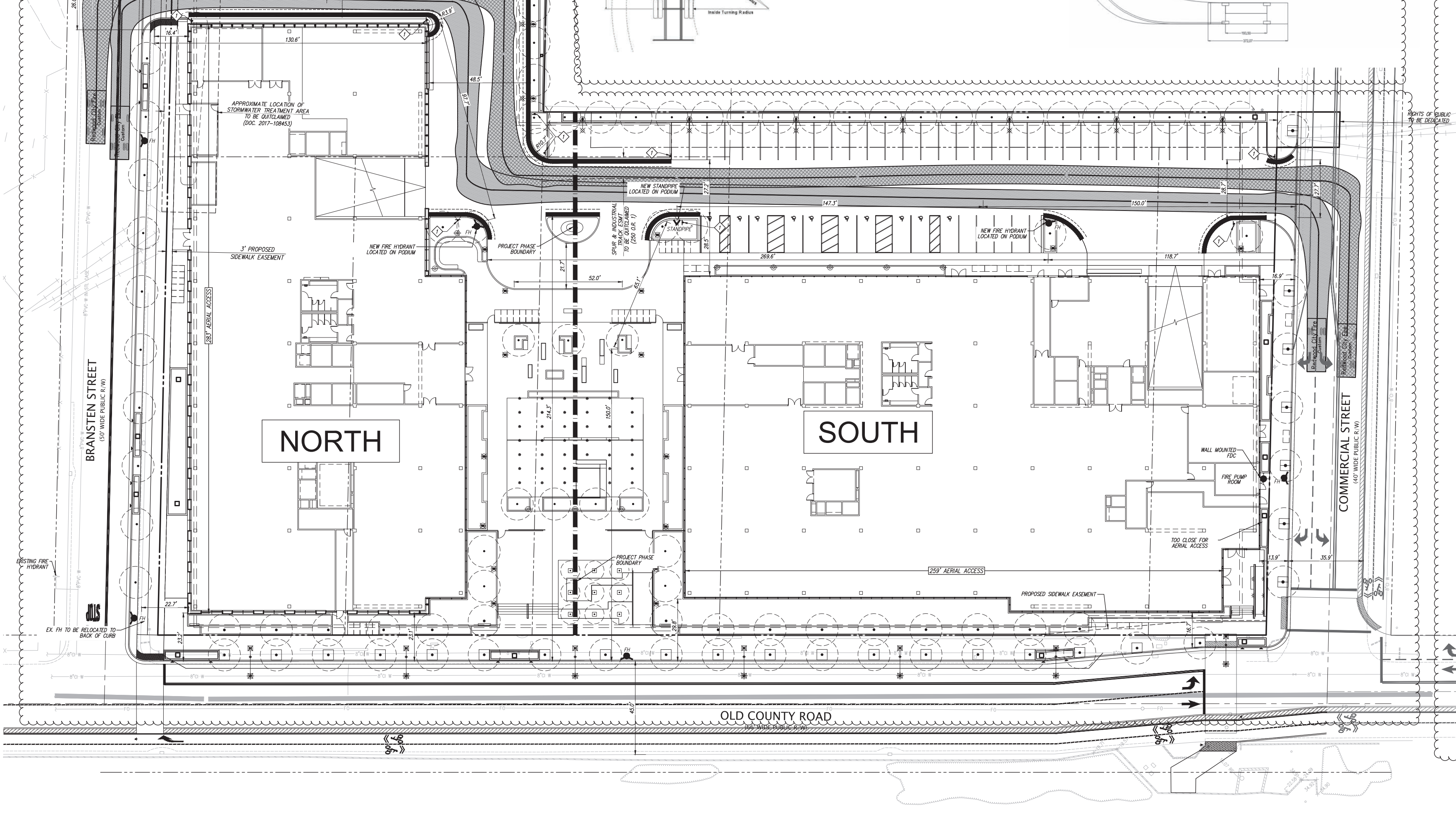
Location	Population	Employment	VMT_HH	VMT_EMP	VMT Per Service	VMT/Service Pop	Mitigated VMT (15% below)	Mitigated VMT Required by TDM Plan
2019 - No-Project & 831 Old County Rd Project								
Old County TAZ 2013	-	-	-	-	-	-	-	-
City	32,432	20,955	511,366	398,674	910,040	17.0		
County	781,121	383,605	12,375,840	7,468,941	19,844,781	17.0	14.5	
Region	7,738,947	3,848,620	120,601,346	66,743,539	187,344,885	16.2		
2040 - No-Project								
Old County TAZ 2013	-	-	-	-	-			
City	32,526	18,934	535,440	373,655	909,095	17.7		
County	928,919	478,336	14,027,506	9,760,791	23,788,297	16.9		
Region	9,662,080	4,717,488	154,521,640	83,687,638	238,209,278	16.6		
2040 - 803 Old County Rd - Project (TAZ 2013)								
Old County TAZ 2013	-	1,085	0	16,544	16,544	15.2	0.8	830 (5%)
City	32,526	25,618	526,955	493,441	1,020,395	17.5		
County	928,917	485,008	13,994,807	9,890,024	23,884,831	16.9		
Region	9,662,080	4,723,088	154,257,511	83,587,956	237,845,468	16.5		

PLAN LEGEND

FH	FIRE HYDRANT
EX	EXISTING
R	RADIUS
(symbol)	(FH) FIRE HYDRANT
(symbol)	(FDC) FIRE DEPARTMENT CONNECTION
(symbol)	PAINTED RED CURB WITH WHITE LETTERING READING "NO PARKING – FIRE LANE"
	TEXT SHALL BE A MINIMUM OF FOUR INCHES TALL AND SHALL BE PLACED EVERY 30 FEET OR PORTION THEREOF, ON TOP OF DESIGNATED CURBING.
(symbol)	PROJECT PHASE BOUNDARY

Scale 1" = 20'





KEYNOTE

1 — "NO PARKING–FIRE LANE" SIGNS TO BE INSTALLED PER DETAIL 1

NOTES UNDERGROUND FIRE PROTECTION SYSTEM

1. THE UNDERGROUND FIRE PROTECTION SYSTEM SHOWN ON THIS DRAWING IS SCHEMATIC AND IS NOT INTENDED TO BE AN INSTALLATION DRAWING. THIS DRAWING SHALL NOT BE USED AS A BASE SHEET FOR SHOP DRAWINGS WITHOUT WRITTEN APPROVAL OF THE PREPARER.
2. THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLER SHALL PREPARE SHOP DRAWINGS SHOWING ALL INFORMATION REQUESTED BY SPECIFICATIONS, NFPA 13, 24 AND THE LOCAL FIRE MARSHAL.
3. THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLER SHALL SUBMIT SHOP DRAWINGS TO THE LOCAL FIRE MARSHAL/BUILDING OFFICIAL AND THE OWNER'S REVIEWING AGENT FOR PERMIT AND APPROVAL/ACCEPTANCE.
4. THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLER SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT, ALLOWING TIME FOR REVIEW AND ACCEPTANCE, PRIOR TO START OF WORK. REQUIREMENTS FOR SHOP DRAWINGS SUBMITTAL ARE LISTED IN SPECIFICATIONS.
5. SHOP DRAWINGS, APPROVED BY THE LOCAL FIRE MARSHAL AND OWNER'S REVIEWING AGENT, SHALL BE SUBMITTED BY THE UNDERGROUND FIRE PROTECTION SYSTEM INSTALLER, TO THE ARCHITECT, PRIOR TO REQUESTING FINAL APPROVAL AND PAYMENT. REQUIREMENTS FOR SHOP DRAWINGS SUBMITTAL ARE LISTED IN SPECIFICATIONS.
6. REFER TO SPECIFICATIONS FOR UNDERGROUND FIRE PROTECTION SYSTEM REQUIREMENTS. SPECIFICATIONS ARE PART OF THE CONTRACT DOCUMENTS AND APPLIES TO THE GENERAL CONTRACTOR AND THE FIRE PROTECTION SYSTEM INSTALLER.
7. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF COMPLIANCE OF THE SHOP DRAWINGS TO THE PLANS AND SPECIFICATIONS PRIOR TO SUBMITTAL.
8. GENERAL CONTRACTOR SHALL NOT DIVIDE THE WORK SPECIFIED UNDER THIS SECTION BETWEEN SUBCONTRACTORS.
9. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND EQUIPMENT LOCATIONS. RISER LOCATIONS ARE SHOWN ON ARCHITECTURAL DRAWINGS. 10. SEE ARCHITECTURAL FLOOR PLANS FOR DIMENSIONED AUTOMATIC SPRINKLER RISER (ASR) LOCATIONS.

FIRE FLOW AND HYDRANT SPACING CALCULATION

THE FOLLOWING IS BASED ON THE FEBRUARY 11 2021 COORDINATION SET GROSS AREA DRAWINGS.

BUILDING IS TYPE 1–B CONSTRUCTION

TOTAL BUILDING GSF: 607,003 SF

FIRE FLOW FOR TYPE I–B BASED ON THREE LARGEST SUCCESSIVE FLOORS (CFC APPENDIX B SECTION B104.3):
- BASEMENT LEVEL 1: 134,789 SF
- BASEMENT LEVEL 2: 134,789 SF
- TOWER A+B LEVEL 1: 77,273 SF

TOTAL: 346 , 851 SF

PER CFC APPENDIX B TABLE B105.1(2) FIRE FLOW: 6,000 GPM AT 20 PSI

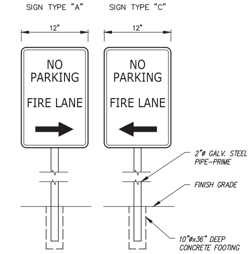
REDWOOD CITY FIRE CODE 507.1.1 AND CFC TABLE B105.2, ALLOWS A 50% REDUCTION IN FIRE FLOW WHERE THE BUILDING IS INSTALLED WITH AN AUTOMATIC SPRINKLER SYSTEM.
REQUIRED FIRE FLOW: 3,000 GPM AT 20 PSI

PER CFC APPENDIX C TABLE C102.1, A FIRE FLOW OF ~3,000 GPM REQUIRES:
- 3 FIRE HYDRANTS
- AVERAGE SPACING OF 600 FT*
- MAX DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT OF 337 FT*

* FOOTNOTE F PER TABLE C102.1 ALLOWS FOR A 50% SPACING INCREASE WHERE THE BUILDING IS SPRINKLERED
**CALCULATIONS PROVIDED BY HOLMES FIRE

ACCESS NOTE

1. THE ON–SITE FIRE ACCESS ROADS HAVE BEEN DESIGNED TO ACCOMMODATE THE CLEARANCE REQUIREMENTS OF THE TB50CS MODEL REDWOOD CITY FIRE TRUCK. SEE TURNING TEMPLATE PROVIDED ON THIS SHEET.
2. THE GROUND FLOOR SLAB AT THE NORTHERN AND SOUTHERN ENTRANCES TO THE SITE WILL BE DESIGNED TO SUPPORT FIRE TRUCK ACCESS (HS20–44 PER AASHTO).



FIRE LAN "NO PARKING" SIGN 1
NOT TO SCALE

ISSUED FOR:	DATE:
PLANNING SUBMISSION	2021-05-12
⚠ PLANNING RESUBMISSION	2021-12-02

SEAL / DISCLAIMER: REGISTERED PROFESSIONAL ENGINEER NEKTARIOS MATHEOU 71236 CIVIL STATE OF CALIFORNIA

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NORTH SOUTH

PRELIMINARY FIRE ACCESS PLAN

C5.0

PROJECT NO. A19129

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