APPENDIX A:
NOTICE OF PREPARATION AND SCOPING COMMENTS

APPENDIX A1:
NOTICE OF PREPARATION

CITY OF SAN CARLOS
COMMUNITY DEVELOPMENT
PLANNING DIVISION

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Notice of Preparation Environmental Impact Report City of San Carlos

Date: **June 3, 2024**

To: State Clearinghouse
Governor's Office of Planning and Research
San Mateo County Clerk
Responsible and Trustee Agencies
Interested Individuals and Organizations

From: Lisa Porras
Planning Manager
City of San Carlos
600 Elm Street
San Carlos, CA 94070-3085
Email: LPorras@cityofsancarlos.org

Subject: **Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the 2045 General Plan Reset**

Lead Agency: City of San Carlos
Project Title: 2045 General Plan Reset
Project Location: San Carlos, CA

Call for Comments:
The City is requesting written comments from responsible agencies and the public regarding the scope and content of the environmental document regarding the 2045 General Plan Reset. The program-level EIR will evaluate the environmental impacts associated with the likely type and amount of development projected under the 2045 horizon year of the 2045 General Plan Reset. This EIR will not evaluate detailed, site-specific activities and future development projects under the General Plan. The EIR will include an evaluation of project alternatives that could reduce significant impacts associated with the proposed 2045 General Plan Reset. The proposed project, its location, and potential environmental effects are described below.

Preparing an Environmental Impact Report:
Notice is hereby given that the City of San Carlos (City) will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the 2045 General Plan Reset (proposed project) pursuant to the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations Section 15060(d)); however, several CEQA topic areas are not anticipated to result in significant environmental effects, thus, an Initial Study was prepared before the City begins work directly on the EIR.

Comment Submittal:
Written comments on the NOP are due no later than the close of the 30-day NOP review period at **5:00 p.m. on July 3, 2024**. Please send your written comments to Akanksha Chopra, Associate Planner, at the address shown below or email to AdvancePlanning@cityofsancarlos.org with "2045 General Plan Reset EIR" as the subject. Public agencies providing comments are asked to include a contact person for the agency.

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

The City is requesting comments and guidance on the scope and content of the EIR from interested public agencies, organizations, and individuals. With respect to the views of Responsible and Trustee Agencies as to significant environmental issues, the City needs to know the reasonable alternatives and mitigation measures that are germane to each agency's statutory responsibilities in connection with the project.

Public Meeting:
The City is conducting an EIR Scoping Meeting on **Monday, June 17, 2024 at 7:00 p.m.** This meeting will be conducted both in person at City Hall and virtually via Zoom.

In-Person Participation
The meeting will be held at the Planning and Transportation Commission regular meeting in the City Hall Council Chambers, 600 Elm Street.

To address the Commission on any item on the posted agenda, fill out a Request to Speak Form located in the back of the Council Chambers and submit it to staff; or, you may raise your hand when the Chair calls for public comments.

Masks are no longer required, but are still recommended by the California Department of Health. To maintain public health and safety, please do not attend in person if you are experiencing respiratory symptoms (e.g. cough, runny nose, and/or sore throat).

Remote Participation
This meeting may also be observed remotely via the following options:

- Zoom: https://us02web.zoom.us/j/88635467439; or call 1-669-900-9128 and enter the Meeting ID #: 886 3546 7439
- Meeting Webportal: www.cityofsancarlos.org/agenda
- Local TV: Comcast Channel 27 and AT&T Uverse Channel 99

If you are participating remotely and plan to make a public comment on any item on the posted agenda, please observe the meeting via Zoom (see above access information), and, during the public comment period for the agenda item you wish to address, use the "raise hand" feature. If joining Zoom by phone, press *9 to "raise hand."

Project Location:
Along the San Francisco Bay, with the City of Belmont to the north and the City of Redwood City to the south, the City of San Carlos encompasses the land from the San Francisco Bay to Interstate 280. The proposed project applies citywide. The City of San Carlos, EIR Study Area, and Sphere of Influence (SOI) are mapped in Figure 1, Regional and Vicinity Map.

Project Sponsor:
City of San Carlos

Project Description:
The proposed project is an update to the City of San Carlos' 2030 General Plan to amend the buildout capacity of the City of San Carlos' General Plan.

There are currently a variety of planning efforts being undertaken in the city, as well as ongoing development projects. The Northeast Area Specific Plan and Downtown Specific Plan are being prepared concurrently with this project. An EIR is being prepared separately for the Northeast Area Specific Plan; please see the project website for details: https://www.sancarlosnortheastplan.com/. Because the Downtown Specific Plan is planned to be consistent with the 2045 General Plan Reset, it is anticipated that an Addendum to the General Plan Reset EIR will be prepared for the Downtown Specific Plan after certification of the 2045 General Plan Reset EIR; please see the project website for details: https://www.sancarlosdowntownplan.com/. Both Specific Plans include buildout projections that are incorporated into the citywide buildout capacity for the 2045 General Plan Reset.

Draft citywide buildout projections for the proposed 2045 General Plan Reset are provided in the table below. The numbers below represent net change from 2024 to 2045 within the city limit.

Draft – Citywide Net New Development Projections, 2024-2045

	Downtown Specific Plan Area	Northeast Area Specific Plan Area	Remainder of the City	Total Citywide
Housing Units	1,600	1,900	3,800	**7,300**
Population	3,000	3,700	7,300	**14,000**
Non-residential Square Footage	421,000	4,508,500	1,641,000	**6,570,500**
Jobs	1,000	13,800	4,200	**19,000**

Potential Environmental Effects:
An EIR will be prepared to analyze potential environmental impacts associated with the project. The proposed project could potentially affect the following environmental factors and each will be addressed in the EIR:

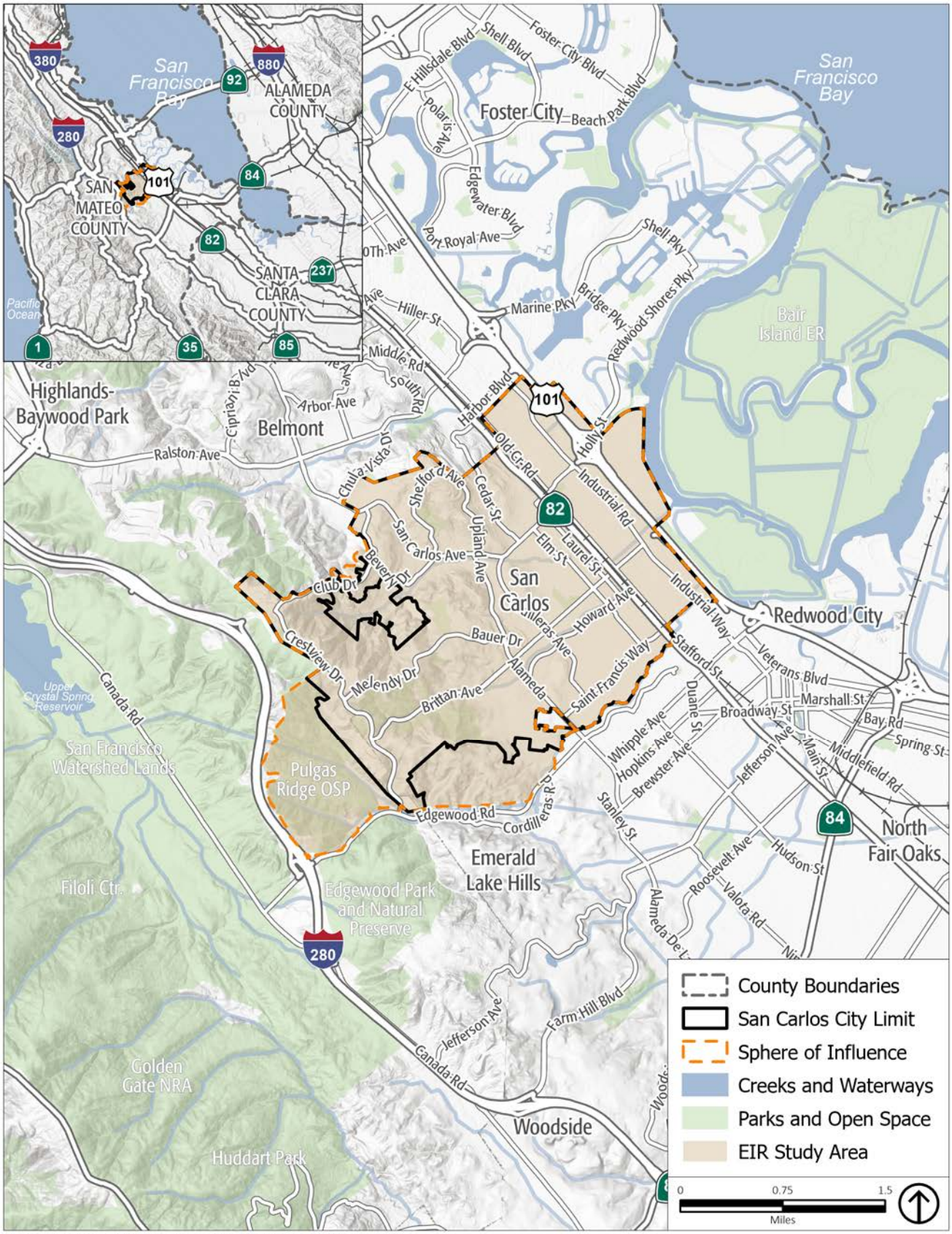
- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Services
- Wildfire

The EIR will include an evaluation of project alternatives that could reduce or avoid potential significant impacts.

Environmental Effects Not Likely to Require Further Analysis:
The proposed project is not anticipated to result in significant environmental effects on the following CEQA topic areas: agriculture and forestry resources, and mineral resources. An Initial Study was prepared to provide substantial evidence for these topic areas and is included as an attachment.

Attachments:
Attachment 1: Regional and Local Vicinity Map

Attachment 2: Initial Study



Source: City of San Carlos, 2024; PlaceWorks, 2024.

Attachment 1

Regional and Local Vicinity

Attachment 2: Initial Study

INTRODUCTION

This Initial Study Checklist was prepared to scope out and identify thresholds within the CEQA Checklist topics that will not be affected by the proposed project. All other thresholds within the CEQA Checklist topics will be addressed within the project Environmental Impact Report (EIR).

I. AESTHETICS

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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) In non-urbanized areas, 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 point.) 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 that would adversely affect day or nighttime views in the area?	■	❒	❒	❒

DISCUSSION

a-d) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

INITIAL STUDY

II. AGRICULTURE AND FORESTRY RESOURCES

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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, forestland (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?	❒	❒	❒	■

DISCUSSION

a-e) San Carlos is an urbanized setting and does not contain any Prime Farmland, Unique Farmland or Farmland of Statewide Importance.[1] There are no agricultural, forest, or timberland use zones or land uses within San Carlos.[2] Additionally, the city does not contain any Williamson Act contracts.[3] Neither San Carlos nor the immediately surrounding areas are zoned for forest land, timberland, or timber production. The proposed project would not involve changes to the existing environment that would result in the conversion of farmland to non-agricultural uses or forest land to non-forest use. Therefore, there would be *no impact*.

MITIGATION MEASURES

None required.

[1] California Department of Conservation, 2021, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed May 3, 2024.

[2] City of San Carlos, October 2009, San Carlos 2030 General Plan, Chapter 6 – Environmental Management Element, Page 111.

[3] California Department of Conservation, 2023, California Williamson Act Enrollment Finder, https://maps.conservation.ca.gov/dlrp/WilliamsonAct/, accessed May 3, 2024.

III. AIR QUALITY

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	■	❒	❒	❒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under 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?	■	❒	❒	❒

DISCUSSION

a-d) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

IV. BIOLOGICAL RESOURCES

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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 plan, policies, or regulations, or by the California Department of Fish and Wildlife 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, regulations or by the California Department of Fish and Wildlife or U.S. 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?	■	❒	❒	❒

INITIAL STUDY

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
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?	■	❒	❒	❒

DISCUSSION

a-f) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

V. CULTURAL RESOURCES

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	■	❒	❒	❒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	■	❒	❒	❒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	■	❒	❒	❒

DISCUSSION

a-c) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

VI. ENERGY

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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?	■	❒	❒	❒

DISCUSSION

a-b) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

VII. GEOLOGY AND SOILS

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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 by 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	■	❒	❒	❒

INITIAL STUDY

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	■	❒	❒	❒

DISCUSSION

a-f) These standards of significance will be assessed in the EIR. .

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

VIII. GREENHOUSE GAS EMISSIONS

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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 of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	■	❒	❒	❒

DISCUSSION

a-b) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	■	❒	❒	❒

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
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 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 material sites compiled pursuant to Government Code Section 65962.5 and, as a result, 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, result in a safety hazard or excessive noise 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?	■	❒	❒	❒

DISCUSSION

a-g) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

X. HYDROLOGY AND WATER QUALITY

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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?	■	❒	❒	❒

INITIAL STUDY

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
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 iv) Impede or redirect flood flows?	■	❒	❒	❒
d) In a 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?	■	❒	❒	❒

DISCUSSION

a-e) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

XI. LAND USE AND PLANNING

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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?	■	❒	❒	❒

DISCUSSION

a-b) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

XII. MINERAL RESOURCES

Would the proposed project:	Potentially Significant	Less than Significant With Mitigation Incorporated	Less than Significant	No Impact
a) Result in the loss of availability of a known mineral resource that would be a 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?	❒	❒	❒	■

DISCUSSION

a) The California Geological Survey (CGS), classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act (SMARA) of 1975 and assists in the designation of lands containing significant aggregate resources. CSG's Mineral Land Classification (MLC) Project provides objective economic-geologic expertise to assist in the protection and development of mineral resources through the land-use planning process. The mineral resource zone (MRZ) boundaries for San Carlos indicate that the city is in MRZ-1, MRZ-2, MRZ-3, and MRZ-4.[4] These MRZs indicate that either there is adequate information that no significant mineral deposits are present (MRZ-1); adequate information that significant mineral deposits are present, or there is a high likelihood for their presence (MRZ-2); adequate information that there are mineral deposits the significance of which cannot be evaluated from available data (MRZ-3); and inadequate information exists to assign an MRZ (MRZ4-4).[5] Areas in MRZ-2 are the areas of greatest concern for potential impacts to mineral resources.

There is one designated MRZ-2 in San Carlos, in northern San Carlos west of El Camino Real, in a developed portion of the city. There are no mining facilities with San Carlos and the closest mine is approximately 7 miles west of the CIty.[6] In addition, the city is not designated by SMARA as a regionally significant sector. Therefore, due to there being no significant mineral resources available, there would be *no impact.*

[4] California Department of Conservation, 1996, Generalized Mineral Land Classification Map of the South San Francisco Bay Production – Consumption Region, OFR 96-03, https://filerequest.conservation.ca.gov/?q=OFR_96-03, accessed on May 3, 2024.

[5] California Department of Conservation, 1996, Generalized Mineral Land Classification Map of the South San Francisco Bay Production – Consumption Region, OFR 96-03, https://filerequest.conservation.ca.gov/?q=OFR_96-03, accessed on May 3, 2024.

[6] California Department of Conservation, Mines Online, https://maps.conservation.ca.gov/mol/index.html

b) The EIR Study Area has not been classified or nominated as a locally important mineral resource recovery site.[7] Therefore, *no impact* would result.

MITIGATION MEASURES

None required.

XIII. NOISE

Would the proposed project result in:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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 in other applicable local, state, or federal standards?	■	❒	❒	❒
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 2 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?	■	❒	❒	❒

DISCUSSION

a-c) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures shall be included in the EIR.

[7] California Department of Conservation, 1996, Generalized Mineral Land Classification Map of the South San Francisco Bay Production – Consumption Region, OFR 96-03, https://filerequest.conservation.ca.gov/?q=OFR_96-03, accessed on May 3, 2024.

XIV. POPULATION AND HOUSING

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Induce substantial unplanned population growth or growth for which inadequate planning has occurred, 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?	■	❒	❒	❒

DISCUSSION

a-b) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures shall be included in the EIR.

XV. PUBLIC SERVICES

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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 public services:				
i) Fire protection?	■	❒	❒	❒
ii) Police protection?	■	❒	❒	❒
iii) Schools?	■	❒	❒	❒
iv) Parks?	■	❒	❒	❒
v) Other public facilities?	■	❒	❒	❒

INITIAL STUDY

DISCUSSION

a) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures shall be included in the EIR.

XVI. RECREATION

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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?	■	❒	❒	❒

DISCUSSION

a-b) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures shall be included in the EIR.

XVII. TRANSPORTATION

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	■	❒	❒	❒
b) 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 equipment)?	■	❒	❒	❒
d) Result in inadequate emergency access?	■	❒	❒	❒

DISCUSSION

a-d) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

XVIII. TRIBAL CULTURAL RESOURCES

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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 Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe.	■	❒	❒	❒

DISCUSSION

CEQA Guidelines Section 15064.5(b)(1), defines a substantial adverse change in the significance of a historical resource (defined as historical resource, archaeological resource, or tribal cultural resource) involves the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical would be materially impaired."

a) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

INITIAL STUDY

XIX. UTILITIES AND SERVICE SYSTEMS

Would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
a) Require or result in the relocation or construction of new or expanded water, 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?	■	❒	❒	❒

DISCUSSION

a-e) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	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?	■	❒	❒	❒

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project:	Potentially Significant	Less than Significant with Mitigation Incorporated	Less than Significant	No Impact
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?	■	❒	❒	❒

DISCUSSION

a-d) These standards of significance will be assessed in the EIR.

MITIGATION MEASURES

Any necessary mitigation measures will be included in the EIR.

REPORT PREPARERS

This Initial Study was prepared by the following consultants and individuals:

LEAD AGENCY

City of San Carlos
Akanksha Chopra, Associate Planner

LEAD CONSULTANT

PlaceWorks
Steve Noack, Principal, Principal-in-Charge
Alexis Mena, Associate Principal, Project Manager
Madeline Miller, Project Planner

APPENDIX A2:
SCOPING COMMENTS

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

June 4, 2024

Akanksha Chopra
City of San Carlos
600 Elm Street
San Carlos CA 94070-3085

Re: 2024060037, 2045 General Plan Reset Project, San Mateo County

Dear Ms. Chopra:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. 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.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: [redacted]

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 2, 2024

Akanksha Chopra, Associate Planner
City of San Carlos
600 Elm Street
San Carlos, CA 94070
AdvancePlanning@cityofsancarlos.org

Subject: 2045 General Plan Reset, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2024060037, City of San Carlos, San Mateo County

Dear Akanksha Chopra:

The California Department of Fish and Wildlife (CDFW) has reviewed the City of San Carlos's Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the 2045 General Plan Reset (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect fish and wildlife resources of the State. Please be advised, by law, CDFW may be required to carry out or approve aspects of the Project through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW is providing the City of San Carlos (City) as the Lead Agency, with specific detail about the scope and content of the environmental information related to CDFW's area of statutory responsibility that must be included in the EIR (See: Cal. Code Regs., tit. 14, § 15082, subd. (b).).

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) For purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority over the Project pursuant to the Fish and Game Code. For example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority, if the Project impacts the bed, channel or bank of any river, stream or lake within the State (Fish & G. Code, § 1600 et seq.). Likewise, to the extent the Project may result in "take" as defined by state law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

REGULATORY REQUIREMENTS

California Endangered Species Act

A CESA Incidental Take Permit (ITP) must be obtained from CDFW if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, "take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & G. Code, § 86.) CDFW's issuance of an ITP is subject to CEQA and to facilitate permit issuance, any project modifications and mitigation measures must be incorporated into the CEQA document analysis, discussion, and mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA permit.

CEQA requires a mandatory finding of significance if a project is likely to substantially impact threatened or endangered species. (Pub. Resources Code, §§ 21001, subd. (c) & 21083; CEQA Guidelines, §§ 15380, 15064 & 15065.) In addition, pursuant to CEQA, the Lead Agency cannot approve a project unless all impacts to the environment are avoided or mitigated to less-than-significant levels, or the Lead Agency makes and supports Findings of Overriding Consideration (FOC) for impacts that remain significant despite the implementation of all feasible mitigation. FOC under CEQA, however, do not eliminate the Project proponent's obligation to comply with the Fish and Game Code.

Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting river, lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains is generally subject to notification requirements. In

addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also generally subject to notification requirements. Therefore, any impact to the mainstems, tributaries, or floodplains or associated riparian habitat caused by the proposed Project will likely require an LSA Notification. CDFW may not execute a final LSA Agreement until it has considered the final EIR and complied with its responsibilities as a responsible agency under CEQA.

Migratory Birds and Raptors

CDFW has authority over actions that may result in the disturbance or destruction of active bird nest sites or the unauthorized take of birds. Fish and Game Code sections protecting birds, their eggs, and nests include section 3503 (regarding unlawful take, possession, or needless destruction of the nests or eggs of any bird), section 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and section 3513 (regarding unlawful take of any migratory nongame bird). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

PROJECT DESCRIPTION AND LOCATION SUMMARY

Proponent: 2045 General Plan Reset

Objective: The objective of the Project is to update the City of San Carlos 2030 General Plan. Primary Project activities include amending the City of San Carlos 2030 General Plan to address land use and development objective components related to buildout capacity.

Location: City of San Carlos (Citywide)

Timeframe: 2030-2045

The CEQA Guidelines (§§15124 & 15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the following Project components in the Project description including, but not limited to, the below information.

- Land use changes resulting from, for example, rezoning certain areas.
- Area and plans for any proposed buildings/structures, ground-disturbing activities, fencing, paving, stationary machinery, landscaping, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand any potentially significant impacts on the environment of the proposed Project and any alternatives identified in the draft EIR (CEQA Guidelines, §§15125 & 15360). CDFW recommends the draft EIR provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, and endangered species (CEQA Guidelines, §15380). The draft EIR should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see:https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities), and any stream or wetland set back distances the City may require. Fully protected, threatened or endangered, candidate, and other special-status species or sensitive natural communities that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to the species listed in Attachment A.

Habitat descriptions and species profiles included in the draft EIR should include robust information from multiple sources: aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; Habitat Conservation Plans; U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; California Aquatic Resources Inventory; and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDB). Only with sufficient data and information can the City adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://www.wildlife.ca.gov/Conservation/Survey-Protocol.

Botanical surveys for special-status plant species, including those listed by the California Native Plant Society (http://www.cnps.org/cnps/rareplants/inventory/), should also be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and include the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at: https://www.wildlife.ca.gov/Conservation/Plants.

IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Land use changes that would reduce open space or agricultural land uses and increase residential or other land use involving increased development;
- Potential for impacts to special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alternation of soils and hydrology, and removal of habitat structural features (e.g., snags, roosts, overhanging banks);
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic or human presence;
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features;
- Water quality impacts as a result of the Project;
- Impacts to the bed, channel, and bank, in lakes and streams as a result of the Project; and
- Impacts to bed, channel, bank, and riparian habitat, and the direct and indirect effects to fish, wildlife, and their habitat.

The CEQA document also should identify existing and reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to each impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact (e.g., reduction of available habitat for a listed species) should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

The CEQA Guidelines direct the City, as the Lead Agency, to consider and describe in the draft EIR all feasible mitigation measures to avoid and/or mitigate potentially significant impacts of the Project on the environment based on comprehensive analysis of the potential direct, indirect, and cumulative impacts of the Project. (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.2, 15126.4 & 15370.) This should include a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with USFWS, the National Marine Fisheries Service and CDFW. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels.

Fully protected species such as California black rail (*Laterallus jamaicensis coturniculus*) or salt-marsh harvest mouse (*Reithrodontomys raviventris*) may not be taken or possessed at any time except in limited circumstances (Fish & G. Code, §§ 3511, 4700, 5050, & 5515). Therefore, the draft EIR should include measures to completely avoid take of fully protected species.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to prepare subsequent CEQA documents or to make supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (d) & (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be filled out and submitted online here: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found here: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

CDFW anticipates that the proposed Project, will have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (See: Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP in order to assist the City of San Carlos in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Jason Teichman, Environmental Scientist at [redacted] or [redacted]; or Wesley Stokes, Senior Environmental Scientist, (Supervisory), at [redacted] or [redacted].

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

Attachments: Attachment A: Biological resources, City of San Carlos, California, June 26, 2024.

ec: Office of Planning and Research, State Clearinghouse (SCH No. 2024060037)

Attachment A: Biological Resources, City of San Carlos

Common Name	Scientific Name	Federal Status	State Status	Rare Plant Rank	CDFW Status
Alameda song sparrow	Melospiza melodia pusillula	None	None		SSC
American peregrine falcon	Falco peregrinus anatum	Delisted	Delisted		
arcuate bushmallow	Malacothamnus arcuatus var. arcuatus	None	None	1B.2	
Bay checkerspot butterfly	Euphydryas editha bayensis	Threatened	None		
bent-flowered fiddleneck	Amsinckia lunaris	None	None	1B.2	
California black rail	Laterallus jamaicensis coturniculus	None	Threatened		FP
California least tern	Sternula antillarum browni	Endangered	Endangered		FP
California red-legged frog	Rana draytonii	Threatened	None		SSC
California Ridgway's rail	Rallus obsoletus obsoletus	Endangered	Endangered		FP
chaparral ragwort	Senecio aphanactis	None	None	2B.2	
Choris' popcornflower	Plagiobothrys chorisianus var. chorisianus	None	None	1B.2	
coastal marsh milk-vetch	Astragalus pycnostachyus var. pycnostachyus	None	None	1B.2	
Crystal Springs lessingia	Lessingia arachnoidea	None	None	1B.2	
double-crested cormorant	Nannopterum auritum	None	None		WL
Edgewood blind harvestman	Calicina minor	None	None		
Edgewood Park micro-blind harvestman	Microcina edgewoodensis	None	None		
foothill yellow-legged frog - central coast DPS	Rana boylii pop. 4	Threatened	Endangered		
fountain thistle	Cirsium fontinale var. fontinale	Endangered	Endangered	1B.1	
fragrant fritillary	Fritillaria liliacea	None	None	1B.2	
Franciscan onion	Allium peninsulare var. franciscanum	None	None	1B.2	
great blue heron	Ardea herodias	None	None		
green sturgeon - southern DPS	Acipenser medirostris pop. 1	Threatened	None		SSC
hoary bat	Lasiurus cinereus	None	None		
Kings Mountain manzanita	Arctostaphylos regismontana	None	None	1B.2	
Marin western flax	Hesperolinon congestum	Threatened	Threatened	1B.1	
northern harrier	Circus hudsonius	None	None		SSC
pallid bat	Antrozous pallidus	None	None		SSC
Point Reyes salty bird's-beak	Chloropyron maritimum ssp. palustre	None	None	1B.2	
Ricksecker's water scavenger beetle	Hydrochara ricksecker	None	None		
saline clover	Trifolium hydrophilum	None	None	1B.2	
saltmarsh common yellowthroat	Geothlypis trichas sinuosa	None	None		SSC
salt-marsh harvest mouse	Reithrodontomys raviventris	Endangered	Endangered		FP
salt-marsh wandering shrew	Sorex vagrans halicoetes	None	None		SSC
San Francisco campion	Silene verecunda ssp. verecunda	None	None	1B.2	
San Francisco collinsia	Collinsia multicolor	None	None	1B.2	
San Francisco dusky-footed woodrat	Neotoma fuscipes annectens	None	None		SSC
San Francisco gartersnake	Thamnophis sirtalis tetrataenia	Endangered	Endangered		FP
San Francisco owl's-clover	Triphysaria floribunda	None	None	1B.2	
San Mateo thorn-mint	Acanthomintha duttonii	Endangered	Endangered	1B.1	
Santa Cruz kangaroo rat	Dipodomys venustus venustus	None	None		
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None		
short-eared owl	Asio flammeus	None	None		SSC
western bumble bee	Bombus occidentalis	None	Candidate Endangered		
western leatherwood	Dirca occidentalis	None	None	1B.2	
western pond turtle	Emys marmorata	Proposed Threatened	None		SSC
western snowy plover	Charadrius nivosus nivosus	Threatened	None		SSC
white-rayed pentachaeta	Pentachaeta bellidiflora	Endangered	Endangered	1B.1	
woodland woollythreads	Monolopia gracilens	None	None	1B.2	
yellow rail	Coturnicops noveboracensis	None	None		SSC

Biological resources that may occur in the City of San Carlos, California, California Natural Diversity Database (CNDDB), June 26, 2024

Community Development
Planning Division

1017 Middlefield Road
Redwood City, CA 94063
(650) 780-7301
Fax (650) 780-7225

July 2, 2024

Lisa Porras, Planning Manager
City of San Carlos
600 Elm Street
San Carlos, CA 94070-3085

c/o: Akanksha Chopra, Associate Planner, AdvancePlanning@cityofsancarlos.org

RE: Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the 2045 General Plan Reset [2045 General Plan Reset EIR]

The City of Redwood City appreciates the opportunity to review the Notice of Preparation for the Draft EIR for San Carlos' 2045 General Plan Reset.

Redwood City understands the City of San Carlos no longer uses Level of Service as a CEQA impact and now uses Vehicle Miles Travelled (VMT) as the adopted CEQA metric to analyze transportation impacts. While not required by CEQA, Redwood City would like to know if San Carlos would be undertaking a Local Transportation Analysis (LTA) and if so, what intersections bordering Redwood City/San Carlos would be included in the LTA.

Redwood City is currently in the process of designing a Transportation Management Association (TMA) for Redwood City, one of the goals which is to coordinate Transportation Demand Management (TDM) efforts of individual development projects to reduce VMT in Redwood City. Redwood City wanted to identify our work on the TMA as an opportunity for collaboration and future cross participation between our cities. If you have any questions about Redwood City's TMA efforts, please feel free to contact Christian Hammack, Parking/TDM Manager, Engineering & Transportation Department, at [redacted] or ([redacted].

Thank you again for your continued outreach and coordination with Redwood City. If you have any questions or concerns about these comments, please feel free to contact me at [redacted] or [redacted].

Best,

Melinda Hue

Melinda Hue, Principal Planner - CEQA Coordinator
Redwood City Community Development Department, Planning Division

cc: Jeff Schwob, Community Development Director; Sue Exline, Assistant Community Development Director; Christian Hammack, Parking/TDM Manager; Malahat Owrang, Senior Transportation Planner

California Department of Transportation

DISTRICT 4
OFFICE OF REGIONAL AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

July 3, 2024

SCH #: 2024060037
GTS #: 04-SM-2024-00580
GTS ID: 33077
Co/Rt/Pm: SM/VAR/VAR

Akanksha Chopra, Associate Planner
City of San Carlos
600 Elm Street
San Carlos, CA 94070-3085

Re: 2045 General Plan Reset – Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR)

Dear Akanksha Chopra:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the 2045 General Plan (GP) Reset. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities. The following comments are based on our review of the June 2024 NOP.

Please note this correspondence does not indicate an official position by Caltrans on this project and is for informational purposes only.

Project Understanding

The proposed project is an update to the City of San Carlos' 2030 GP to amend the buildout capacity. Citywide development projections for growth through 2045 include the estimated net addition of 7,300 housing units, 14,000 new residents, 6,570,500 non-residential square footage, and 19,000 jobs. Sections of U.S. Route 101 (U.S. 101) and State Route 82 (SR-82) are within the San Carlos city limits.

Travel Demand Analysis

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Vehicle Miles Traveled (VMT) analysis for land use projects, please review Caltrans' Transportation Impact Study Guide (*link).*

Per the Initial Study, this project may have a potentially significant VMT impact which will be further evaluated in the DEIR. Caltrans looks forward to reviewing the VMT analysis when the DEIR is available.

Multimodal Transportation Planning
Please review and include the reference to the *Caltrans District 4 Pedestrian Plan* (2021) and the *Caltrans District 4 Bike Plan* (2018) in the DEIR. These two plans studied existing conditions for walking and biking along and across the State Transportation Network (STN) in the nine-county Bay Area and developed a list of location-based and prioritized needs.

Please note that any Complete Streets reference should be updated to reflect Caltrans Director's Policy 37 (*link*) that highlights the importance of addressing the needs of non-motorists and prioritizing space-efficient forms of mobility, while also facilitating goods movement in a manner with the least environmental and social impacts. This supersedes Deputy Directive 64-R1, and further builds upon its goals of focusing on the movement of people and goods.

Equity and Public Engagement
We will achieve equity when everyone has access to what they need to thrive no matter their race, socioeconomic status, identity, where they live, or how they travel. Caltrans is committed to advancing equity and livability in all communities. We look forward to collaborating with the City to prioritize projects that are equitable and provide meaningful benefits to historically underserved communities.

Caltrans encourages the City to foster meaningful, equitable and ongoing public engagement in the GP development process to ensure future transportation decisions and investments reflect community interests and values. The public engagement process should include community-sensitive and equity-focused approaches seeking out the needs of individuals from underserved, Tribal, and low-income communities, the elderly, and individuals with disabilities.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Luana Chen, Transportation Planner, via [redacted]. For future early coordination opportunities or project referrals, please contact [redacted].

Sincerely,

YUNSHENG LUO
Branch Chief, Local Development Review
Office of Regional and Community Planning

c: State Clearinghouse

SAN MATEO LAFCo
LOCAL AGENCY FORMATION COMMISSION
455 COUNTY CENTER, 2ND FLOOR • REDWOOD CITY, CA 94063-1663 • PHONE (650) 363-4224 • FAX (650) 363-4849

July 3, 2024

Sent Via Email

City of San Carlos
Attn: Akanksha Chopra, Associate Planner
600 Elm Street
San Carlos, California, 94070

Subject: Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the 2045 General Plan Reset

Dear Ms. Chopra,

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the 2045 General Plan Reset for the City of San Carlos.

The Local Agency Formation Commission (LAFCo) is a state mandated agency established in every county to oversee the boundaries of cities and special districts. San Mateo LAFCo has jurisdiction over the boundaries of the 20 cities, 22 independent special districts, and many of the 33 active county and city governed special districts serving San Mateo County.

The NOP states that the scope of the study area includes land both within the existing City limits as well as lands within the LAFCo designated Sphere of Influence (SOI) of the City. LAFCo support the inclusion of the City's SOI area within the study area.

San Mateo LAFCo has the following comments on the NOP for the proposed 2045 General Plan Reset:

- LAFCo encourages the City to review current City general plan land use designations for lands in the SOI. In the 2009 General Plan, the lands within the City's SOI do not have City land use designations. The City could evaluate potential land use designations for the parcels within the City's SOI along the development potential of the SOI areas as part of the EIR and General Plan reset.

- The NOP notes the Draft Citywide Net New Development Projections for 2024-2045. LAFCo encourages the City to also evaluate the development projections for lands

within the SOI and the potential of annexation of those lands to the City as part of the EIR and General Plan Update.

- Several areas within the City's SOI such as Palomar Park and portions of Devonshire rely on on-site septic systems for wastewater disposal. In the EIR and the General Plan reset, the City should consider evaluating the City's sewer treatment capacity and sewer infrastructure capacity for both future development and the extension of sewer infrastructure to properties within the City's SOI.

San Mateo LAFCo looks forward to reviewing all future documents related to the General Plan reset process and the Draft Environmental Impact Report.

Sincerely,

Rob Bartoli

Rob Bartoli
Executive Officer
[redacted]

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
8800 Cal Center Drive
Sacramento, California 95826-3200

Yana Garcia
Secretary for
Environmental Protection

Gavin Newsom
Governor

SENT VIA ELECTRONIC MAIL

June 20, 2024

Akanksha Chopra
Associate Planner
City of San Carlos
600 Elm Street
San Carlos, CA 94070-3085
AdvancePlanning@cityofsancarlos.org

RE: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE 2045 GENERAL PLAN RESET DATED JUNE 3, 2024 STATE CLEARINGHOUSE NUMBER 2024060037

Dear Akanksha Chopra,

The Department of Toxic Substances Control (DTSC) received a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the 2045 General Plan Reset (project). The proposed project is an update to the City of San Carlos 2030 General Plan to amend the buildout capacity of the City of San Carlos General Plan.

DTSC requests consideration of the following comments:

1. The proposed project encompasses multiple active and nonactive mitigation and clean-up sites where DTSC has conducted oversight that may be impacted as a result of this project. This may restrict what construction activities are permissible in the proposed project areas in order to avoid any impacts to human health and the environment.
2. Due to the broad scope of the project, DTSC is unable to determine the

locations of the proposed sites, whether they are listed as having documented contamination, land use restrictions, or whether there is the potential for the sites to be included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, DTSC recommends providing further information on the proposed project and areas that may fall under DTSC's oversight within future environmental documents. Once received, DTSC may provide additional comments on future environmental documents as further information becomes available. Please review the project area in EnviroStor, DTSC's public-facing database.

DTSC believes the City of San Carlos must address these comments to determine if any significant impacts under the California Environmental Quality Act (CEQA) will occur and, if necessary, avoid significant impacts under CEQA. DTSC recommends the department connect with our unit if any hazardous waste projects managed or overseen by DTSC are discovered.

Please refer to the City of San Carlos EnviroStor Map for additional information about the areas of potential contamination. If further concerns or impacts surface in light of the forthcoming EIR, DTSC reserves the right to provide applicable comments at that time.

DTSC appreciates the opportunity to comment on the NOP of a DEIR for the 2045 General Plan Reset. Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like any clarification on DTSC's comments, please respond to this letter or via [redacted] for additional guidance.

Sincerely,

Dave Kereazis

Dave Kereazis
Associate Environmental Planner
HWMP - Permitting Division – CEQA Unit
Department of Toxic Substances Control
[redacted]

cc: (via email)

Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Tamara Purvis
Associate Environmental Planner
HWMP – Permitting Division - CEQA Unit
Department of Toxic Substances Control
[redacted]

Scott Wiley
Associate Governmental Program Analyst
HWMP – Permitting Division - CEQA Unit
Department of Toxic Substances Control
[redacted]

Lozano Smith
ATTORNEYS AT LAW

Kelly M. Rem
Attorney at Law

E-mail: [redacted]

October 18, 2024

By E-Mail: [redacted]

Madeline Miller
Project Planner
Placeworks

Re: Response of Sequoia Union High School District to Questions Regarding School Facilities Impacts and City of San Carlos to Notice of Preparation for the 2045 General Plan Reset

Dear Ms. Miller:

This office represents Sequoia Union High School District ("District"). Thank you for reaching out and providing the District with the opportunity to provide comments and input regarding the school facilities impacts related to the City of San Carlos to Environmental Impact Report ("EIR") for the 2045 General Plan Reset ("General Plan"). This letter supplements the information the District sent you in its September 27, 2024 e-mail correspondence.

We look forward to working with the City of San Carlos to ensure that the General Plan's anticipated impacts are fully analyzed, understood, and ultimately mitigated. We understand that the General Plan includes an inventory of housing sites with a projected capacity for up to 8,300 new homes. The implementation of the General Plan's programs to facilitate development of housing sites would have an impact on the District's schools, particularly Sequoia High School and Carlmont High School.

Before addressing the specific questions you have raised, we'd like to clarify that there are a wide variety of potential impacts posed by large scale commercial and residential development projects within District boundaries. The questionnaire you have provided seeks information primarily related to the District's current and projected enrollment, capacity, developer fees, and facilities planning.

Generally speaking, there are two different types of development impacts on schools: (1) impacts on the District's budget for the education of students, and (2) impacts related to District school facilities, including indirect impacts such as traffic, safe paths to school, noise, and air pollution.

The first type of impact interferes with the District's need for or ability to obtain revenue received through property taxes that goes toward the overall operation of schools, staff salaries, and into the classroom. These funds are generally not used for facilities.

The second type of impact creates a need for new, expanded, or modernized school facilities in order to maintain safe and acceptable district service and performance objectives. Developers and lead agencies often assume that the only impact development can have on school district facilities is through the introduction of more students. Developers then build on this assumption to conclude that a development's introduction of new students will either create a need for new school facilities (if a district is over capacity), or it will not (if the district is under capacity). In any event, developers typically rely on Government Code section 65996 and Senate Bill 50 ("SB 50"), for the assertion that all demands placed on school district facilities can be mitigated simply by the payment of statutory developer fees.

The above assumptions are both practically and legally incorrect. First, development projects can impose a wide variety of impacts related to school facilities beyond the simple need to acquire more or expand existing facilities to accommodate increased enrollment. For example, new residential and commercial projects often introduce hundreds of new cars into neighborhoods where there are existing schools, or along paths of travel that are frequently used by students and their families to get to school. These increases in traffic pose numerous other impacts on the District and District families, including dangerous traffic conditions caused by an increase in vehicles on roads that are not equipped to handle heavy traffic levels; increased commute times; increased vehicle exhaust and pollution; increased noise from construction; and a reduction in available parking for District staff, students, and families. These impacts, in turn, necessitate that the District take action to continue safely and effectively providing its education program by diverting students from one school to another, acquiring more land to use as parking or other school facilities, and/or modernizing existing facilities or intersections to mitigate the above impacts.

The payment of statutory developer fees is not adequate to resolve all of the above impacts. Many developers and lead agencies assert that if a school district will have enough seats to house additional students generated by development, Government Code section 65996 allows for the conclusion that "payment of the applicable school impact fee is deemed to be full and complete mitigation under CEQA for impacts on school facilities." **This approach is inconsistent with California law, as California courts have acknowledged that developer fees do not constitute full and complete mitigation for school-related impacts other than school overcrowding.** (*Chawanakee Unified Sch. Dist. v. Cty. of Madera* (2011) 196 Cal.App.4th 1016 ("*Chawanakee*").) In other words, California courts have held that developer fees serve as complete mitigation only for certain impacts on school facilities caused by overcrowding. Developer fees do not, however, serve as complete mitigation for all other impacts on school districts or related to school district facilities, including those related to traffic, noise, air quality, and pedestrian safety, which impacts must be analyzed during the CEQA process.

Additionally, from a practical perspective, the amount of developer fees received by school districts typically fall woefully short of alleviating the wide variety of impacts caused by development. This is due largely to the facts that: (1) statutory developer fee amounts fail to acknowledge the differences in costs of school construction from one district to another, which

particularly burdens school districts in the Bay Area, where both land and construction costs exceed other parts of the state; (2) the developer fee amounts fail to contemplate the special facilities needs of those districts experiencing rapid growth, such as the need for portables; and (3) the adjustment formula for developer fees is based on a "construction cost index" and does not include indexing related to the increases in land costs, resulting in the actual costs of facilities (i.e., land and improvements) increasing at a greater rate than the adjustment.

The inadequacy of developer fees as a source of funding for school facilities has forced school districts to rely increasingly on other sources of funding, primarily including local bond funds and State bond funds administered under the School Facilities Program (SFP). However, these sources of funds can be equally unreliable. Local bond funds are difficult to generate, as local bonds are subject to school district bonding capacity limitations and voter approval. State funds are also unreliable and take considerable time to obtain. Either way, the funding formula was never intended to require the State and local taxpayers to shoulder a disproportionate share of the cost of school facilities.

In sum, the interplay between new development and the wide variety of resulting impacts on schools presents unique and complex issues, all of which must be analyzed through the CEQA process. Impacts that do not initially present as "fiscal impacts" to the District, like traffic impacts that affect a student population, often end up having significant fiscal impacts on the District. Many of these impacts can be reduced or even avoided by ensuring that the developers work with the District in order to ensure the availability of facilities or other appropriate mitigation in the Project area in a timely fashion.

Within the context of this information, below you will find the District's responses to your inquiries:

1. *Please confirm that the Existing Conditions information below is accurate, or update as needed.*

Most of the students within San Carlos would attend Carlmont High, with some of the students attending Sequoia High. It is confirmed that total enrollment is 9,741 students.

2. *Does the school district identify Developer Impact Fees for new development? If so, please describe the fees.*

The District's September 27, 2024, response should be corrected to accurately reflect the developer fees the District imposes. The District is subject to a fee-sharing agreement with its feeder elementary school districts that only authorizes the District to levy forty percent (40%) of the total fees authorized by Government Code section 65995, subdivision (b)(3), for development in areas which the District provides school services. The remaining permitted fees are allocated to feeder elementary school district(s) within whose boundaries the residential, commercial, or industrial development will occur.

Based on the fee-sharing agreement, the District currently imposes statutory "Level 1" developer fees in the amount of **$2.07 per square foot for residential development** (40% of $5.17 per

square foot) and **$0.34 per square foot of commercial or industrial development** (40% of $0.84 per square foot).

3. What is the capacity of the schools serving San Carlos? Does the School District currently exceed its student capacity and, if so, by how much?

The capacity of Carlmont High School is 2,343. Its current enrollment is 2,360 students, so it is currently exceeding its capacity by seventeen (17) students. Therefore, the District's prior response indicating that it does not exceed its student capacity should be corrected to reflect that ***Carlmont High currently exceeds its capacity.***

The capacity of Sequoia High School is 2,515. Its current enrollment is 1,903. Although there is some capacity at Sequoia High School that could be used to house students generated by new development in San Carlos, as mentioned, the majority of students in San Carlos would likely attend or wish to attend Carlmont High. Adding students to Sequoia High would not be a long-term solution and would result in negative impacts, such as increased traffic (see discussion above). Further, Sequoia High will be needed to house students resulting from development in Redwood City.

4. What are the student enrollment projections for SUHSD? Does the School District anticipate that enrollment will exceed capacity at any of its schools?

Enrollment projections are uncertain, as enrollment depends on a variety of factors, both known and unknown. Addition of 8,300 new homes to San Carlos, as anticipated in the General Plan, will undoubtedly have an impact on District enrollment.

As stated above, Carlmont High is already exceeding its capacity. The General Plan's projected level of development may exacerbate this issue.

5. What are the student generation rates the District uses to determine enrollment projections?

As stated above, enrollment projections are uncertain. However, the Residential Development Research Report prepared by PowerSchool for Fall 2024, dated September 15, 2023, identified student generation rates of .14 for single family detached units, .09 for single family attached units, and .10 for multi-family units. A copy of the report is enclosed with this letter.

We note that the PowerSchool report was submitted on September 23, 2023, when anticipated potential development was 3,805 residential units in the *entire* District over the next ten (10) years. Given that the General Plan is anticipating 8,300 homes in San Carlos *alone* over the next twenty (20) years, the District may need to reevaluate projections based on the aggressive growth that the City of San Carlos now anticipates.

6. *Are there any plans for new or expanded school facilities? If so, where, to what extent, and when are the expanded or new facilities expected to commence?*

The District's 2023 Facilities Master Plan identifies plans for a new T-Wing, Terrace Building, and Administrative/Student Support Building at Carlmont High, as well as renovation, modernization, and other site projects for that site. For Sequoia High, the Master Plan anticipates a new classroom building and modernization of existing buildings. (See: https://www.seq.org/DEPARTMENTS/Administrative-Services/Construction/Facilities-Master-Plan/index.html.) Construction is still in the planning stage.

In order to accommodate students generated by 8,300 new homes, it is likely that the District will be required to construct new facilities or expand existing facilities, and also to modernize existing facilities to maintain the existing level of service.

7. *Please provide any current documents on school services including background reports, policy documents, and facility plans that you think would help with preparing the environmental review analysis for impacts to school facilities as a result of the proposed 2045 General Plan Reset.*

In addition to the link to the Board Agenda on item for March 6, 2024, that was previously provided, the following documents are identified:

- Facilities Master Plan, Sequoia Union High School District (updated September 18, 2023), available at: https://drive.google.com/file/d/14TDfrmql5JL_hyY5rvijXM0bR7_9yC6A/view

- Sequoia Union High School District, Resolution No. 011, Increase in School Facilities Fees and Adoption of CEQA Notice of Exemption, available at: https://www.seq.org/documents/Departments/Admin%20Services/Maintenance%20and%20Operations/Resolutions%20and%20Justification%20Reports/RESOLUTION-No.-011-INCREASE-IN-SCHOOL-FACILITIES-FEES-AND-ADOPTION-OF-CEQA-NOTICE-OF-EXEMPTION-3-6-24.pdf

- Level I Developer Fee Study for Sequoia Union High School District, prepared by Jack Schreder & Associates on January 29, 2024, available at: https://www.seq.org/documents/Departments/Admin%20Services/Maintenance%20and%20Operations/Resolutions%20and%20Justification%20Reports/Developer-Fee-Justification-Study-March-2024.pdf

- Residential Development Research Report prepared by PowerSchool for Fall 2024, dated September 15, 2023 (enclosed)

Thank you for your consideration of the District's concerns. While we appreciate your effort to collect information from the District, the issues you are investigating are complex. Rather than exchanging emails and answering lists of questions, we suggest that it would be far more beneficial if we could have a meeting with the City of San Carlos, developers, and their respective consultants to speak about these issues and develop a fuller understanding of the District's needs and the effects of the General Plan. We would be happy to coordinate such a meeting.

Sincerely,

LOZANO SMITH

Kelly M. Rem

Kelly M. Rem

KMR/KRB/mag

cc: Alexis Mena ([redacted])
Akanksha Chopra ([redacted])
Lisa Porras ([redacted])
Crystal Leach, Superintendent ([redacted])
Christine Gong, Assistant Superintendent, Admin. Services/CBO ([redacted])

Enclosure: Residential Development Research Report

RESIDENTIAL DEVELOPMENT RESEARCH REPORT

FALL 2024

PREPARED FOR:
SEQUOIA UNION HIGH SCHOOL DISTRICT

PREPARED BY:

PowerSchool

SUBMITTED: SEPTEMBER 15, 2023

TABLE OF CONTENTS

Sequoia Union High School District

Executive Summary

New Residential Development – Fall 2024

Predictive Enrollment Analytics is pleased to present this report of findings to the Sequoia Union High School District. Based on information collected from the local planning department(s) and developer(s) as of Sep-23, it is anticipated that the district could potentially experience the construction and occupation of 3,805 new dwelling units over the next 10 years. This total unit count includes 103 Single Family Detached units, 421 Single Family Attached units, and 3,281 Multifamily units.

Student Generation Rate Assumptions

The student generation rates applied to these projections are our default rates, which have been prepared based on a comprehensive review of recently-constructed dwelling units with similar characteristics. The total across all grade ranges for the district (9-12), is 0.14 for Single Family Detached units, 0.09 for Single Family Attached units, and 0.10 for Multifamily units.

Anticipated Impact of New Residential Development

Both a Moderate and Conservative Dwelling Unit ("DU") Scenario have been generated for the district. The 10-year projection of 9-12 students generated by proposed new residential development for the Moderate and Conservative DU Scenarios are shown in the tables below. The "Annual" row projects the number of students new to the district from these units, in a given year. The "Aggregate" row reflects both new students in a given year plus the matriculation of previous years' students from one grade to the next (this number removes students who will have matriculated out of the district).

Students Generated by Residential Development (Moderate DU Scenario)										
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Aggregate		142	234	272	312	336	351	346	343	349
Annual	55	93	116	87	110	101	104	85	89	90

Students Generated by Residential Development (Conservative DU Scenario)										
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Aggregate		122	202	251	297	326	340	348	346	349
Annual	45	82	100	92	107	102	99	96	88	90

More Information

A richer and more comprehensive review is contained in the Residential Development Research Report accompanying this Executive Summary. A wealth of more detailed information and analysis is also quickly and easily accessible online.

Respectfully Prepared and Submitted by:

The **Predictive Enrollment Analytics** Team

September 15, 2023

SEQUOIA UNION HIGH SCHOOL DISTRICT

RESIDENTIAL DEVELOPMENT RESEARCH METHODOLOGY AND DATA

RESEARCH METHODOLOGY

The residential research team works with the school district's local planning department(s) to compile a list of all active residential development projects within the district. When putting together this list of projects, we include only active, non-senior residential projects larger than 10 units. We believe this to be the most efficient way to build a picture of the district's future residential changes, since smaller projects would generally have a negligible impact on the district. These active projects would include developments either currently under construction, those with active entitlements, or any proposed future projects.

We then follow up with developers to gather as much information as possible on the project's unit type(s), planned build-out unit counts, construction schedules, etc. From these data, we create two scenarios. The Moderate DU Scenario is directly based on information provided by the planning departments and developers regarding anticipated construction schedules and unit occupancies. The Conservative DU Scenario is derived from the Moderate's by assuming occupancies will occur over a longer period. Because of this, the unit totals in the Conservative DU Scenario may be less than those of the Moderate DU Scenario if they are pushed out beyond the next 10 years. Similarly, because of these adjustments, in any given year it may also be possible for the annual number totals of the Conservative DU Scenario to exceed those of the Moderate DU Scenario.

DWELLING UNIT TYPES

New dwelling units are categorized into the following three (3) housing types:

- **Single Family Detached ("SFD")** – Units are stand-alone structures on their own lot with a unique Assessor's parcel number.
- **Single Family Attached ("SFA")** – Units share common walls, usually on both sides of the property, where each is assigned a unique Assessor's parcel number (e.g., townhomes, condominiums, duplexes).
- **Multifamily ("MF")** – Units share common walls in a building or structure designed to house several families in separate housing units. All units are on the same lot with one Assessor's parcel number (e.g., apartments).

Active Residential Development Projects within the District

Based on information collected from the local planning department(s) and developer(s) as of Sep-23, it is anticipated that the district could potentially experience the construction and occupation of 3,805 new dwelling units over the next 10 years. The total unit count included in the Moderate DU Scenario is broken out as shown in the table below.

New Dwelling Units by Unit Type	
Unit Type	# of Units
Single Family Detached	103
Single Family Attached	421
Multifamily	3,281
Totals:	3,805

FIGURE 1

The two tables below provide the project name, unit type, and anticipated occupancy data for all active, non-senior residential development projects greater than 10 units planned to be occupied over the next 10 years.

This table shows the Moderate DU Scenario which is directly based on information provided by the planning departments and developers regarding anticipated construction schedules and unit occupancies.

Proposed Dwelling Units within the Sequoia Union High School District (Moderate DU Scenario)												
Project Name	Unit Type	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
11 El Camino Rea	MF	0	109	133	0	0	0	0	0	0	0	242
111 Independence Dr.	MF	0	0	50	55	0	0	0	0	0	0	105
1383 Laurel Street	MF	0	15	0	0	0	0	0	0	0	0	15
201 El Camino Real	MF	0	0	12	0	0	0	0	0	0	0	12
560 El Camino Real	MF	0	24	0	0	0	0	0	0	0	0	24
60 Vista Del Grande	SFA	0	0	89	0	0	0	0	0	0	0	89
808 Alameda de Las Pulgas	SFD	0	87	0	0	0	0	0	0	0	0	87
847 Woodside	MF	0	0	0	0	22	22	0	0	0	0	44
Broadway Plaza	MF	0	260	260	0	0	0	0	0	0	0	520
Charter Street	MF	0	36	36	0	0	0	0	0	0	0	72
Laurel Way Subdivision	SFD	0	0	0	16	0	0	0	0	0	0	16
Menlo Flats	MF	0	0	0	0	50	50	50	0	0	0	150
Menlo Portal	MF	75	75	75	35	0	0	0	0	0	0	260
Menlo Uptown	SFA	14	14	0	0	0	0	0	0	0	0	28
Menlo Uptown	MF	221	0	0	0	0	0	0	0	0	0	221
MidPen	MF	90	0	0	0	0	0	0	0	0	0	90
Parkline	SFA	0	0	0	0	50	50	0	0	0	0	100
Parkline	MF	0	0	0	0	100	100	100	0	0	0	300
Sobrato	SFA	0	0	0	0	60	56	0	0	0	0	116
Sobrato	MF	0	0	0	0	100	100	116	0	0	0	316
South Main Mixed-Use	MF	110	110	110	100	0	0	0	0	0	0	430
Strada	SFA	43	45	0	0	0	0	0	0	0	0	88
Syufy Site	MF	0	0	160	160	160	0	0	0	0	0	480
	Totals:	553	775	925	366	542	378	266	0	0	0	3805

FIGURE 2

This table shows the Conservative DU Scenario which is derived from the Moderate's by assuming occupancies will occur over a longer period.

Proposed Dwelling Units within the Sequoia Union High School District (Conservative DU Scenario)												
Project Name	Unit Type	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
11 El Camino Rea	MF	0	99	113	30	0	0	0	0	0	0	242
111 Independence Dr.	MF	0	0	40	44	21	0	0	0	0	0	105
1383 Laurel Street	MF	0	12	3	0	0	0	0	0	0	0	15
201 El Camino Real	MF	0	0	10	2	0	0	0	0	0	0	12
560 El Camino Real	MF	0	20	4	0	0	0	0	0	0	0	24
60 Vista Del Grande	SFA	0	0	79	10	0	0	0	0	0	0	89
808 Alameda de Las Pulgas	SFD	0	77	10	0	0	0	0	0	0	0	87
847 Woodside	MF	0	0	0	0	18	18	8	0	0	0	44
Broadway Plaza	MF	0	208	208	104	0	0	0	0	0	0	520
Charter Street	MF	0	29	29	14	0	0	0	0	0	0	72
Laurel Way Subdivision	SFD	0	0	0	13	3	0	0	0	0	0	16
Menlo Flats	MF	0	0	0	0	40	40	40	30	0	0	150
Menlo Portal	MF	60	60	60	60	20	0	0	0	0	0	260
Menlo Uptown	SFA	11	11	6	0	0	0	0	0	0	0	28
Menlo Uptown	MF	177	44	0	0	0	0	0	0	0	0	221
MidPen	MF	80	10	0	0	0	0	0	0	0	0	90
Parkline	SFA	0	0	0	0	40	40	20	0	0	0	100
Parkline	MF	0	0	0	0	80	80	80	60	0	0	300
Sobrato	SFA	0	0	0	0	48	48	20	0	0	0	116
Sobrato	MF	0	0	0	0	80	80	93	63	0	0	316
South Main Mixed-Use	MF	88	88	88	88	78	0	0	0	0	0	430
Strada	SFA	34	36	18	0	0	0	0	0	0	0	88
Syufy Site	MF	0	0	128	128	128	96	0	0	0	0	480
	Totals:	450	694	796	493	556	402	261	153	0	0	3805

FIGURE 3

The graph below shows the anticipated occupancy data accumulated by year for all active, non-senior residential development projects greater than 10 units planned to be occupied over the next 10 years.

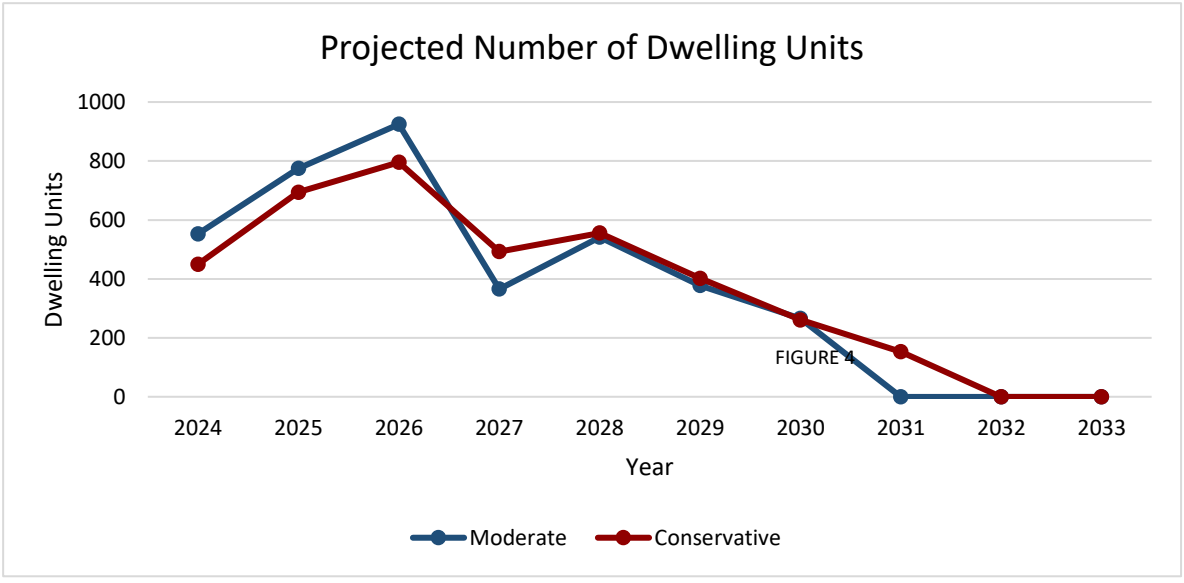


FIGURE 4

The locations of each of these future residential development projects is shown in the map below. Please note that the exact location of these new development projects may be refined as additional information is made available.

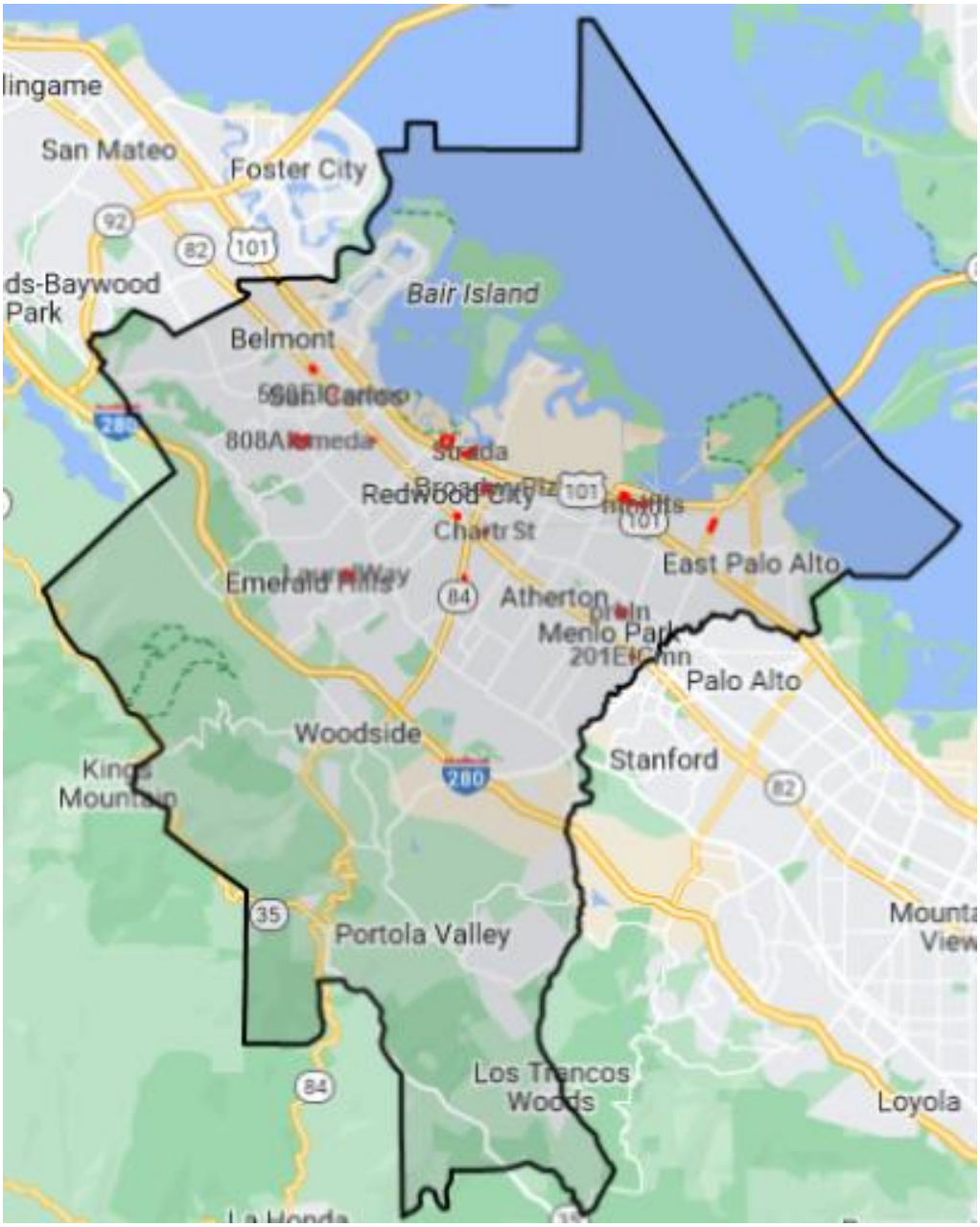


FIGURE 5

Student Generation Rate Assumptions

Student generation rates are determined for each dwelling unit type for each school level (elementary, middle, and high where applicable). The student generation rates applied to these projections are our default rates, which have been prepared based on a comprehensive review of recently-constructed dwelling units with similar characteristics. The table below shows the student generation rate assumptions by unit type. Although these student generation rates are broken out by a 9-12 grade configuration, the calculated student impact from new development within the enrollment projection studies will be aligned with each school's defined grade configurations.

Student Generation Rates by Unit Type & School Level			
School Level	SFD Units	SFA Units	MF Units
High School (9-12)	0.14	0.09	0.10
Totals:	0.14	0.09	0.10

FIGURE 6

Typically, the Conservative rates are calculated as a slight adjustment down from the Moderate rates to anticipate a diminution in family size over an extended period. A full list of the student generation rates applied over the next 10 years within the Moderate and Conservative DU Scenarios is shown in Appendix A.

Projected Students from New Residential Development

To calculate the projected student enrollment from the new residential development planned within the district, the number of each unit type was multiplied by the appropriate student generation rates for each of the next 10 years. The geographical location of each project is utilized to calculate the student impact by studyblock, which ultimately determines which schools we would anticipate being impacted. For each school level, students generated by new residential development are distributed across grade levels. These percentages are based on historical patterns where they exist; otherwise, default percentages are used. Furthermore, student matriculation is considered to accurately model the student impact over the enrollment projections studies' 10-year timeframe. The results of these operations for the Moderate and Conservative DU Scenarios are shown in the tables below.

Projected Students from New Residential Development (Moderate DU Scenario)										
Grade	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
9	16	37	58	61	73	76	85	85	89	90
10	16	41	62	69	77	84	84	85	85	89
11	16	41	66	73	85	88	92	84	85	85
12	5	24	49	69	78	89	91	92	84	85
High:	55	142	234	272	312	336	351	346	343	349
Total:	55	142	234	272	312	336	351	346	343	349

FIGURE 7

Projected Students from New Residential Development (Conservative DU Scenario)										
Grade	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
9	13	32	50	58	69	74	81	86	88	90
10	13	35	53	64	74	81	82	86	86	88
11	13	35	57	68	81	86	88	87	86	86
12	4	21	42	61	73	85	89	90	87	86
High:	45	122	202	251	297	326	340	348	346	349
Total:	45	122	202	251	297	326	340	348	346	349

FIGURE 8

The graph below shows the projected student enrollment from the new residential development within the Moderate and Conservative DU Scenarios. More detailed information on the projected numbers of students generated by project and by studyblock can be accessed online.

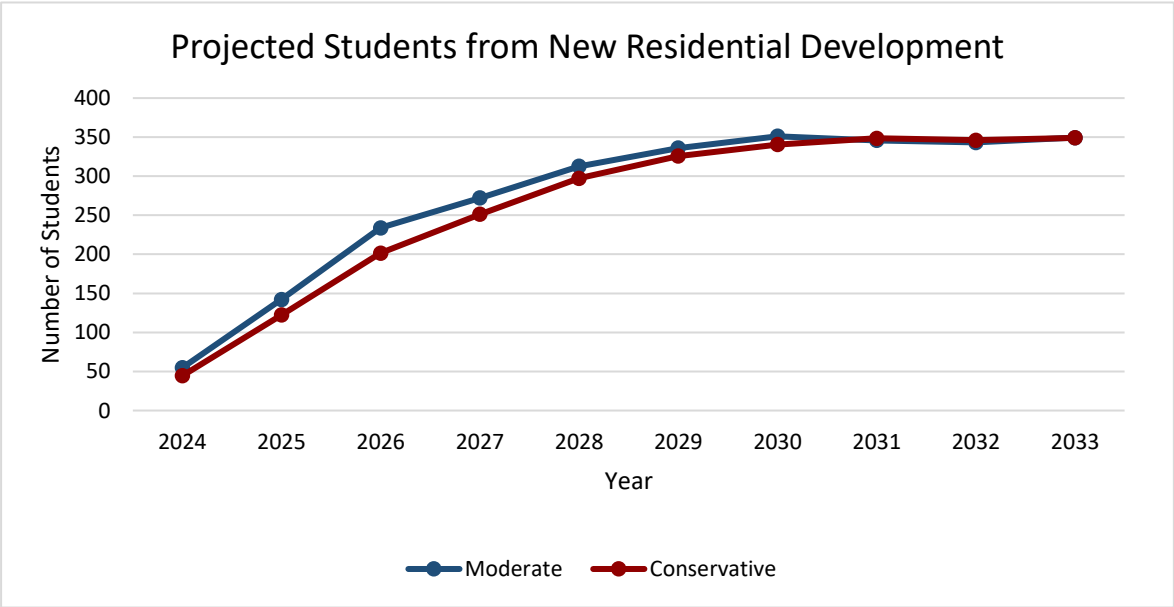


FIGURE 9

Analyzing/Studying/Reviewing the Residential Development Research Report

The projections of district and school enrollment are based on a complex mix of historical data, recent trends, and specific assumptions regarding the future, including new residential development as outlined in this report. At Predictive Enrollment Analytics, we strongly encourage our clients to actively engage with the data with the aim of better understanding, further refining, and using the results to inform decisions about to be made. We believe increased effectiveness for both the district and Predictive Enrollment Analytics comes with increased and welcome dialogue.

Graphs or tables may be copied from the PDF version of this document using the Snapshot Tool inside PDF Reader.

Please do not hesitate to contact Predictive Enrollment Analytics regarding any questions or suggestions that may arise regarding this report.

Respectfully Prepared and Submitted by:

The **Predictive Enrollment Analytics** Team

September 15, 2023

APPENDIX A

STUDENT GENERATION RATE ASSUMPTIONS

Student Generation Rates (Moderate DU Scenario)											
Unit Type	School Level	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
SFD	Elementary	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
SFD	Middle	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SFD	High	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
SFA	Elementary	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
SFA	Middle	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SFA	High	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
MF	Elementary	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
MF	Middle	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MF	High	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Student Generation Rates (Conservative DU Scenario)											
Unit Type	School Level	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
SFD	Elementary	0.33	0.33	0.33	0.32	0.32	0.32	0.32	0.32	0.32	0.31
SFD	Middle	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SFD	High	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.13
SFA	Elementary	0.23	0.23	0.23	0.23	0.23	0.22	0.22	0.22	0.22	0.22
SFA	Middle	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
SFA	High	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
MF	Elementary	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.14	0.14	0.14
MF	Middle	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
MF	High	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

a. Approval of the June 17, 2024 Planning and Transportation Commission Meeting Minutes

San Carlos City Planning and Transportation Commission
Regular Meeting
Council Chambers, City Hall
600 Elm Street, San Carlos, CA 94070
June 17, 2024 7:00 PM

MINUTES

1. CALL TO ORDER – Call to order at 7:00 pm

2. ASSEMBLY BILL 2449 TELECONFERENCE REQUESTS - None

3. PLEDGE OF ALLEGIANCE

4. ROLL CALL

Commissioners Present:
Ellen Garvey (Acting Chair)
Janet Castaneda
David Roof

Commissioners Absent
Jim Iacoponi, Chair
Kristen Clements, Vice Chair

Staff Present:
Andrea Mardesich, Assistant Community Development Director
Lisa Porras, Planning Manager
Rucha Dande, Principal Planner
Akanksha Chopra, Associate Planner
Lisa Costa Sanders, Consultant Principal Planner
Greg Rubens, City Attorney

5. APPROVAL OF MINUTES

a Approval of the June 3, 2024 Planning and Transportation Commission (PTC) Meeting Minutes.

MOTION:	Approve the Minutes from the Planning and Transportation Commission Meeting of June 3, 2024.
MOVER:	Ellen Garvey
SECONDER:	Janet Castaneda
AYES:	Roof, Garvey, Castaneda
NAYS:	None
ABSENT:	Kristen Clement, Jim Iacoponi
RESULT:	Motion Passed 3 – 0 – 2

6. PUBLIC HEARING

a. 642 Quarry Road (APN:046-041-038) – Public Hearing to Consider approving the Design Review Modification, to modify the design of an approved but not yet built life science research and development buildings.

Lisa Costa Sanders, Consultant Principal Planner and Applicant Rex Crabb from OTJ Architects presented the item.

Commissioners asked clarifying questions.

City staff and Consultant Team addressed the Commission's inquiries.

Public Comment

Nels Delander (in-person), representative of Carpenters Local 217, emphasized that workers on this project should receive fair wages, proper training through apprenticeships, and healthcare benefits.

Debbie Baldocchi (via Zoom), a San Carlos resident, sought the Commissioners' perspectives on the parking lot structure before and after the proposed design changes.

MOTION:	Close Public Comment
MOVER:	Janet Castaneda
SECONDER:	David Roof
AYES:	Roof, Castaneda, Garvey
NAYS:	None
ABSENT:	Kristen Clements, Jim Iacoponi
RESULT:	Motion Passed 3 – 0 – 2

Commission Comment

Commissioner Garvey invited the applicant to respond to the caller's question regarding the art wall on parking lot structure.

The Commission was supportive of the design changes and liked the simplified design and planter boxes.

MOTION:	Approve the request for Design Review Modification, for the construction of construction of two research and development life science buildings, one 215,022 square feet and one 192,650 square feet, (both buildings with six floors), and one parking garage with nine floors above grade and one subsurface level at 642 Quarry Road based on the findings and for the reasons incorporated in the staff report and subsequent attachments.
MOVER:	David Roof
SECONDER:	Janet Castaneda
AYES:	Roof, Castaneda, Garvey
NAYS:	None
ABSENT:	Kristen Clement, Jim Iacoponi
RESULT:	Motion Passed 3 – 0 – 2

Commissioner Garvey stated that The Planning and Transportation Commission's action will be final unless appealed to the City Council within 10 days of the date of action. The deadline to file an appeal is 5:00 p.m. on Thursday, June 27, 2024.

b. Scoping Meeting for the 2045 General Plan Reset Environmental Impact Report (EIR).

Akanksha Chopra, Associate Planner and Terri McCracken, Consultant Associate Principal from PlaceWorks presented the item.

Public Comment

Debbie Baldocchi (via Zoom) expressed her concerns about the numerous life science developments and requested that the EIR address hazardous materials, including biohazards, water quality and soil. She emphasized the need for the City to consider the energy and water usage and the risks associated with the concentrated use of biosafety labs.

MOTION:	Close Public Comment
MOVER:	Ellen Garvey
SECONDER:	Janet Castaneda
AYES:	Roof, Castaneda, Garvey
NAYS:	None
ABSENT:	Kristen Clements, Jim Iacoponi
RESULT:	Motion Passed 3 – 0 – 2

Greg Rubens clarified that the public comment period was for the evening only. He stated that there is still the public comment period for the scoping of the EIR and the public still has the opportunity to communicate with staff and provide input.

Commissioners asked clarifying questions.

Commissioner Garvey requested that the EIR thoroughly evaluate developments near creeks, especially in the Northeast area.

Commissioner Roof emphasized the need for review of wildfire related impacts with respect to potential congestion and evacuation from potential new development in San Carlos.

City staff and consultant addressed the Commission's inquiries.

7. NEW BUSINESS

a. Consider Authorizing a Planning and Transportation Commission Summer Recess and Cancellation of the July 1, 2024 and July 15, 2024 Regular Meetings.

Public Comment

Debbie Baldocchi (via Zoom) thanked the Commission for their hard work throughout the year and supported the motion.

MOTION:	Approve a summer recess and authorizes cancellation of the July 1, 2024 and July 15, 2024 Regular Meetings.
MOVER:	Janet Castaneda
SECONDER:	Ellen Garvey
AYES:	Roof, Castaneda, Garvey
NAYS:	None
ABSENT:	Kristen Clements, Jim Iacoponi
RESULT:	Motion Passed 3 – 0 – 2

8. STUDY SESSION

a. Study Session on Objective Design Standards for Multifamily (RM) and Mixed use (MU) Development Types.

Rucha Dande, Principal Planner and Rick Williams, Consultant Principal Architect and Urban Designer from Van Meter Williams Pollack presented the item.

Public Comment

Debbie Baldocchi (via Zoom) commented that the Multi-family Objective Design Standards process seems to be undoing the height restrictions, setbacks, and step backs established for single-family homes in the Housing Element. She urged City Staff to be meticulous when making required findings, particularly concerning sites with pre-existing restrictions, such as 1785 San Carlos Avenue due to its proximity to the creek.

Debbie Baldocchi also mentioned that the Greater East Side San Carlos neighborhood spoke in great numbers about step backs and setbacks for multifamily buildings facing their single-family homes. She asked if all their input would be disregarded and replaced by new standards that are less favorable to single-family homeowners.

Lisa Porras, Planning Manager addressed the public comment on the Housing Element.

Rick Williams followed up on the public comment

Commission Comment

Commissioners asked clarifying questions.

Commissioner Roof emphasized the need for proposed changes and implications to be openly discussed with the public.

Commissioner Garvey echoed Commissioner Roof's comment, stating the importance of making information available to the community for review and comment. She emphasized the need to invite the community to stay engaged with the subject through various outreach tools.

Commissioner Castaneda mentioned that while the market suggests a demand for larger units, there is also a trend in many areas towards smaller units. She urged City Staff to keep this in mind.

City staff and consultant addressed the Commission's inquiries.

9. REPORTS, CORRESPONDENCE AND GENERAL INFORMATION

a. Report on Recent City Council Actions

Andrea Mardesich, Assistant Community Development Director shared that the City Council provided feedback to staff on the Downtown Streetscape Plan and authorized to move forward with some technical studies. She also shared that the Council approved the mid-year budget.

b. Planning and Transportation Commission comments or reports

Commissioner Garvey noted that the evening was Commissioner Roof's last meeting and thanked him for his service.

c. Correspondence - None

d. Planning Staff comments, reports, and updates on current projects

Andrea Mardesich provided the following updates.

- There will be no meetings in July.
- Staff is determining if there is a quorum for the August 5, Planning and Transportation Commission (PTC) meeting.
- Thanked Commissioner Roof for his 6 years of service in PTC and Residential Design Review Committee.

10. PUBLIC COMMENTS

Debbie Baldocchi (via Zoom) thanked Commissioner Roof for representing the community.

11. ADJOURNMENT – The meeting was adjourned at 9:31 pm

Andrea Mardesich, Assistant
Community Development Director

APPENDIX B:
AIR QUALITY AND GREENHOUSE GAS EMISSIONS DATA

Land Use Statistics - City of San Carlos

	Existing Conditions	Buildout Estimates	Projected Growth (Proposed Project)	Growth Factor from Existing to Horizon Year	Annual Growth Rate 2024-2045
	2024	2045	2024-2045	2045	Percent (%)
City + Sphere of Influence (SOI)					
Housing Units	13,250	21,560	8,310	63%	0.023
Population	30,830	46,450	15,620	51%	0.020
Employment	20,780	47,320	26,540	128%	0.040
Service Population	51,610	93,770	42,160	82%	0.029
City					
Housing Units	12,460	20,770	8,310	67%	0.025
Population	28,890	44,510	15,620	54%	0.021
Employment	20,410	46,950	26,540	130%	0.040
Service Population	49,300	91,460	42,160	86%	0.030
Sphere of Influence (SOI)					
Housing Units	790	790	0	0%	0.000
Population	1,940	1,940	0	0%	0.000
Employment	370	370	0	0%	0.000
Service Population	2,310	2,310	0	0%	0.000

City of San Carlos Community Criteria Air Pollutant Emissions Inventory and Forecast: City + SOI

Notes:

[1] Source: Kittelson and Associates, Inc. 2024; EMFAC2021 Version 1.0.2 Emissions Database (Region - San Mateo County)

[2] Sources: PG&E and PCE 2024 and CalEEMod User's Guide for natural gas criteria air pollutant emission rates. Excludes criteria air pollutant emissions natural gas use from Permitted Sources within the City.

[3] Source: OFFROAD 2021.

[4] Source: CalEEMod User's Guide

City + SOI

EXISTING (2024)

Phase	Existing Criteria Air Pollutant Emissions (lbs/day)				Existing Criteria Air Pollutant Emissions (tons/year)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	26	168	37	14	5	29	6	2
Energy[2]	11	211	16	16	2	39	3	3
Offroad Equipment[3]	144	89	4	3	26	16	1	1
Consumer Products[4]	586				107			
Total	**767**	**469**	**57**	**32**	**140**	**84**	**10**	**6**

EXISTING (2045 No Project Baseline)

Phase	Existing Criteria Air Pollutant Emissions (lbs/day)				Existing Criteria Air Pollutant Emissions (tons/year)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	19	89	50	17	3	15	9	3
Energy[2]	19	363	27	27	4	66	5	5
Offroad Equipment[3]	295	198	6	4	54	36	1	1
Consumer Products[4]	1,022				187			
Total	**1,355**	**650**	**84**	**48**	**247**	**118**	**15**	**9**

Year 2045 (Proposed Project)

Phase	Project (2045) Criteria Air Pollutant Emissions (lbs/day)				Project (2045) Criteria Air Pollutant Emissions (tons/year)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	23	109	62	21	4	19	11	4
Energy[2]	19	363	27	27	4	66	5	5
Offroad Equipment[3]	295	198	6	4	54	36	1	1
Consumer Products[4]	1,022				187			
Total	**1,359**	**670**	**95**	**52**	**248**	**121**	**17**	**9**

NET CHANGE (from 2045 No Project Baseline)

Phase	Net Change (2045-2024) Criteria Air Pollutant Emissions (lbs/day)				Net Change (2045-2024) Criteria Air Pollutant Emissions (tons/year)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	4	20	11	4	1	4	2	1
Energy[2]	0	0	0	0	0	0	0	0
Offroad Equipment[3]	0	0	0	0	0	0	0	0
Consumer Products[4]	0	0	0	0	0	0	0	0
Total	**4**	**20**	**11**	**4**	**1**	**4**	**2**	**1**
BAAQMD Threshold	**54**	**54**	**82**	**54**	**10**	**10**	**15**	**10**
Exceeds Threshold	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

NET CHANGE (from Existing) - Friant Ranch

Phase	Net Change (2045-2024) Criteria Air Pollutant Emissions (lbs/day)				Net Change (2045-2024) Criteria Air Pollutant Emissions (tons/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	-3	-59	24	7	-1	-10	4	1
Energy[2]	8	151	11	11	1	28	2	2
Offroad Equipment[3]	151	109	2	1	28	20	0	0
Consumer Products[4]	437				80			
Total	**593**	**202**	**38**	**19**	**108**	**37**	**7**	**3**
BAAQMD Threshold	**54**	**54**	**82**	**54**	**10**	**10**	**15**	**10**
Exceeds Threshold	**Yes**	**Yes**	**No**	**No**	**Yes**	**Yes**	**No**	**No**

AQMP Consistency Analysis

Comparison of the Change in Population and VMT in San Carlos (O-D Method)

Category	Existing	GP 2045 Update (Proposed Project)	Change from Existing	
			Change	Percent
Population	30,830	46,450	15,620	50.7%
Employment	20,780	47,320	26,540	127.7%
SP	51,610	93,770	42,160	81.7%
VMT per Day	773,123	1,335,160	562,037	72.7%
VMT/SP	14.98	14.24	-0.74	-4.9%

Note Origin-Destination (O-D) Methodology is not necessarily the same methodology for SB 743.

Modeling of vehicle miles traveled (VMT) is provided by Kittelson and Associates, Inc. 2024. VMT from passenger vehicles and trucks that have an origin or destination in the City using a transportation origin-destination methodology. Accounting of VMT is based on the recommendations of CARB's Regional Targets Advisory Committee (RTAC) created under Senate Bill 375 (SB 375).

For accounting purposes, there are three types of trips:

» Vehicle trips that originated and terminated within the City (Internal-Internal, I-I). Using the accounting rules established by RTAC, 100 percent of the length of these trips, and their emissions, are attributed to the City.

» Vehicle trips that either originated or terminated (but not both) within the City (Internal-External or External-Internal, I-X and X-I). Using the accounting rules established by RTAC, 50 percent of the trip length for these trips is attributed to the City.

» Vehicle trips that neither originated nor terminated within the City. These trips are commonly called pass-through trips (External-External, X-X). Using the accounting rules established by RTAC, these trips are not counted towards the City's VMT or emissions.

Area Sources - Residential Consumer Products[a]

Emissions = EF x Building Area

EF = 2.14E-05 lbs/sqft/day

Sources/Notes:

a. California Emissions Estimator Model, Version 2021.1, Users Guide. Appendix D3.

AVERAGE HOUSING SQFT ASSUMPTIONS

Year Structure was Built	Percent of Housing Stock [a]	Average Square Feet of New Single Family Homes[b]	Average Square Feet (Weighted)
2020 or Later	0.4%	2,456	10
2010 to 2019	5.6%	2,549	143
2000 to 2009	11.0%	2,611	287
1990 to 1999	10.6%	2,348	249
1980 to 1989	15.0%	2,058	309
1979 or earlier	57.5%	1,857	1,068
	100%		2,065

Sources/Notes: https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/

a. United States Census Bureau, Selected Housing Characteristics, County of San Mateo, 2024. Table DP04. 2022 American Community Survey 5-Year Estimate https://data.census.gov/table/ACSDP5Y2022.DP04?g=040XX00US06_050XX00US06081&tid=ACSDP5Y2022.DP04

b. United States Census Bureau, Characteristics of New Housing, Characteristics of New Single-Family Houses Completed, Median and Average Square Feet by Location. https://www.census.gov/construction/chars/completed.html.

	Existing 2024 EIR Study Area	2045 GP Update EIR Study Area
Housing Units	13,250	21,560
Residential SQFT	27,362,818	47,770,101
lbs VOC per day	586	1,022
tons VOC per year	107	187

Notes:

[1] New housing units constructed post-2020 assumed to be 2,456 square feet (based on Source b).

[2] Daily emissions converted to annual emissions by multiplying by 365 days/year.

Average Square feet of Floor Area in Single-Family Houses Completed - West

United States Census Bureau, Characteristics of New Housing, Characteristics of New Single-Family Houses Completed, Median and Average Square Feet by Location. https://www.census.gov/construction/chars/completed.html.

1979 or Earlier	**1,857**
1973	1,895
1974	1,795
1975	1,715
1976	1,865
1977	1,875
1978	1,965
1979	1,890
1980 to 1989	**2,058**
1980	1,905
1981	1,965
1982	1,945
1983	2,025
1984	2,040
1985	2,090
1986	2,110
1987	2,095
1988	2,120
1989	2,280
1990 to 1999	**2,348**
1990	2,350
1991	2,340
1992	2,245
1993	2,265
1994	2,230
1995	2,380
1996	2,245
1997	2,405
1998	2,410
1999	2,613
2000 to 2009	**2,611**
2000	2,432
2001	2,491
2002	2,575
2003	2,587
2004	2,536
2005	2,697
2006	2,687
2007	2,840
2008	2,604
2009	2,656
2010 to 2019	**2,549**
2010	2,454

2011	2,289
2012	2,591
2013	2,574
2014	2,538
2015	2,615
2016	2,798
2017	2,531
2018	2,780
2019	2,319
2020 and Later	**2,456**
2020	2,204
2021	2,494
2022	2,600
2023	2,525

Area Sources

Source: OFFROAD2021. https://arb.ca.gov/emfac/emissions-inventory/

OFFROAD2021 Estimate based on:

Construction Equipment	Based on the percentage of total County Service Population Attributable to City (US Census Bureau 2024)
Lawn & Garden	Based on the percentage of total County Service Population Attributable to City (US Census Bureau 2024)
Light Commercial and Industrial Equipment	Based on the percentage of employment in San Carlos compared to San Mateo County (EDD 2024)

Construction (percentage of total County SP change attributable to City)

Source: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024; and US Census Bureau, https://onthemap.ces.census.gov/

Employment

Source: Employment Development Department, San Mateo County Profile, https://labormarketinfo.edd.ca.gov/geography/sanmateo-county.html.

2024 Existing		ROG Exhaust	NO_x Exhaust	CO Exhaust	SO_2 Exhaust	PM_{10} Exhaust	$PM_{2.5}$ Exhaust*
		lbs/year					
Agricultural	No agricultural use in the EIR Study Area	0	0	0	0	0	0
Construction Equipment		7	14	194	0	2	2
Lawn & Garden		90	11	1,067	0	1	1
Light Commercial/ Industrial Equipment		47	63	2,316	0	1	1
TOTAL City+ SOI		144	89	3,577	0	4	3

Horizon Year 2045	Forecast Adjusted for:	ROG Exhaust	NO_x Exhaust	CO Exhaust	SO2 Exhaust	PM10 Exhaust	PM2.5 Exhaust
		lbs/year					
Agricultural	No agricultural use in the EIR Study Area at buildout	0	0	0	0	0	0
Construction Equipment	Similar to historic	9	10	242	0	2	2
Lawn & Garden	Proportional to housing growth	153	20	1,961	0	2	1
Light Commercial/ Industrial Equipment	Proportional to employment growth	133	168	6,596	0	3	1
TOTAL City+ SOI		295	198	8,799	0	6	4

San Mateo County OFFROAD2021: Year 2024

Source: https://arb.ca.gov/emfac/offroad/emissions-inventory/ac1e3a1dd06a5013c98eb0ec624495ddf9d9eb1a
Construction includes: Over 25 horsepower, self-propelled, diesel equipment only subjected to In-Use Regulation; AND Under 25 horsepower equipment not subject to the In-Use Regulation

Model Output: OFFROAD2021 (v1.0.7) Emissions Inventory
Region Type: County
Region: San Mateo
Calendar Year: 2024
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Construction and Mining

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
San Mateo	2024	Construction and Mining - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	2.46E-04	2.21E-03	1.74E-03	4.79E-06	9.44E-05	8.69E-05	0.51	167
San Mateo	2024	Construction and Mining - Cranes	Aggregate	Aggregate	Diesel	1.73E-04	1.75E-03	1.39E-03	4.40E-06	7.73E-05	7.11E-05	0.46	154
San Mateo	2024	Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	5.83E-04	5.30E-03	4.58E-03	1.23E-05	2.45E-04	2.25E-04	1.30	431
San Mateo	2024	Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	1.72E-03	1.36E-02	1.56E-02	3.95E-05	5.32E-04	4.90E-04	4.17	1,380
San Mateo	2024	Construction and Mining - Graders	Aggregate	Aggregate	Diesel	2.62E-04	2.42E-03	1.75E-03	5.76E-06	1.11E-04	1.02E-04	0.61	201
San Mateo	2024	Construction and Mining - Misc - Asphalt Pavers	Aggregate	Aggregate	Gasoline	7.08E-04	5.63E-04	2.72E-02	1.01E-06	2.41E-04	1.82E-04	0.06	21
San Mateo	2024	Construction and Mining - Misc - Bore/Drill Rigs	Aggregate	Aggregate	Gasoline	1.91E-04	2.28E-04	7.41E-03	6.31E-07	6.78E-05	5.12E-05	0.05	18
San Mateo	2024	Construction and Mining - Misc - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	5.07E-05	3.20E-04	1.86E-04	4.59E-09	1.08E-05	8.19E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	Aggregate	Gasoline	9.13E-03	5.59E-03	2.74E-01	4.46E-06	2.37E-03	1.79E-03	0.00	0
San Mateo	2024	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	Aggregate	Diesel	6.23E-05	3.91E-04	3.03E-04	6.74E-09	1.37E-05	1.04E-05	0.00	0
San Mateo	2024	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Gasoline	7.36E-03	5.15E-03	2.44E-01	5.36E-06	2.69E-03	2.03E-03	0.15	48
San Mateo	2024	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Diesel	3.07E-05	2.31E-04	2.35E-04	3.49E-07	7.35E-06	6.45E-06	0.03	9
San Mateo	2024	Construction and Mining - Misc - Cranes	Aggregate	Aggregate	Gasoline	5.98E-05	1.45E-04	3.48E-03	4.95E-07	3.39E-06	2.56E-06	0.05	16
San Mateo	2024	Construction and Mining - Misc - Crushing/Proc. Equipment	Aggregate	Aggregate	Gasoline	4.92E-05	3.31E-05	1.73E-03	2.74E-08	1.98E-05	1.50E-05	0.00	0
San Mateo	2024	Construction and Mining - Misc - Dumpers/Tenders	Aggregate	Aggregate	Gasoline	9.62E-04	6.30E-04	2.60E-02	4.53E-07	2.63E-04	1.99E-04	0.00	1
San Mateo	2024	Construction and Mining - Misc - Dumpers/Tenders	Aggregate	Aggregate	Diesel	6.27E-06	3.96E-05	2.14E-05	5.43E-10	1.33E-06	1.01E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Excavators	Aggregate	Aggregate	Diesel	4.48E-05	2.83E-04	1.53E-04	3.88E-09	9.52E-06	7.19E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Other	Aggregate	Aggregate	Gasoline	2.95E-05	1.04E-04	2.78E-03	7.77E-07	5.61E-06	4.24E-06	0.08	26
San Mateo	2024	Construction and Mining - Misc - Other	Aggregate	Aggregate	Diesel	1.32E-04	8.30E-04	6.51E-04	1.44E-08	2.90E-05	2.19E-05	0.00	1
San Mateo	2024	Construction and Mining - Misc - Pavers	Aggregate	Aggregate	Diesel	1.18E-05	7.46E-05	4.03E-05	1.02E-09	2.51E-06	1.90E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Paving Equipment	Aggregate	Aggregate	Gasoline	1.58E-02	1.05E-02	4.72E-01	8.19E-06	4.66E-03	3.52E-03	0.06	18
San Mateo	2024	Construction and Mining - Misc - Paving Equipment	Aggregate	Aggregate	Diesel	2.00E-05	1.27E-04	6.84E-05	1.74E-09	4.26E-06	3.22E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Plate Compactors	Aggregate	Aggregate	Gasoline	6.56E-03	4.08E-03	1.86E-01	3.02E-06	1.58E-03	1.19E-03	0.00	0
San Mateo	2024	Construction and Mining - Misc - Plate Compactors	Aggregate	Aggregate	Diesel	4.26E-05	2.67E-04	2.23E-04	4.85E-09	9.38E-06	7.09E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Rollers	Aggregate	Aggregate	Gasoline	3.34E-03	2.61E-03	1.18E-01	3.39E-06	1.12E-03	8.48E-04	0.18	58
San Mateo	2024	Construction and Mining - Misc - Rollers	Aggregate	Aggregate	Diesel	2.95E-04	1.85E-03	1.29E-03	2.98E-08	6.38E-05	4.82E-05	0.00	1
San Mateo	2024	Construction and Mining - Misc - Rough Terrain Forklifts	Aggregate	Aggregate	Gasoline	3.74E-04	1.03E-03	1.87E-02	3.44E-06	2.46E-05	1.86E-05	0.35	117
San Mateo	2024	Construction and Mining - Misc - Rubber Tired Loaders	Aggregate	Aggregate	Gasoline	2.13E-04	5.31E-04	1.22E-02	1.81E-06	1.28E-05	9.66E-06	0.18	61
San Mateo	2024	Construction and Mining - Misc - Rubber Tired Loaders	Aggregate	Aggregate	Diesel	8.03E-06	5.07E-05	2.74E-05	6.96E-10	1.71E-06	1.29E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Signal Boards	Aggregate	Aggregate	Gasoline	1.58E-04	1.11E-04	5.33E-03	8.49E-08	6.08E-05	4.59E-05	0.00	0
San Mateo	2024	Construction and Mining - Misc - Signal Boards	Aggregate	Aggregate	Diesel	6.75E-04	4.25E-03	3.58E-03	2.30E-07	1.49E-04	1.13E-04	0.02	7
San Mateo	2024	Construction and Mining - Misc - Skid Steer Loaders	Aggregate	Aggregate	Gasoline	5.01E-03	3.70E-03	1.68E-01	7.60E-06	1.59E-03	1.20E-03	0.50	167
San Mateo	2024	Construction and Mining - Misc - Skid Steer Loaders	Aggregate	Aggregate	Diesel	2.32E-03	1.46E-02	7.89E-03	2.01E-07	5.00E-04	3.78E-04	0.02	7
San Mateo	2024	Construction and Mining - Misc - Surfacing Equipment	Aggregate	Aggregate	Gasoline	8.52E-03	5.91E-03	2.24E-01	3.65E-06	2.46E-03	1.86E-03	0.00	0
San Mateo	2024	Construction and Mining - Misc - Tampers/Rammers	Aggregate	Aggregate	Gasoline	7.59E-04	5.84E-04	2.91E-02	4.70E-07	4.12E-04	3.11E-04	0.00	0
San Mateo	2024	Construction and Mining - Misc - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Gasoline	9.54E-05	2.62E-04	7.40E-03	1.15E-06	8.26E-06	6.24E-06	0.12	39
San Mateo	2024	Construction and Mining - Misc - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	2.14E-04	1.35E-03	7.31E-04	1.86E-08	4.55E-05	3.44E-05	0.00	1
San Mateo	2024	Construction and Mining - Misc - Trenchers	Aggregate	Aggregate	Gasoline	5.91E-03	4.56E-03	2.13E-01	6.39E-06	2.03E-03	1.54E-03	0.32	107
San Mateo	2024	Construction and Mining - Misc - Trenchers	Aggregate	Aggregate	Diesel	2.69E-04	1.70E-03	1.03E-03	2.50E-08	5.77E-05	4.36E-05	0.00	1
San Mateo	2024	Construction and Mining - Off-Highway Tractors	Aggregate	Aggregate	Diesel	3.94E-04	2.57E-03	3.17E-03	7.02E-06	1.25E-04	1.15E-04	0.74	245
San Mateo	2024	Construction and Mining - Off-Highway Trucks	Aggregate	Aggregate	Diesel	6.71E-04	5.77E-03	3.99E-03	1.63E-05	2.09E-04	1.92E-04	1.73	571
San Mateo	2024	Construction and Mining - Pavers	Aggregate	Aggregate	Diesel	1.24E-04	1.02E-03	1.07E-03	2.54E-06	4.47E-05	4.11E-05	0.27	89
San Mateo	2024	Construction and Mining - Paving Equipment	Aggregate	Aggregate	Diesel	1.12E-04	8.28E-04	1.09E-03	2.82E-06	3.63E-05	3.34E-05	0.30	99
San Mateo	2024	Construction and Mining - Rollers	Aggregate	Aggregate	Diesel	4.02E-04	3.06E-03	4.01E-03	6.71E-06	1.42E-04	1.31E-04	0.71	234
San Mateo	2024	Construction and Mining - Rough Terrain Forklifts	Aggregate	Aggregate	Diesel	3.21E-04	3.02E-03	4.96E-03	8.33E-06	1.11E-04	1.02E-04	0.88	291
San Mateo	2024	Construction and Mining - Rubber Tired Dozers	Aggregate	Aggregate	Diesel	7.67E-05	6.85E-04	6.08E-04	1.42E-06	3.32E-05	3.06E-05	0.15	50
San Mateo	2024	Construction and Mining - Rubber Tired Loaders	Aggregate	Aggregate	Diesel	1.29E-03	9.83E-03	9.80E-03	2.87E-05	4.32E-04	3.97E-04	3.03	1,004
San Mateo	2024	Construction and Mining - Scrapers	Aggregate	Aggregate	Diesel	6.34E-04	6.29E-03	5.34E-03	1.45E-05	2.78E-04	2.56E-04	1.53	508
San Mateo	2024	Construction and Mining - Skid Steer Loaders	Aggregate	Aggregate	Diesel	7.36E-04	7.15E-03	8.44E-03	1.37E-05	2.54E-04	2.34E-04	1.44	478
San Mateo	2024	Construction and Mining - Surfacing Equipment	Aggregate	Aggregate	Diesel	5.31E-05	4.22E-04	3.65E-04	1.33E-06	1.79E-05	1.65E-05	0.14	47
San Mateo	2024	Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	2.10E-03	1.71E-02	2.07E-02	3.86E-05	8.61E-04	7.92E-04	4.07	1,348
San Mateo	2024	Construction and Mining - Trenchers	Aggregate	Aggregate	Diesel	9.59E-05	7.81E-04	6.63E-04	1.34E-06	3.68E-05	3.39E-05	0.14	47
TOTAL CONSTRUCTION OFFROAD (tons/day)						7.94E-02	1.56E-01	2.15E+00	2.63E-04	2.42E-02	1.89E-02	24.37	8,068
ESTIMATED San Mateo (tons/yr)						1.31	2.58	35.42	0.00	0.40	0.31	402.04	133123.98
ESTIMATED San Mateo (lbs/day)						7	14	194	0	2	2	804077	

City and County Population: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024; and US Census Bureau, https://onthemap.ces.census.gov/	**2024**
City Service Population	51,610
County Service Population	1,141,695
% of County Service Population Attributable to City	**5%**

Industrial and Light Commercial

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
San Mateo	2024	Industrial - Aerial Lifts	Aggregate	Aggregate	Diesel	5.02E-04	6.28E-03	7.37E-03	1.23E-05	1.69E-04	1.55E-04	1.30	432
San Mateo	2024	Industrial - Forklifts	Aggregate	Aggregate	Diesel	2.62E-03	2.38E-02	3.25E-02	5.50E-05	9.56E-04	8.79E-04	5.81	1,922
San Mateo	2024	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Gasoline	3.33E-03	2.99E-03	1.20E-01	9.69E-06	8.76E-04	6.62E-04	0.81	269
San Mateo	2024	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Diesel	1.74E-04	1.10E-03	7.05E-04	1.67E-08	3.86E-05	2.92E-05	0.00	1
San Mateo	2024	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Nat Gas	4.15E-05	3.23E-04	1.18E-02	2.51E-08	3.16E-05	2.39E-05	0.00	0
San Mateo	2024	Industrial - Misc - Forklifts	Aggregate	Aggregate	Gasoline	2.70E-02	1.22E-01	3.01E+00	2.68E-04	1.87E-03	1.41E-03	26.76	8,862
San Mateo	2024	Industrial - Misc - Forklifts	Aggregate	Aggregate	Nat Gas	7.68E-06	1.87E-01	1.73E+00	2.76E-09	3.81E-03	2.85E-06	42.77	14,161
San Mateo	2024	Industrial - Misc - Other General Industrial Equipment	Aggregate	Aggregate	Gasoline	1.41E-03	1.80E-03	1.13E-01	5.22E-06	2.93E-05	2.21E-05	0.37	122
San Mateo	2024	Industrial - Misc - Other General Industrial Equipment	Aggregate	Aggregate	Diesel	1.33E-04	8.66E-04	5.39E-04	1.28E-08	2.95E-05	2.23E-05	0.00	0
San Mateo	2024	Industrial - Misc - Other Material Handling Equipment	Aggregate	Aggregate	Gasoline	1.72E-04	8.66E-04	1.06E-02	2.12E-06	1.52E-05	1.15E-05	0.22	72
San Mateo	2024	Industrial - Misc - Sweepers/Scrubbers	Aggregate	Aggregate	Gasoline	1.88E-03	5.03E-03	1.62E-01	1.73E-05	1.09E-04	8.20E-05	1.54	510
San Mateo	2024	Industrial - Misc - Sweepers/Scrubbers	Aggregate	Aggregate	Diesel	3.39E-05	2.24E-04	1.50E-04	3.45E-09	7.68E-06	5.81E-06	0.00	0
San Mateo	2024	Industrial - Other General Industrial Equipment	Aggregate	Aggregate	Diesel	9.33E-04	7.62E-03	6.82E-03	1.62E-05	3.39E-04	3.12E-04	1.71	566
San Mateo	2024	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Gasoline	7.69E-02	4.82E-02	4.74E+00	1.78E-04	3.05E-04	3.00E-04	11.12	3,682
San Mateo	2024	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Diesel	8.34E-04	5.74E-03	7.00E-03	1.08E-05	1.88E-04	1.77E-04	0.87	288
San Mateo	2024	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Gas Compressors	Aggregate	Aggregate	Nat Gas	0.00E+00	2.09E-02	2.45E-01	0.00E+00	0.00E+00	0.00E+00	6.69	2,214
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Gasoline	2.44E-01	9.32E-02	7.18E+00	3.04E-04	6.58E-04	7.00E-04	19.18	6,351
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Diesel	2.91E-03	2.36E-02	2.10E-02	4.08E-05	6.67E-04	7.26E-04	3.55	1,175
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Nat Gas	0.00E+00	6.52E-04	6.11E-03	0.00E+00	0.00E+00	0.00E+00	0.22	72
San Mateo	2024	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Gasoline	5.87E-02	2.52E-02	3.46E+00	1.19E-04	8.93E-05	1.17E-04	6.83	2,263
San Mateo	2024	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Diesel	1.28E-05	1.18E-04	1.00E-04	2.06E-07	3.09E-06	3.47E-06	0.02	6
San Mateo	2024	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Gasoline	1.56E-02	8.72E-03	7.49E-01	4.48E-05	1.64E-04	1.35E-04	3.48	1,151
San Mateo	2024	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Diesel	1.73E-03	1.32E-02	1.24E-02	2.30E-05	3.86E-04	4.14E-04	1.99	658
San Mateo	2024	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Welders	Aggregate	Aggregate	Gasoline	3.57E-02	1.97E-02	2.05E+00	8.43E-05	2.38E-04	2.23E-04	5.49	1,818
San Mateo	2024	Light Commercial - Misc - Welders	Aggregate	Aggregate	Diesel	3.97E-03	2.86E-02	3.19E-02	5.29E-05	9.10E-04	8.88E-04	4.35	1,441
San Mateo	2024	Light Commercial - Misc - Welders	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
TOTAL LIGHT COMMERCIAL + INDUSTRIAL OFFROAD (tons/day)						0.478	0.648	23.716	0.001	0.012	0.007	145.07	48,036
ESTIMATED San Mateo (tons/yr)						8.52	11.54	422.65	0.02	0.21	0.13	7.08	2,345
ESTIMATED San Mateo (lbs/day)						47	63	2316	0	1	1	14166	

EMPLOYMENT: Employment Development Department, San Mateo County Profile, https://labormarketinfo.edd.ca.gov/geography/sanmateo-county.html	**2024**
Employment in San Mateo County	425,600
Employment in San Carlos	20,780
Percent in the City	**5%**

Note: San Mateo County employment estimates reflect those reported in January 2024.

Lawn and Garden

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
San Mateo	2024	Lawn and Garden - Misc - Chainsaws	Aggregate	Aggregate	Gasoline	1.80E-01	6.01E-03	5.36E-01	4.13E-05	2.26E-03	1.70E-03	2.86	946
San Mateo	2024	Lawn and Garden - Misc - Chainsaws	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Chainsaws Preempt	Aggregate	Aggregate	Gasoline	1.64E-01	5.84E-03	2.88E-01	2.44E-05	1.22E-03	9.19E-04	2	509
San Mateo	2024	Lawn and Garden - Misc - Chainsaws Preempt	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Gasoline	2.78E-04	9.47E-05	1.30E-02	4.72E-07	5.03E-07	3.80E-07	0	9
San Mateo	2024	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Diesel	3.62E-06	2.29E-05	1.24E-05	2.87E-08	7.70E-07	5.82E-07	0	1
San Mateo	2024	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Lawn Mowers	Aggregate	Aggregate	Gasoline	5.20E-02	3.07E-02	2.52E+00	1.06E-04	5.28E-04	3.99E-04	6	2,140
San Mateo	2024	Lawn and Garden - Misc - Lawn Mowers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Leaf Blowers/Vacuums	Aggregate	Aggregate	Gasoline	3.02E-01	1.07E-02	1.53E+00	1.06E-04	4.40E-03	3.33E-03	8	2,534
San Mateo	2024	Lawn and Garden - Misc - Leaf Blowers/Vacuums	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Other	Aggregate	Aggregate	Gasoline	1.05E-03	4.19E-04	6.10E-02	2.28E-06	2.86E-06	2.16E-06	0	46
San Mateo	2024	Lawn and Garden - Misc - Other	Aggregate	Aggregate	Diesel	1.60E-06	1.11E-05	8.83E-06	1.45E-08	3.87E-07	2.92E-07	0	1
San Mateo	2024	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Gasoline	8.93E-02	4.53E-02	5.10E+00	1.74E-04	3.53E-04	2.67E-04	10	3,298
San Mateo	2024	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Diesel	1.41E-03	9.14E-03	5.66E-03	1.16E-05	3.11E-04	2.35E-04	1	405
San Mateo	2024	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Snowblowers	Aggregate	Aggregate	Gasoline	3.66E-04	1.69E-04	2.48E-02	8.37E-07	9.34E-07	7.06E-07	0	14
San Mateo	2024	Lawn and Garden - Misc - Snowblowers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Tillers	Aggregate	Aggregate	Gasoline	2.52E-03	3.97E-04	4.87E-02	2.14E-06	4.88E-06	3.69E-06	0	43
San Mateo	2024	Lawn and Garden - Misc - Tillers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Trimmers/Edgers/Brush Cutters	Aggregate	Aggregate	Gasoline	1.93E-01	1.20E-02	1.18E+00	7.91E-05	1.67E-03	1.26E-03	6	1,912
San Mateo	2024	Lawn and Garden - Misc - Trimmers/Edgers/Brush Cutters	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Wood Splitters	Aggregate	Aggregate	Gasoline	1.02E-02	4.83E-03	4.89E-01	1.87E-05	4.38E-05	3.31E-05	1	377
TOTAL LAWN & GARDEN (tons/day)						1.00	0.13	11.80	0.00	0.01	0.01	36.95	12235.27
ESTIMATED San Mateo (tons/yr)						16.43	2.07	194.73	0.01	0.18	0.13	609.68	201878.48
ESTIMATED San Mateo (lbs/day)						90	11	1067	0	1	1	3341	

City and County Population: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024; and US Census Bureau, https://onthemap.ces.census.gov/	**2024**
City Service Population	51,610
County Service Population	1,141,695
City % Total Service Population in County	**5%**

San Mateo County OFFROAD2021: Year 2045

Source: https://arb.ca.gov/emfac/offroad/emissions-inventory/ac1e3a1dd06a5013c98eb0ec624495ddf9d9eb1a
Construction includes: Over 25 horsepower, self-propelled, diesel equipment only subjected to In-Use Regulation; AND Under 25 horsepower equipment not subject to the In-Use Regulation

Model Output: OFFROAD2021 (v1.0.7) Emissions Inventory
Region Type: County
Region: San Mateo
Calendar Year: 2045
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2021 Equipment Types
Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Construction and Mining

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
San Mateo	2024	Construction and Mining - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	1.71E-04	4.19E-04	1.62E-03	4.83E-06	1.73E-05	1.59E-05	0.51	169
San Mateo	2024	Construction and Mining - Cranes	Aggregate	Aggregate	Diesel	9.90E-05	2.64E-04	1.05E-03	4.26E-06	1.30E-05	1.20E-05	0.45	149
San Mateo	2024	Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	3.75E-04	8.87E-04	4.06E-03	1.26E-05	4.10E-05	3.78E-05	1.33	440
San Mateo	2024	Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	1.44E-03	4.67E-03	1.57E-02	3.87E-05	1.33E-04	1.22E-04	4.08	1,352
San Mateo	2024	Construction and Mining - Graders	Aggregate	Aggregate	Diesel	1.60E-04	2.98E-04	1.72E-03	5.72E-06	1.72E-05	1.58E-05	0.60	200
San Mateo	2024	Construction and Mining - Misc - Asphalt Pavers	Aggregate	Aggregate	Gasoline	8.43E-04	6.27E-04	3.22E-02	1.09E-06	2.98E-04	2.25E-04	0.06	21
San Mateo	2024	Construction and Mining - Misc - Bore/Drill Rigs	Aggregate	Aggregate	Gasoline	2.09E-04	1.84E-04	8.36E-03	6.47E-07	7.98E-05	6.03E-05	0.05	18
San Mateo	2024	Construction and Mining - Misc - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	6.17E-05	3.89E-04	2.26E-04	5.58E-09	1.32E-05	9.95E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	Aggregate	Gasoline	1.15E-02	7.27E-03	3.50E-01	5.67E-06	3.05E-03	2.31E-03	0.00	0
San Mateo	2024	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	Aggregate	Diesel	7.55E-05	4.74E-04	3.68E-04	8.18E-09	1.65E-05	1.25E-05	0.00	0
San Mateo	2024	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Gasoline	9.42E-03	6.55E-03	3.11E-01	6.42E-06	3.44E-03	2.60E-03	0.15	48
San Mateo	2024	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Diesel	2.75E-05	2.37E-04	2.74E-04	4.24E-07	2.92E-06	2.35E-06	0.03	11
San Mateo	2024	Construction and Mining - Misc - Cranes	Aggregate	Aggregate	Gasoline	4.21E-05	9.49E-05	3.57E-03	4.95E-07	3.39E-06	2.56E-06	0.05	16
San Mateo	2024	Construction and Mining - Misc - Crushing/Proc. Equipment	Aggregate	Aggregate	Gasoline	6.10E-05	4.10E-05	2.13E-03	3.38E-08	2.45E-05	1.85E-05	0.00	0
San Mateo	2024	Construction and Mining - Misc - Dumpers/Tenders	Aggregate	Aggregate	Gasoline	1.24E-03	8.16E-04	3.32E-02	5.72E-07	3.37E-04	2.55E-04	0.00	1
San Mateo	2024	Construction and Mining - Misc - Dumpers/Tenders	Aggregate	Aggregate	Diesel	7.64E-06	4.83E-05	2.61E-05	6.62E-10	1.62E-06	1.23E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Excavators	Aggregate	Aggregate	Diesel	5.44E-05	3.44E-04	1.86E-04	4.72E-09	1.16E-05	8.74E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Other	Aggregate	Aggregate	Gasoline	2.95E-05	1.04E-04	2.78E-03	7.77E-07	5.61E-06	4.24E-06	0.08	26
San Mateo	2024	Construction and Mining - Misc - Other	Aggregate	Aggregate	Diesel	1.63E-04	1.02E-03	8.01E-04	1.78E-08	3.57E-05	2.69E-05	0.00	1
San Mateo	2024	Construction and Mining - Misc - Pavers	Aggregate	Aggregate	Diesel	1.45E-05	9.16E-05	4.94E-05	1.26E-09	3.08E-06	2.33E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Paving Equipment	Aggregate	Aggregate	Gasoline	2.03E-02	1.35E-02	6.05E-01	1.03E-05	5.98E-03	4.52E-03	0.06	18
San Mateo	2024	Construction and Mining - Misc - Paving Equipment	Aggregate	Aggregate	Diesel	2.38E-05	1.50E-04	8.11E-05	2.06E-09	5.05E-06	3.81E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Plate Compactors	Aggregate	Aggregate	Gasoline	8.44E-03	5.25E-03	2.39E-01	3.88E-06	2.03E-03	1.53E-03	0.00	0
San Mateo	2024	Construction and Mining - Misc - Plate Compactors	Aggregate	Aggregate	Diesel	5.17E-05	3.24E-04	2.71E-04	5.89E-09	1.14E-05	8.60E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Rollers	Aggregate	Aggregate	Gasoline	4.14E-03	3.02E-03	1.47E-01	3.85E-06	1.44E-03	1.09E-03	0.18	58
San Mateo	2024	Construction and Mining - Misc - Rollers	Aggregate	Aggregate	Diesel	3.51E-04	2.21E-03	1.53E-03	3.54E-08	7.59E-05	5.74E-05	0.00	1
San Mateo	2024	Construction and Mining - Misc - Rough Terrain Forklifts	Aggregate	Aggregate	Gasoline	2.50E-04	6.56E-04	1.87E-02	3.44E-06	2.46E-05	1.86E-05	0.35	117
San Mateo	2024	Construction and Mining - Misc - Rubber Tired Loaders	Aggregate	Aggregate	Gasoline	1.51E-04	3.78E-04	1.23E-02	1.81E-06	1.28E-05	9.66E-06	0.18	61
San Mateo	2024	Construction and Mining - Misc - Rubber Tired Loaders	Aggregate	Aggregate	Diesel	9.69E-06	6.13E-05	3.31E-05	8.40E-10	2.06E-06	1.56E-06	0.00	0
San Mateo	2024	Construction and Mining - Misc - Signal Boards	Aggregate	Aggregate	Gasoline	2.03E-04	1.44E-04	6.85E-03	1.09E-07	7.81E-05	5.90E-05	0.00	0
San Mateo	2024	Construction and Mining - Misc - Signal Boards	Aggregate	Aggregate	Diesel	8.15E-04	5.14E-03	4.34E-03	2.79E-07	1.78E-04	1.35E-04	0.02	8
San Mateo	2024	Construction and Mining - Misc - Skid Steer Loaders	Aggregate	Aggregate	Gasoline	6.09E-03	4.39E-03	2.01E-01	8.14E-06	1.97E-03	1.49E-03	0.50	167
San Mateo	2024	Construction and Mining - Misc - Skid Steer Loaders	Aggregate	Aggregate	Diesel	2.69E-03	1.70E-02	9.17E-03	2.33E-07	5.71E-04	4.31E-04	0.02	8
San Mateo	2024	Construction and Mining - Misc - Surfacing Equipment	Aggregate	Aggregate	Gasoline	1.10E-02	7.62E-03	2.88E-01	4.69E-06	3.16E-03	2.39E-03	0.00	0
San Mateo	2024	Construction and Mining - Misc - Tampers/Rammers	Aggregate	Aggregate	Gasoline	9.76E-04	7.50E-04	3.75E-02	6.04E-07	5.29E-04	4.00E-04	0.00	0
San Mateo	2024	Construction and Mining - Misc - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Gasoline	9.50E-05	2.60E-04	7.37E-03	1.15E-06	8.26E-06	6.24E-06	0.12	39
San Mateo	2024	Construction and Mining - Misc - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	2.61E-04	1.65E-03	8.92E-04	2.27E-08	5.55E-05	4.20E-05	0.00	1
San Mateo	2024	Construction and Mining - Misc - Trenchers	Aggregate	Aggregate	Gasoline	7.37E-03	5.33E-03	2.67E-01	7.21E-06	2.63E-03	1.98E-03	0.32	107
San Mateo	2024	Construction and Mining - Misc - Trenchers	Aggregate	Aggregate	Diesel	2.83E-04	1.79E-03	1.08E-03	2.63E-08	6.06E-05	4.58E-05	0.00	1
San Mateo	2024	Construction and Mining - Off-Highway Tractors	Aggregate	Aggregate	Diesel	2.99E-04	8.32E-04	3.14E-03	7.04E-06	2.65E-05	2.44E-05	0.74	246
San Mateo	2024	Construction and Mining - Off-Highway Trucks	Aggregate	Aggregate	Diesel	5.79E-04	2.22E-03	3.92E-03	1.68E-05	6.09E-05	5.60E-05	1.77	587
San Mateo	2024	Construction and Mining - Pavers	Aggregate	Aggregate	Diesel	8.88E-05	3.13E-04	1.09E-03	2.49E-06	1.01E-05	9.26E-06	0.26	87
San Mateo	2024	Construction and Mining - Paving Equipment	Aggregate	Aggregate	Diesel	9.22E-05	2.57E-04	1.11E-03	2.77E-06	9.51E-06	8.75E-06	0.29	97
San Mateo	2024	Construction and Mining - Rollers	Aggregate	Aggregate	Diesel	2.60E-04	1.14E-03	4.03E-03	6.74E-06	2.72E-05	2.50E-05	0.71	235
San Mateo	2024	Construction and Mining - Rough Terrain Forklifts	Aggregate	Aggregate	Diesel	2.53E-04	1.05E-03	5.08E-03	8.21E-06	2.81E-05	2.59E-05	0.87	287
San Mateo	2024	Construction and Mining - Rubber Tired Dozers	Aggregate	Aggregate	Diesel	5.68E-05	1.04E-04	4.67E-04	1.72E-06	5.03E-06	4.63E-06	0.18	60
San Mateo	2024	Construction and Mining - Rubber Tired Loaders	Aggregate	Aggregate	Diesel	9.98E-04	1.73E-03	9.67E-03	2.87E-05	8.91E-05	8.20E-05	3.03	1,004
San Mateo	2024	Construction and Mining - Scrapers	Aggregate	Aggregate	Diesel	4.34E-04	6.88E-04	3.70E-03	1.74E-05	4.52E-05	4.16E-05	1.84	608
San Mateo	2024	Construction and Mining - Skid Steer Loaders	Aggregate	Aggregate	Diesel	6.04E-04	4.81E-03	8.51E-03	1.35E-05	6.44E-05	5.93E-05	1.43	472
San Mateo	2024	Construction and Mining - Surfacing Equipment	Aggregate	Aggregate	Diesel	4.39E-05	1.29E-04	3.56E-04	1.34E-06	4.74E-06	4.36E-06	0.14	47
San Mateo	2024	Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	1.39E-03	4.98E-03	2.08E-02	3.83E-05	1.62E-04	1.49E-04	4.04	1,339
San Mateo	2024	Construction and Mining - Trenchers	Aggregate	Aggregate	Diesel	5.59E-05	3.82E-04	6.32E-04	1.34E-06	7.29E-06	6.70E-06	0.14	47
TOTAL CONSTRUCTION OFFROAD (tons/day)						9.46E-02	1.13E-01	2.68E+00	2.74E-04	2.69E-02	2.05E-02	24.63	8,156
ESTIMATED San Mateo (tons/yr)						1.56	1.86	44.21	0.00	0.44	0.34	406.40	134568.99
ESTIMATED San Mateo (lbs/day)						9	10	242	0	2	2	812805	

City and County Population: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024; and US Census Bureau, https://onthemap.ces.census.gov/	**2024**
City Service Population	51,610
County Service Population	1,141,695
% of County Service Population Attributable to City	**5%**

Industrial and Light Commercial

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
San Mateo	2024	Industrial - Aerial Lifts	Aggregate	Aggregate	Diesel	4.70E-04	4.97E-03	7.52E-03	1.22E-05	4.78E-05	4.40E-05	1.29	426
San Mateo	2024	Industrial - Forklifts	Aggregate	Aggregate	Diesel	1.97E-03	1.01E-02	3.30E-02	5.39E-05	2.04E-04	1.87E-04	5.69	1,885
San Mateo	2024	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Gasoline	4.34E-03	3.83E-03	1.54E-01	1.21E-05	1.15E-03	8.65E-04	1.01	333
San Mateo	2024	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Diesel	2.22E-04	1.40E-03	9.00E-04	2.14E-08	4.77E-05	3.61E-05	0.00	1
San Mateo	2024	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Nat Gas	5.42E-05	4.17E-04	1.52E-02	3.24E-08	4.09E-05	3.09E-05	0.00	0
San Mateo	2024	Industrial - Misc - Forklifts	Aggregate	Aggregate	Gasoline	3.35E-02	1.51E-01	3.73E+00	3.32E-04	2.31E-03	1.75E-03	33.16	10,980
San Mateo	2024	Industrial - Misc - Forklifts	Aggregate	Aggregate	Nat Gas	9.40E-06	2.32E-01	2.15E+00	3.36E-09	4.72E-03	3.48E-06	52.99	17,546
San Mateo	2024	Industrial - Misc - Other General Industrial Equipment	Aggregate	Aggregate	Gasoline	1.79E-03	2.25E-03	1.43E-01	6.52E-06	3.65E-05	2.75E-05	0.46	151
San Mateo	2024	Industrial - Misc - Other General Industrial Equipment	Aggregate	Aggregate	Diesel	1.78E-04	1.16E-03	7.19E-04	1.71E-08	3.93E-05	2.97E-05	0.00	1
San Mateo	2024	Industrial - Misc - Other Material Handling Equipment	Aggregate	Aggregate	Gasoline	1.52E-04	9.28E-04	1.28E-02	2.63E-06	1.89E-05	1.43E-05	0.27	90
San Mateo	2024	Industrial - Misc - Sweepers/Scrubbers	Aggregate	Aggregate	Gasoline	2.36E-03	6.25E-03	2.03E-01	2.15E-05	1.35E-04	1.02E-04	1.91	632
San Mateo	2024	Industrial - Misc - Sweepers/Scrubbers	Aggregate	Aggregate	Diesel	4.44E-05	2.93E-04	1.96E-04	4.52E-09	1.01E-05	7.60E-06	0.00	0
San Mateo	2024	Industrial - Other General Industrial Equipment	Aggregate	Aggregate	Diesel	6.58E-04	3.11E-03	6.64E-03	1.65E-05	7.18E-05	6.61E-05	1.74	577
San Mateo	2024	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Gasoline	9.06E-02	5.51E-02	5.71E+00	2.14E-04	3.54E-04	3.40E-04	13.43	4,447
San Mateo	2024	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Diesel	7.11E-04	5.86E-03	8.25E-03	1.32E-05	3.90E-05	4.00E-05	1.06	352
San Mateo	2024	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Gas Compressors	Aggregate	Aggregate	Nat Gas	0.00E+00	2.59E-02	3.04E-01	0.00E+00	0.00E+00	0.00E+00	8.28	2,743
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Gasoline	3.27E-01	1.22E-01	9.65E+00	4.04E-04	7.58E-04	7.91E-04	25.35	8,394
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Diesel	2.64E-03	2.45E-02	2.41E-02	4.85E-05	3.30E-04	4.12E-04	4.19	1,387
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Nat Gas	0.00E+00	6.77E-04	7.57E-03	0.00E+00	0.00E+00	0.00E+00	0.27	89
San Mateo	2024	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Gasoline	6.85E-02	2.94E-02	4.03E+00	1.38E-04	9.99E-05	1.31E-04	7.97	2,639
San Mateo	2024	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Diesel	1.19E-05	1.23E-04	1.15E-04	2.44E-07	1.76E-06	2.22E-06	0.02	7
San Mateo	2024	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Gasoline	1.88E-02	1.00E-02	9.34E-01	5.57E-05	1.98E-04	1.62E-04	4.31	1,428
San Mateo	2024	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Diesel	1.54E-03	1.36E-02	1.42E-02	2.75E-05	1.76E-04	2.17E-04	2.35	779
San Mateo	2024	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
San Mateo	2024	Light Commercial - Misc - Welders	Aggregate	Aggregate	Gasoline	4.08E-02	2.08E-02	2.48E+00	1.02E-04	2.47E-04	2.14E-04	6.66	2,206
San Mateo	2024	Light Commercial - Misc - Welders	Aggregate	Aggregate	Diesel	3.35E-03	2.93E-02	3.73E-02	6.45E-05	2.44E-04	2.74E-04	5.27	1,746
San Mateo	2024	Light Commercial - Misc - Welders	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	0
TOTAL LIGHT COMMERCIAL + INDUSTRIAL OFFROAD (tons/day)						0.600	0.754	29.663	0.002	0.011	0.006	177.69	58,838
ESTIMATED San Mateo (tons/yr)						10.69	13.44	528.63	0.03	0.20	0.10	8.68	2,873
ESTIMATED San Mateo (lbs/day)						59	74	2897	0	1	1	17352	

EMPLOYMENT: Employment Development Department, San Mateo County Profile, https://labormarketinfo.edd.ca.gov/geography/sanmateo-county.html	**2024**
Employment in San Mateo County	425,600
Employment in San Carlos	20,780
Percent in the City	**5%**

Note: San Mateo County employment estimates reflect those reported in January 2024.

Lawn and Garden

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd	CO2_tpd	CO2e_MTY
San Mateo	2024	Lawn and Garden - Misc - Chainsaws	Aggregate	Aggregate	Gasoline	1.92E-01	6.44E-03	5.68E-01	4.39E-05	2.42E-03	1.83E-03	3.04	1,007
San Mateo	2024	Lawn and Garden - Misc - Chainsaws	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Chainsaws Preempt	Aggregate	Aggregate	Gasoline	1.78E-01	6.37E-03	3.06E-01	2.61E-05	1.30E-03	9.84E-04	2	542
San Mateo	2024	Lawn and Garden - Misc - Chainsaws Preempt	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Gasoline	3.06E-04	1.03E-04	1.42E-02	5.13E-07	4.75E-07	3.60E-07	0	10
San Mateo	2024	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Diesel	4.52E-06	2.85E-05	1.54E-05	3.58E-08	9.60E-07	7.25E-07	0	1
San Mateo	2024	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Lawn Mowers	Aggregate	Aggregate	Gasoline	5.27E-02	3.20E-02	2.69E+00	1.12E-04	1.51E-04	1.14E-04	7	2,250
San Mateo	2024	Lawn and Garden - Misc - Lawn Mowers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Leaf Blowers/Vacuums	Aggregate	Aggregate	Gasoline	3.06E-01	1.08E-02	1.55E+00	1.07E-04	4.46E-03	3.37E-03	8	2,566
San Mateo	2024	Lawn and Garden - Misc - Leaf Blowers/Vacuums	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Other	Aggregate	Aggregate	Gasoline	1.14E-03	4.47E-04	6.71E-02	2.50E-06	2.27E-06	1.71E-06	0	50
San Mateo	2024	Lawn and Garden - Misc - Other	Aggregate	Aggregate	Diesel	2.01E-06	1.39E-05	1.11E-05	1.82E-08	4.87E-07	3.68E-07	0	1
San Mateo	2024	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Gasoline	9.86E-02	4.96E-02	6.27E+00	2.12E-04	1.74E-04	1.32E-04	12	4,021
San Mateo	2024	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Diesel	1.74E-03	1.13E-02	7.01E-03	1.44E-05	3.84E-04	2.90E-04	2	501
San Mateo	2024	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Snowblowers	Aggregate	Aggregate	Gasoline	4.07E-04	1.84E-04	2.81E-02	9.48E-07	8.07E-07	6.09E-07	0	16
San Mateo	2024	Lawn and Garden - Misc - Snowblowers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Tillers	Aggregate	Aggregate	Gasoline	2.83E-03	4.32E-04	5.39E-02	2.35E-06	4.86E-06	3.67E-06	0	47
San Mateo	2024	Lawn and Garden - Misc - Tillers	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Trimmers/Edgers/Brush Cutters	Aggregate	Aggregate	Gasoline	1.95E-01	1.21E-02	1.20E+00	8.00E-05	1.69E-03	1.28E-03	6	1,933
San Mateo	2024	Lawn and Garden - Misc - Trimmers/Edgers/Brush Cutters	Aggregate	Aggregate	Electric	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
San Mateo	2024	Lawn and Garden - Misc - Wood Splitters	Aggregate	Aggregate	Gasoline	1.05E-02	5.04E-03	5.79E-01	2.21E-05	2.13E-05	1.60E-05	1	452
TOTAL LAWN & GARDEN (tons/day)						1.04	0.13	13.33	0.00	0.01	0.01	40.46	13398.57
ESTIMATED San Mateo (tons/yr)						17.15	2.23	219.92	0.01	0.18	0.13	667.65	221072.75
ESTIMATED San Mateo (lbs/day)						94	12	1205	0	1	1	3658	

City and County Population: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2024; and US Census Bureau, https://onthemap.ces.census.gov/	**2024**
City Service Population	51,610
County Service Population	1,141,695
City % Total Service Population in County	**5%**

San Carlos — TRANSPORTATION SECTOR (Criteria Air Pollutants)

Source: EMFAC2021 V.1.0.2., Web Database - Emission Rates. San Mateo County. Based on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) Global Warming Potentials (GWPs); Kittelson and Associates, Inc. 2024.

Criteria Air Pollutants

	lbs/day					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Existing EIR Study Area	26	168	1,172	6	37	14
Existing in Year 2045 EIR Study Area	19	89	1,112	6	50	17
Proposed 2045 EIR Study Area	23	109	1,366	8	62	21
Change from Existing Conditions (2024-2045)	-3	-59	194	2	24	7
Change from Existing Land Uses (2045 Emission Rates)	-7	-79	-61	0	13	3

	Tons/year					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Existing EIR Study Area	5	29	203	1	6	2
Existing in Year 2045 EIR Study Area	3	15	193	1	9	3
Proposed 2045 EIR Study Area	4	19	237	1	11	4
Change from Existing Conditions (2024-2045)	-1	-10	34	0	4	1
Change from Existing Land Uses (2045 Emission Rates)	-1	-4	-44	0	-2	-1

Notes:

[1] lbs to Tons 2000

[2] MTons = metric tons; CO2e = carbon dioxide-equivalent.

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

City of San Carlos VMT

Source: Kittelson & Associates, Inc. 2024.

Scenario	Daily VMT IX	XI	II	Total Daily VMT	Total with RTAC	Service Population	VMT/SP	VMT/SP w RTAC
ExistingYear (Year 2024)	799,045	675,760	35,721	1,510,525	773,123	51,610	29.3	15.0
No Project (Year 2045)	1,143,565	926,543	51,205	2,121,313	1,086,259	93,770	22.6	11.6
GP Update (Year 2045)	1,177,392	1,367,865	62,532	2,607,789	1,335,160	93,770	27.8	14.2

Notes: Total may not add to 100% due to rounding.

IX = Internal-External

XI = External- Internal

II = Internal-Internal

Daily VMT and Fleet Mix Percentage						
	Existing Year (Year 2024)		No Project (Year 2045)		GP Update (Year 2045)	
	Daily VMT	Percent	Daily VMT	Percent	Daily VMT	Percent
Passenger Vehicles	747,022	97%	1,050,506	97%	1,278,749	96%
Trucks	26,101	3%	35,753	3%	56,411	4%

Modeling of vehicle miles traveled (VMT) provided by Kittelson & Associates Inc., 2024. VMT from passenger vehicles and trucks that have an origin or destination in the City using a transportation origin-destination methodology. Accounting of VMT is based on the recommendations of CARB's Regional Targets Advisory Committee (RTAC) created under Senate Bill 375 (SB 375). For accounting purposes, there are three types of trips:

- Vehicle trips that originated and terminated within the City (Internal-Internal, I-I). Using the accounting rules established by RTAC, 100 percent of the length of these trips, and their emissions, are attributed to the City.
- Vehicle trips that either originated or terminated (but not both) within the City (Internal-External or External-Internal, I-X and X-I). Using the accounting rules established by RTAC, 50 percent of the trip length for these trips is attributed to the City.
- Vehicle trips that neither originated nor terminated within the City. These trips are commonly called pass-through trips (External-External, X-X). Using the accounting rules established by RTAC, these trips are not counted towards the City's VMT or emissions.

Year 2024 Existing: Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo County (K)	**97%**	**3%**
Passenger Vehicles	Trucks	EMFAC default
94%	6%	

Daily VMT	**773,123**						**lbs/day**		
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	Diesel	0.36%	0.37%	0.13	4.28	0.59	0.07	0.39	0.16
All Other Buses	Natural Gas	0.00%	0.00%	0.00	0.01	0.15	0.00	0.00	0.00
LDA	Gasoline	40.41%	41.49%	5.40	26.23	439.29	1.85	11.00	3.80
LDA	Diesel	0.10%	0.10%	0.04	0.31	0.49	0.00	0.05	0.03
LDA	Electricity	3.74%	3.84%	0.00	0.00	0.00	0.00	0.79	0.22
LDA	Plug-in Hybrid	1.49%	1.53%	0.03	0.08	4.99	0.03	0.32	0.10
LDT1	Gasoline	3.95%	4.06%	1.41	6.81	73.94	0.21	1.19	0.43
LDT1	Diesel	0.00%	0.00%	0.00	0.01	0.01	0.00	0.00	0.00
LDT1	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Plug-in Hybrid	0.01%	0.01%	0.00	0.00	0.04	0.00	0.00	0.00
LDT2	Gasoline	26.65%	27.35%	3.71	21.73	295.58	1.47	7.73	2.67
LDT2	Diesel	0.10%	0.11%	0.02	0.07	0.21	0.01	0.04	0.02
LDT2	Electricity	0.20%	0.21%	0.00	0.00	0.00	0.00	0.04	0.01
LDT2	Plug-in Hybrid	0.34%	0.35%	0.01	0.02	1.09	0.01	0.07	0.02
LHD1	Gasoline	2.18%	1.25%	1.00	4.01	34.57	0.31	3.24	1.14
LHD1	Diesel	1.04%	0.60%	2.34	18.19	5.87	0.10	2.05	0.97
LHD1	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.02	0.01
LHD2	Gasoline	0.24%	0.14%	0.09	0.50	3.35	0.04	0.41	0.14
LHD2	Diesel	0.45%	0.26%	0.96	5.87	2.17	0.05	0.97	0.44
LHD2	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MCY	Gasoline	0.42%	0.43%	6.59	3.68	78.26	0.01	0.13	0.05
MDV	Gasoline	15.31%	15.71%	2.59	15.24	179.01	1.02	4.45	1.54
MDV	Diesel	0.21%	0.21%	0.03	0.13	0.60	0.01	0.07	0.03
MDV	Electricity	0.22%	0.23%	0.00	0.00	0.00	0.00	0.05	0.01
MDV	Plug-in Hybrid	0.19%	0.19%	0.00	0.01	0.61	0.00	0.04	0.01
MH	Gasoline	0.04%	0.04%	0.04	0.23	0.82	0.01	0.04	0.01
MH	Diesel	0.02%	0.02%	0.03	1.06	0.10	0.00	0.04	0.02
Motor Coach	Diesel	0.05%	0.05%	0.01	1.51	0.06	0.01	0.10	0.05
OBUS	Gasoline	0.08%	0.08%	0.05	0.37	1.13	0.02	0.08	0.03
OBUS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
PTO	Diesel	0.03%	0.02%	0.01	1.49	0.13	0.01	0.00	0.00
PTO	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	0.03	0.27	0.81	0.00	0.02	0.01
SBUS	Diesel	0.02%	0.02%	0.02	1.64	0.07	0.00	0.03	0.01
SBUS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	Natural Gas	0.00%	0.00%	0.00	0.01	0.16	0.00	0.00	0.00
T6 CAIRP Class 4	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 CAIRP Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Diesel	0.00%	0.00%	0.00	0.02	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 7	Diesel	0.02%	0.01%	0.00	0.11	0.01	0.00	0.02	0.01
T6 CAIRP Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Diesel	0.07%	0.04%	0.11	2.08	0.35	0.01	0.11	0.07
T6 Instate Delivery Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00
T6 Instate Delivery Class 5	Diesel	0.05%	0.03%	0.02	0.84	0.11	0.01	0.07	0.03
T6 Instate Delivery Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T6 Instate Delivery Class 6	Diesel	0.11%	0.07%	0.08	2.20	0.31	0.02	0.15	0.07
T6 Instate Delivery Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.03	0.00	0.00	0.00
T6 Instate Delivery Class 7	Diesel	0.04%	0.03%	0.01	0.82	0.07	0.01	0.05	0.02
T6 Instate Delivery Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.07	0.00	0.00	0.00
T6 Instate Other Class 4	Diesel	0.09%	0.05%	0.12	2.73	0.38	0.02	0.15	0.09
T6 Instate Other Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00
T6 Instate Other Class 5	Diesel	0.24%	0.14%	0.07	2.83	0.31	0.04	0.26	0.11
T6 Instate Other Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.03	0.00	0.00	0.00
T6 Instate Other Class 6	Diesel	0.15%	0.09%	0.09	2.61	0.32	0.03	0.19	0.09
T6 Instate Other Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00

Year 2024 Existing: Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo County (K)	**97%**	**3%**
Passenger Vehicles	Trucks	EMFAC default
94%	6%	

Daily VMT	**773,123**								**lbs/day**	
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T6 Instate Other Class 7	Diesel	0.07%	0.04%	0.01	1.07	0.09	0.01	0.07	0.03
T6 Instate Other Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.09	0.00	0.00	0.00
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	0.00	0.05	0.01	0.00	0.00	0.00
T6 Instate Tractor Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	0.00	0.35	0.03	0.00	0.02	0.01
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00
T6 OOS Class 4	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 OOS Class 7	Diesel	0.01%	0.01%	0.00	0.08	0.01	0.00	0.01	0.00
T6 Public Class 4	Diesel	0.01%	0.00%	0.01	0.55	0.02	0.00	0.01	0.00
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T6 Public Class 5	Diesel	0.02%	0.01%	0.02	0.88	0.05	0.00	0.03	0.01
T6 Public Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.10	0.00	0.00	0.00
T6 Public Class 6	Diesel	0.01%	0.01%	0.02	1.01	0.04	0.00	0.02	0.01
T6 Public Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.03	0.00	0.00	0.00
T6 Public Class 7	Diesel	0.03%	0.02%	0.05	3.11	0.11	0.01	0.05	0.03
T6 Public Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.11	0.00	0.00	0.00
T6 Utility Class 5	Diesel	0.00%	0.00%	0.00	0.02	0.00	0.00	0.00	0.00
T6 Utility Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	Gasoline	0.25%	0.15%	0.27	1.71	5.53	0.07	0.25	0.09
T6TS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP Class 8	Diesel	0.09%	0.05%	0.02	2.46	0.09	0.02	0.23	0.10
T7 CAIRP Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T7 NNOOS Class 8	Diesel	0.11%	0.06%	0.02	2.83	0.10	0.03	0.27	0.12
T7 NOOS Class 8	Diesel	0.04%	0.02%	0.01	1.09	0.04	0.01	0.10	0.05
T7 Other Port Class 8	Diesel	0.01%	0.01%	0.00	0.25	0.02	0.00	0.02	0.01
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POAK Class 8	Diesel	0.03%	0.02%	0.01	0.92	0.06	0.01	0.07	0.03
T7 POAK Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Public Class 8	Diesel	0.08%	0.05%	0.14	10.22	0.47	0.02	0.26	0.12
T7 Public Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Public Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.07	0.00	0.00	0.00
T7 Single Concrete/Transit Mix Class 8	Diesel	0.02%	0.01%	0.00	0.31	0.02	0.00	0.04	0.02
T7 Single Concrete/Transit Mix Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Single Concrete/Transit Mix Class 8	Natural Gas	0.00%	0.00%	0.00	0.01	0.10	0.00	0.00	0.00
T7 Single Dump Class 8	Diesel	0.06%	0.03%	0.01	1.48	0.09	0.02	0.13	0.05
T7 Single Dump Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	0.00	0.02	0.40	0.00	0.01	0.00
T7 Single Other Class 8	Diesel	0.06%	0.03%	0.01	1.42	0.09	0.02	0.13	0.05
T7 Single Other Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	0.00	0.03	0.47	0.00	0.01	0.00
T7 SWCV Class 8	Diesel	0.05%	0.03%	0.04	5.84	0.10	0.03	0.20	0.07
T7 SWCV Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 SWCV Class 8	Natural Gas	0.04%	0.02%	0.07	1.40	14.73	0.00	0.18	0.06
T7 Tractor Class 8	Diesel	0.08%	0.04%	0.02	2.11	0.11	0.02	0.18	0.08
T7 Tractor Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7 Tractor Class 8	Natural Gas	0.01%	0.01%	0.00	0.08	1.43	0.00	0.02	0.01
T7 Utility Class 8	Diesel	0.00%	0.00%	0.00	0.03	0.00	0.00	0.00	0.00

Year 2024 Existing: Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo County (K)	**97%**	**3%**
Passenger Vehicles	Trucks	EMFAC default
94%	6%	

Daily VMT	**773,123**								**lbs/day**	
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T7 Utility Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	Gasoline	0.00%	0.00%	0.03	0.21	1.78	0.00	0.01	0.00
T7IS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	Gasoline	0.02%	0.02%	0.00	0.01	0.21	0.00	0.04	0.01
UBUS	Diesel	0.12%	0.12%	0.13	0.75	0.15	0.02	0.30	0.11
UBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00	0.03	0.01
UBUS	Natural Gas	0.02%	0.03%	0.02	0.02	19.40	0.00	0.06	0.02

Existing inYear 2045: Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo (K)	**96%**	**4%**
Passenger Vehicles	Trucks	EMFAC default
92%	8%	

Daily VMT	**1,086,259**								**lbs/day**
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	Diesel	0.35%	0.36%	0.10	3.97	0.65	0.08	0.51	0.18
All Other Buses	Natural Gas	0.01%	0.01%	0.00	0.01	0.55	0.00	0.01	0.00
LDA	Gasoline	29.09%	30.13%	1.86	13.15	295.16	1.53	10.66	3.37
LDA	Diesel	0.02%	0.02%	0.00	0.01	0.05	0.00	0.01	0.00
LDA	Electricity	4.45%	4.61%	0.00	0.00	0.00	0.00	1.32	0.38
LDA	Plug-in Hybrid	1.40%	1.45%	0.04	0.09	5.59	0.04	0.41	0.12
LDT1	Gasoline	3.56%	3.69%	0.26	1.79	39.59	0.22	1.43	0.46
LDT1	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Electricity	0.13%	0.13%	0.00	0.00	0.00	0.00	0.04	0.01
LDT1	Plug-in Hybrid	0.09%	0.09%	0.00	0.01	0.35	0.00	0.03	0.01
LDT2	Gasoline	30.93%	32.04%	2.86	16.67	381.76	1.96	12.40	3.96
LDT2	Diesel	0.12%	0.12%	0.03	0.08	0.36	0.01	0.06	0.02
LDT2	Electricity	0.97%	1.01%	0.00	0.00	0.00	0.00	0.29	0.08
LDT2	Plug-in Hybrid	0.85%	0.88%	0.02	0.05	3.40	0.02	0.25	0.07
LHD1	Gasoline	1.37%	0.77%	0.12	0.51	19.58	0.24	2.87	1.00
LHD1	Diesel	0.86%	0.48%	1.74	4.36	4.37	0.12	2.21	0.97
LHD1	Electricity	1.83%	1.03%	0.00	0.00	0.00	0.00	2.06	0.69
LHD2	Gasoline	0.16%	0.09%	0.01	0.07	2.23	0.03	0.37	0.13
LHD2	Diesel	0.40%	0.22%	0.95	2.55	2.41	0.06	1.18	0.52
LHD2	Electricity	0.44%	0.25%	0.00	0.00	0.00	0.00	0.57	0.19
MCY	Gasoline	0.48%	0.49%	8.46	5.21	106.39	0.02	0.21	0.08
MDV	Gasoline	17.99%	18.63%	1.74	10.12	228.17	1.38	7.26	2.32
MDV	Diesel	0.19%	0.20%	0.02	0.04	0.62	0.01	0.08	0.03
MDV	Electricity	0.88%	0.91%	0.00	0.00	0.00	0.00	0.26	0.07
MDV	Plug-in Hybrid	0.55%	0.57%	0.01	0.03	2.18	0.01	0.16	0.05
MH	Gasoline	0.05%	0.05%	0.01	0.25	0.20	0.02	0.07	0.03
MH	Diesel	0.03%	0.03%	0.05	1.63	0.15	0.01	0.05	0.02
Motor Coach	Diesel	0.05%	0.06%	0.01	1.19	0.05	0.02	0.15	0.07
OBUS	Gasoline	0.02%	0.03%	0.01	0.12	0.15	0.01	0.03	0.01
OBUS	Electricity	0.03%	0.03%	0.00	0.00	0.00	0.00	0.02	0.01
PTO	Diesel	0.02%	0.01%	0.01	1.16	0.08	0.01	0.00	0.00
PTO	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	0.00	0.04	0.09	0.00	0.03	0.01
SBUS	Diesel	0.01%	0.01%	0.00	0.10	0.01	0.00	0.02	0.01
SBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00	0.02	0.01
SBUS	Natural Gas	0.00%	0.00%	0.00	0.00	0.12	0.00	0.00	0.00
T6 CAIRP Class 4	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 7	Diesel	0.02%	0.01%	0.00	0.07	0.01	0.00	0.02	0.01
T6 CAIRP Class 7	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Diesel	0.04%	0.02%	0.01	0.37	0.05	0.01	0.06	0.02
T6 Instate Delivery Class 4	Electricity	0.05%	0.03%	0.00	0.00	0.00	0.00	0.04	0.01
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.05	0.00	0.00	0.00
T6 Instate Delivery Class 5	Diesel	0.03%	0.02%	0.01	0.30	0.04	0.01	0.05	0.02
T6 Instate Delivery Class 5	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00	0.03	0.01
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.04	0.00	0.00	0.00
T6 Instate Delivery Class 6	Diesel	0.07%	0.04%	0.01	0.63	0.09	0.02	0.11	0.04
T6 Instate Delivery Class 6	Electricity	0.08%	0.04%	0.00	0.00	0.00	0.00	0.07	0.02
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.09	0.00	0.00	0.00
T6 Instate Delivery Class 7	Diesel	0.04%	0.02%	0.01	0.56	0.06	0.01	0.06	0.02
T6 Instate Delivery Class 7	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.02	0.01
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.07	0.00	0.00	0.00
T6 Instate Other Class 4	Diesel	0.06%	0.03%	0.01	0.37	0.06	0.01	0.08	0.03
T6 Instate Other Class 4	Electricity	0.06%	0.04%	0.00	0.00	0.00	0.00	0.05	0.02
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.05	0.00	0.00	0.00
T6 Instate Other Class 5	Diesel	0.15%	0.08%	0.02	0.94	0.15	0.03	0.21	0.08
T6 Instate Other Class 5	Electricity	0.17%	0.09%	0.00	0.00	0.00	0.00	0.14	0.04
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.13	0.00	0.00	0.00

Existing inYear 2045: Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo (K)	**96%**	**4%**
Passenger Vehicles	Trucks	EMFAC default
92%	8%	

Daily VMT	**1,086,259**								**lbs/day**
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T6 Instate Other Class 6	Diesel	0.09%	0.05%	0.01	0.60	0.09	0.02	0.13	0.05
T6 Instate Other Class 6	Electricity	0.10%	0.06%	0.00	0.00	0.00	0.00	0.09	0.03
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.08	0.00	0.00	0.00
T6 Instate Other Class 7	Diesel	0.05%	0.03%	0.01	0.58	0.07	0.01	0.08	0.03
T6 Instate Other Class 7	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00	0.03	0.01
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.08	0.00	0.00	0.00
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	0.00	0.25	0.03	0.00	0.03	0.01
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.03	0.00	0.00	0.00
T6 OOS Class 4	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 OOS Class 7	Diesel	0.01%	0.01%	0.00	0.08	0.01	0.00	0.02	0.01
T6 Public Class 4	Diesel	0.00%	0.00%	0.00	0.05	0.01	0.00	0.01	0.00
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00
T6 Public Class 5	Diesel	0.01%	0.01%	0.00	0.15	0.02	0.00	0.02	0.01
T6 Public Class 5	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.07	0.00	0.00	0.00
T6 Public Class 6	Diesel	0.01%	0.00%	0.00	0.09	0.01	0.00	0.01	0.00
T6 Public Class 6	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.04	0.00	0.00	0.00
T6 Public Class 7	Diesel	0.02%	0.01%	0.01	0.22	0.03	0.00	0.03	0.01
T6 Public Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.11	0.00	0.00	0.00
T6 Utility Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	Gasoline	0.14%	0.08%	0.04	0.23	0.61	0.05	0.20	0.07
T6TS	Electricity	0.16%	0.09%	0.00	0.00	0.00	0.00	0.13	0.04
T7 CAIRP Class 8	Diesel	0.11%	0.06%	0.03	3.02	0.10	0.03	0.37	0.17
T7 CAIRP Class 8	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.06	0.02
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T7 NNOOS Class 8	Diesel	0.16%	0.09%	0.04	5.10	0.14	0.04	0.57	0.25
T7 NOOS Class 8	Diesel	0.06%	0.03%	0.02	1.91	0.05	0.02	0.21	0.09
T7 Other Port Class 8	Diesel	0.01%	0.01%	0.00	0.30	0.02	0.00	0.04	0.01
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T7 POAK Class 8	Diesel	0.03%	0.02%	0.01	1.07	0.05	0.01	0.12	0.05
T7 POAK Class 8	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.02	0.00
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T7 Public Class 8	Diesel	0.05%	0.03%	0.03	2.29	0.17	0.02	0.18	0.06
T7 Public Class 8	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.07	0.02
T7 Public Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.07	0.00	0.00	0.00
T7 Single Concrete/Transit Mix	Diesel	0.01%	0.00%	0.00	0.16	0.01	0.00	0.03	0.01
T7 Single Concrete/Transit Mix	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.02	0.01
T7 Single Concrete/Transit Mix	Natural Gas	0.00%	0.00%	0.00	0.00	0.05	0.00	0.00	0.00
T7 Single Dump Class 8	Diesel	0.03%	0.02%	0.01	0.82	0.04	0.01	0.11	0.04
T7 Single Dump Class 8	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.05	0.02
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	0.00	0.01	0.21	0.00	0.01	0.00
T7 Single Other Class 8	Diesel	0.05%	0.03%	0.01	1.26	0.06	0.02	0.16	0.06
T7 Single Other Class 8	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00	0.08	0.02
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	0.00	0.02	0.33	0.00	0.01	0.00
T7 SWCV Class 8	Diesel	0.01%	0.00%	0.01	1.16	0.02	0.01	0.05	0.02

Existing inYear 2045: Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo (K)	**96%**	**4%**
Passenger Vehicles	Trucks	EMFAC default
92%	8%	

Daily VMT	**1,086,259**								**lbs/day**
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T7 SWCV Class 8	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.11	0.04
T7 SWCV Class 8	Natural Gas	0.05%	0.03%	0.02	0.39	12.22	0.00	0.28	0.09
T7 Tractor Class 8	Diesel	0.10%	0.05%	0.02	2.72	0.11	0.03	0.33	0.14
T7 Tractor Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.04	0.01
T7 Tractor Class 8	Natural Gas	0.01%	0.00%	0.00	0.04	0.79	0.00	0.02	0.01
T7 Utility Class 8	Diesel	0.00%	0.00%	0.00	0.02	0.00	0.00	0.00	0.00
T7 Utility Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	Gasoline	0.00%	0.00%	0.01	0.03	0.38	0.00	0.00	0.00
T7IS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	Gasoline	0.02%	0.02%	0.00	0.01	0.28	0.00	0.05	0.02
UBUS	Diesel	0.16%	0.16%	0.00	0.00	0.00	0.00	0.33	0.10

Year 2045: GP 2045 Update Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo (K)	**97%**	**3%**

Passenger Vehicles	Trucks	EMFAC default
92%	8%	

Daily VMT	**1,335,160**					**lbs/day**			
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
All Other Buses	Diesel	0.35%	0.36%	0.12	4.88	0.80	0.10	0.63	0.23
All Other Buses	Natural Gas	0.01%	0.01%	0.00	0.02	0.68	0.00	0.01	0.00
LDA	Gasoline	29.09%	30.42%	2.29	16.16	362.79	1.88	13.11	4.14
LDA	Diesel	0.02%	0.02%	0.00	0.01	0.06	0.00	0.01	0.00
LDA	Electricity	4.45%	4.65%	0.00	0.00	0.00	0.00	1.62	0.46
LDA	Plug-in Hybrid	1.40%	1.46%	0.05	0.11	6.87	0.05	0.50	0.15
LDT1	Gasoline	3.56%	3.73%	0.32	2.21	48.67	0.27	1.76	0.56
LDT1	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Electricity	0.13%	0.13%	0.00	0.00	0.00	0.00	0.05	0.01
LDT1	Plug-in Hybrid	0.09%	0.09%	0.00	0.01	0.42	0.00	0.03	0.01
LDT2	Gasoline	30.93%	32.35%	3.52	20.50	469.24	2.41	15.24	4.87
LDT2	Diesel	0.12%	0.12%	0.04	0.09	0.44	0.01	0.07	0.03
LDT2	Electricity	0.97%	1.02%	0.00	0.00	0.00	0.00	0.35	0.10
LDT2	Plug-in Hybrid	0.85%	0.89%	0.03	0.07	4.18	0.03	0.30	0.09
LHD1	Gasoline	1.37%	0.60%	0.15	0.62	24.07	0.30	3.52	1.23
LHD1	Diesel	0.86%	0.38%	2.14	5.36	5.37	0.14	2.72	1.19
LHD1	Electricity	1.83%	0.80%	0.00	0.00	0.00	0.00	2.54	0.84
LHD2	Gasoline	0.16%	0.07%	0.02	0.09	2.75	0.04	0.46	0.16
LHD2	Diesel	0.40%	0.17%	1.17	3.13	2.96	0.08	1.45	0.64
LHD2	Electricity	0.44%	0.19%	0.00	0.00	0.00	0.00	0.70	0.23
MCY	Gasoline	0.48%	0.50%	10.40	6.40	130.76	0.03	0.25	0.10
MDV	Gasoline	17.99%	18.82%	2.13	12.44	280.45	1.70	8.92	2.85
MDV	Diesel	0.19%	0.20%	0.02	0.05	0.76	0.02	0.10	0.03
MDV	Electricity	0.88%	0.92%	0.00	0.00	0.00	0.00	0.32	0.09
MDV	Plug-in Hybrid	0.55%	0.57%	0.02	0.04	2.67	0.02	0.20	0.06
MH	Gasoline	0.05%	0.05%	0.02	0.30	0.24	0.03	0.09	0.03
MH	Diesel	0.03%	0.03%	0.07	2.00	0.19	0.01	0.06	0.03
Motor Coach	Diesel	0.05%	0.06%	0.02	1.46	0.06	0.02	0.18	0.08
OBUS	Gasoline	0.02%	0.03%	0.01	0.14	0.19	0.01	0.04	0.01
OBUS	Electricity	0.03%	0.03%	0.00	0.00	0.00	0.00	0.03	0.01
PTO	Diesel	0.02%	0.01%	0.01	1.42	0.10	0.01	0.00	0.00
PTO	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	0.00	0.05	0.11	0.00	0.03	0.01
SBUS	Diesel	0.01%	0.01%	0.00	0.12	0.02	0.00	0.02	0.01
SBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00	0.02	0.01
SBUS	Natural Gas	0.00%	0.00%	0.00	0.01	0.15	0.00	0.00	0.00
T6 CAIRP Class 4	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 CAIRP Class 7	Diesel	0.02%	0.01%	0.00	0.09	0.01	0.00	0.03	0.01
T6 CAIRP Class 7	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Diesel	0.04%	0.02%	0.01	0.45	0.07	0.01	0.08	0.03
T6 Instate Delivery Class 4	Electricity	0.05%	0.02%	0.00	0.00	0.00	0.00	0.05	0.02
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.06	0.00	0.00	0.00
T6 Instate Delivery Class 5	Diesel	0.03%	0.02%	0.01	0.37	0.05	0.01	0.06	0.02
T6 Instate Delivery Class 5	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00	0.04	0.01
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.05	0.00	0.00	0.00
T6 Instate Delivery Class 6	Diesel	0.07%	0.03%	0.01	0.77	0.11	0.02	0.13	0.05
T6 Instate Delivery Class 6	Electricity	0.08%	0.03%	0.00	0.00	0.00	0.00	0.08	0.03
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.11	0.00	0.00	0.00
T6 Instate Delivery Class 7	Diesel	0.04%	0.02%	0.01	0.69	0.08	0.01	0.07	0.02
T6 Instate Delivery Class 7	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.02	0.01
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.09	0.00	0.00	0.00
T6 Instate Other Class 4	Diesel	0.06%	0.02%	0.01	0.46	0.07	0.02	0.10	0.04
T6 Instate Other Class 4	Electricity	0.06%	0.03%	0.00	0.00	0.00	0.00	0.07	0.02
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.06	0.00	0.00	0.00
T6 Instate Other Class 5	Diesel	0.15%	0.06%	0.02	1.16	0.18	0.04	0.26	0.09
T6 Instate Other Class 5	Electricity	0.17%	0.07%	0.00	0.00	0.00	0.00	0.17	0.05
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.15	0.00	0.00	0.00

Year 2045: GP 2045 Update Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks
Fleet Mix - San Mateo (K)	**97%**	**3%**

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Daily VMT	**1,335,160**					**lbs/day**			
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T6 Instate Other Class 6	Diesel	0.09%	0.04%	0.01	0.74	0.12	0.03	0.16	0.06
T6 Instate Other Class 6	Electricity	0.10%	0.05%	0.00	0.00	0.00	0.00	0.11	0.03
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.10	0.00	0.00	0.00
T6 Instate Other Class 7	Diesel	0.05%	0.02%	0.01	0.72	0.08	0.02	0.10	0.04
T6 Instate Other Class 7	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00	0.04	0.01
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.09	0.00	0.00	0.00
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	0.00	0.30	0.03	0.01	0.04	0.01
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.03	0.00	0.00	0.00
T6 OOS Class 4	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 OOS Class 6	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 OOS Class 7	Diesel	0.01%	0.01%	0.00	0.09	0.01	0.00	0.02	0.01
T6 Public Class 4	Diesel	0.00%	0.00%	0.00	0.06	0.01	0.00	0.01	0.00
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00
T6 Public Class 5	Diesel	0.01%	0.01%	0.00	0.19	0.02	0.00	0.02	0.01
T6 Public Class 5	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.08	0.00	0.00	0.00
T6 Public Class 6	Diesel	0.01%	0.00%	0.00	0.11	0.01	0.00	0.01	0.00
T6 Public Class 6	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.04	0.00	0.00	0.00
T6 Public Class 7	Diesel	0.02%	0.01%	0.01	0.28	0.03	0.01	0.04	0.01
T6 Public Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.02	0.00
T6 Public Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.14	0.00	0.00	0.00
T6 Utility Class 5	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6 Utility Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T6TS	Gasoline	0.14%	0.06%	0.05	0.28	0.75	0.06	0.24	0.08
T6TS	Electricity	0.16%	0.07%	0.00	0.00	0.00	0.00	0.16	0.05
T7 CAIRP Class 8	Diesel	0.11%	0.05%	0.04	3.71	0.12	0.04	0.46	0.20
T7 CAIRP Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.07	0.02
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.02	0.00	0.00	0.00
T7 NNOOS Class 8	Diesel	0.16%	0.07%	0.05	6.27	0.18	0.05	0.70	0.31
T7 NOOS Class 8	Diesel	0.06%	0.03%	0.02	2.34	0.07	0.02	0.26	0.12
T7 Other Port Class 8	Diesel	0.01%	0.00%	0.00	0.36	0.02	0.00	0.04	0.02
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T7 POAK Class 8	Diesel	0.03%	0.02%	0.01	1.31	0.07	0.01	0.15	0.06
T7 POAK Class 8	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.02	0.01
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T7 Public Class 8	Diesel	0.05%	0.02%	0.04	2.81	0.21	0.02	0.22	0.08
T7 Public Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.08	0.03
T7 Public Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.09	0.00	0.00	0.00
T7 Single Concrete/Transit Mix	Diesel	0.01%	0.00%	0.00	0.20	0.01	0.00	0.03	0.01
T7 Single Concrete/Transit Mix	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.03	0.01
T7 Single Concrete/Transit Mix	Natural Gas	0.00%	0.00%	0.00	0.00	0.06	0.00	0.00	0.00
T7 Single Dump Class 8	Diesel	0.03%	0.01%	0.01	1.01	0.05	0.01	0.13	0.05
T7 Single Dump Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.07	0.02
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	0.00	0.01	0.25	0.00	0.01	0.00
T7 Single Other Class 8	Diesel	0.05%	0.02%	0.01	1.54	0.08	0.02	0.19	0.08
T7 Single Other Class 8	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00	0.10	0.03
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	0.00	0.02	0.41	0.00	0.01	0.00
T7 SWCV Class 8	Diesel	0.01%	0.00%	0.01	1.43	0.03	0.01	0.06	0.02

Year 2045: GP 2045 Update Criteria Air Pollutants

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

[1.] Based on data provided Kittelson & Associates Inc., 2024.

	Pass. Vehicles	Trucks	
Fleet Mix - San Mateo (K)	**97%**	**3%**	
Passenger Vehicles	Trucks	EMFAC default	
92%	8%		

Daily VMT	**1,335,160**					**lbs/day**			
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T7 SWCV Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.14	0.04
T7 SWCV Class 8	Natural Gas	0.05%	0.02%	0.02	0.48	15.02	0.00	0.34	0.12
T7 Tractor Class 8	Diesel	0.10%	0.04%	0.03	3.34	0.14	0.03	0.41	0.17
T7 Tractor Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.05	0.01
T7 Tractor Class 8	Natural Gas	0.01%	0.00%	0.00	0.04	0.98	0.00	0.03	0.01
T7 Utility Class 8	Diesel	0.00%	0.00%	0.00	0.03	0.00	0.00	0.00	0.00
T7 Utility Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
T7IS	Gasoline	0.00%	0.00%	0.01	0.03	0.46	0.00	0.00	0.00
T7IS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
UBUS	Gasoline	0.02%	0.02%	0.00	0.01	0.35	0.00	0.06	0.02
UBUS	Electricity	0.16%	0.16%	0.00	0.00	0.00	0.00	0.40	0.13
		100%	100%	22.97	109.50	1366.30	7.62	61.58	20.62

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC202x 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.

		g/mile																2.205E-03
Vehicle Category	Fuel	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUNEX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	VMT	% of VMT
All Other Buses	Diesel	0.02092218	0.70613203	0.09671568	0.01103962	0.00700185	0.012	0.0461373	6.51E-02	0.00669895	0.003	0.01614806	2.58E-02	1165.82047	0.00097178	0.18367549	65,588	0.356%
All Other Buses	Natural Gas	0.01123623	0.19637353	3.24520009	0	0.00112096	0.012	0.0461373	5.93E-02	0.00103068	0.003	0.01614806	2.02E-02	1012.33076	0.78640911	0.20637025	493	0.003%
LDA	Gasoline	0.00784709	0.0380865	0.63777481	0.00267893	0.00126335	0.008	0.0067093	1.60E-02	0.0011616	0.002	0.00234825	5.51E-03	270.981297	0.00203807	0.00423553	7,454,000	40.412%
LDA	Diesel	0.02269578	0.18859334	0.30414418	0.00220047	0.01328481	0.008	0.00686916	2.82E-02	0.01271012	0.002	0.00240421	1.71E-02	232.22712	0.00105418	0.03658748	17,557	0.095%
LDA	Electricity	0	0	0	0	0	0.008	0.00437149	1.24E-02	0	0.002	0.00153002	3.53E-03	0	0	0	689,392	3.738%
LDA	Plug-in Hybrid	0.00131321	0.0031245	0.19605499	0.00129759	0.00062804	0.008	0.0037831	1.24E-02	0.00057746	0.002	0.00132409	3.90E-03	131.254691	0.00040245	0.0005344	275,231	1.492%
LDT1	Gasoline	0.02094344	0.101175	1.098083	0.00313929	0.00166467	0.008	0.00806585	1.77E-02	0.00153062	0.002	0.00282305	6.35E-03	317.548623	0.00474116	0.00763537	728,709	3.951%
LDT1	Diesel	0.31355889	1.6560349	1.66813196	0.00395513	0.24718636	0.008	0.00949489	2.65E-01	0.23649318	0.002	0.00332321	2.42E-01	417.405317	0.01456421	0.06576238	88	0.000%
LDT1	Electricity	0	0	0	0	0	0.008	0.00438051	1.24E-02	0	0.002	0.00153318	3.53E-03	0	0	0	3,278	0.018%
LDT1	Plug-in Hybrid	0.00120587	0.00286911	0.18013126	0.00119172	0.00039614	0.008	0.00382273	1.22E-02	0.00036424	0.002	0.00133796	3.70E-03	120.546448	0.00036964	0.00049093	2,175	0.012%
LDT2	Gasoline	0.0081591	0.04783698	0.65081957	0.00322682	0.00125595	0.008	0.00776796	1.70E-02	0.0011548	0.002	0.00271879	5.87E-03	326.40227	0.00215446	0.00461292	4,914,901	26.646%
LDT2	Diesel	0.01254945	0.03960224	0.11935647	0.00287427	0.00472971	0.008	0.00783469	2.06E-02	0.00452511	0.002	0.00274214	9.27E-03	303.336711	0.0005829	0.04779082	18,954	0.103%
LDT2	Electricity	0	0	0	0	0	0.008	0.00435843	1.24E-02	0	0.002	0.00152545	3.53E-03	0	0	0	37,599	0.204%
LDT2	Plug-in Hybrid	0.00125715	0.0029911	0.18775121	0.00124232	0.00048432	0.008	0.00380333	1.23E-02	0.00044532	0.002	0.00133117	3.78E-03	125.664144	0.00038535	0.0005118	62,725	0.340%
LHD1	Gasoline	0.02703027	0.10805383	0.93243441	0.00827338	0.00150234	0.008	0.07800002	8.75E-02	0.00138135	0.002	0.02730001	3.07E-02	836.876644	0.00555729	0.00619736	401,258	2.175%
LHD1	Diesel	0.13222718	1.0275509	0.33151457	0.00592395	0.02557514	0.012	0.07800002	1.16E-01	0.02446877	0.003	0.02730001	5.48E-02	625.185793	0.0061417	0.09849828	191,551	1.038%
LHD1	Electricity	0	0	0	0	0	0.008	0.03900001	4.70E-02	0	0.002	0.01365	1.57E-02	0	0	0	3,531	0.019%
LHD2	Gasoline	0.02184958	0.12222832	0.81417031	0.00933776	0.00143241	0.008	0.09100003	1.00E-01	0.00131705	0.002	0.03185001	3.52E-02	944.54168	0.00477522	0.00737062	44,552	0.242%
LHD2	Diesel	0.12379374	0.75881655	0.28086325	0.00700139	0.0228956	0.012	0.09100003	1.26E-01	0.02190514	0.003	0.03185001	5.68E-02	738.892965	0.00574998	0.11641289	83,732	0.454%
LHD2	Electricity	0	0	0	0	0	0.008	0.04550001	5.35E-02	0	0.002	0.015925	1.79E-02	0	0	0	866	0.005%
MCY	Gasoline	0.93036518	0.51879252	11.0461005	0.00184795	0.00201235	0.004	0.012	1.80E-02	0.00188085	0.001	0.0042	7.08E-03	186.925611	0.14516799	0.03696945	76,675	0.416%
MDV	Gasoline	0.00994139	0.05843436	0.68617838	0.00389088	0.00125754	0.008	0.0078194	1.71E-02	0.00115627	0.002	0.00273679	5.89E-03	393.574265	0.00249247	0.00516066	2,823,183	15.306%
MDV	Diesel	0.00907404	0.03726143	0.17112637	0.00377382	0.00418234	0.008	0.00799491	2.02E-02	0.00400141	0.002	0.00279822	8.80E-03	398.271311	0.00042147	0.06274781	38,157	0.207%
MDV	Electricity	0	0	0	0	0	0.008	0.00435746	1.24E-02	0	0.002	0.00152511	3.53E-03	0	0	0	40,548	0.220%
MDV	Plug-in Hybrid	0.00126985	0.00302132	0.18962734	0.00125483	0.00055316	0.008	0.00379979	1.24E-02	0.00050861	0.002	0.00132993	3.84E-03	126.929616	0.00039062	0.00052054	35,015	0.190%
MH	Gasoline	0.049091	0.31412021	1.13779187	0.01924367	0.00176819	0.012	0.04501744	5.88E-02	0.00162578	0.003	0.0157561	2.04E-02	1946.55395	0.01173375	0.02115443	7,786	0.042%
MH	Diesel	0.09096077	3.09623268	0.28459714	0.01028846	0.05181964	0.016	0.04478528	1.13E-01	0.04957795	0.004	0.01567485	6.93E-02	1085.79508	0.00422495	0.17106746	3,694	0.020%
Motor Coach	Diesel	0.01482598	1.73473962	0.07442307	0.01678025	0.0303045	0.012	0.07409835	1.16E-01	0.02899354	0.003	0.02593442	5.79E-02	1772.04957	0.00068863	0.27918713	9,414	0.051%
OBUS	Gasoline	0.03953532	0.27668681	0.84779249	0.01703461	0.00110981	0.012	0.0447987	5.79E-02	0.00102043	0.003	0.01567955	1.97E-02	1723.10148	0.00847778	0.01600651	14,439	0.078%
OBUS	Electricity	0	0	0	0	0	0.012	0.02239935	3.44E-02	0	0.003	0.00783977	1.08E-02	0	0	0	80	0.000%
PTO	Diesel	0.02297403	3.10266037	0.26337995	0.01975705	0.00503769	0	0	5.04E-03	0.00481976	0	0	4.82E-03	2086.40909	0.00106708	0.3287146	5,213	0.028%
PTO	Electricity	0	0	0	0	0	0	0	0.00E+00	0	0	0	0.00E+00	0	0	0	16	0.000%
SBUS	Gasoline	0.09610978	0.83522335	2.46020224	0.00780444	0.00125247	0.008	0.04491714	5.42E-02	0.0011516	0.002	0.015721	1.89E-02	789.441995	0.0196299	0.03913545	3,562	0.019%
SBUS	Diesel	0.06700019	4.69671162	0.20237165	0.01083594	0.02342199	0.012	0.04491714	8.03E-02	0.02240876	0.003	0.015721	4.11E-02	1144.31097	0.00311199	0.18028666	3,777	0.020%
SBUS	Electricity	0	0	0	0	0	0.00921401	0.02245857	3.17E-02	0	0.0023035	0.0078605	1.02E-02	0	0	0	37	0.000%
SBUS	Natural Gas	0.04786946	0.53521471	11.2426416	0	0.00367426	0.012	0.04491714	6.06E-02	0.00337835	0.003	0.015721	2.21E-02	1247.35391	3.35031972	0.25428125	159	0.001%
T6 CAIRP Class 4	Diesel	0.01025204	0.43334256	0.04012321	0.01069766	0.00866156	0.012	0.04231382	6.30E-02	0.00828687	0.003	0.01480984	2.61E-02	1129.70762	0.00047618	0.1779859	130	0.001%
T6 CAIRP Class 4	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	1	0.000%
T6 CAIRP Class 5	Diesel	0.00710998	0.39771475	0.03278018	0.01069723	0.00701702	0.012	0.04231382	6.13E-02	0.00671347	0.003	0.01480984	2.45E-02	1129.66283	0.00033024	0.17797884	179	0.001%
T6 CAIRP Class 5	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	1	0.000%
T6 CAIRP Class 6	Diesel	0.00831284	0.36280794	0.03473928	0.010516	0.00746364	0.012	0.04231382	6.18E-02	0.00714077	0.003	0.01480984	2.50E-02	1110.52414	0.00038611	0.17496353	466	0.003%
T6 CAIRP Class 6	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	4	0.000%
T6 CAIRP Class 7	Diesel	0.00640652	0.41576488	0.03269801	0.0098998	0.00699858	0.012	0.04231382	6.13E-02	0.00669582	0.003	0.01480984	2.45E-02	1045.45169	0.00029757	0.16471134	2,938	0.016%
T6 CAIRP Class 7	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	11	0.000%
T6 Instate Delivery Class 4	Diesel	0.09887243	1.82481344	0.3074572	0.01117966	0.0393838	0.012	0.04756293	9.89E-02	0.03768008	0.003	0.01664703	5.73E-02	1180.60858	0.00459237	0.18600536	12,334	0.067%
T6 Instate Delivery Class 4	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	44	0.000%
T6 Instate Delivery Class 4	Natural Gas	0.01219039	0.09224995	3.74050877	0	0.00182975	0.012	0.04756293	6.14E-02	0.00168239	0.003	0.01664703	2.13E-02	1050.17731	0.85318911	0.21408552	54	0.000%
T6 Instate Delivery Class 5	Diesel	0.02651781	0.90547495	0.11590483	0.01114638	0.01063683	0.012	0.04756293	7.02E-02	0.01017669	0.003	0.01664703	2.98E-02	1177.0945	0.00123168	0.18545172	10,074	0.055%
T6 Instate Delivery Class 5	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	24	0.000%
T6 Instate Delivery Class 5	Natural Gas	0.01195957	0.11872544	3.67728698	0	0.00167755	0.012	0.04756293	6.12E-02	0.00154245	0.003	0.01664703	2.12E-02	1042.05837	0.83703467	0.21243041	35	0.000%
T6 Instate Delivery Class 6	Diesel	0.04279003	1.13877231	0.16003075	0.01111638	0.01809997	0.012	0.04756293	7.77E-02	0.01731697	0.003	0.01664703	3.70E-02	1173.92628	0.00198749	0.18495256	20,895	0.113%
T6 Instate Delivery Class 6	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	60	0.000%
T6 Instate Delivery Class 6	Natural Gas	0.01211826	0.1005238	3.72075133	0	0.00178219	0.012	0.04756293	6.13E-02	0.00163865	0.003	0.01664703	2.13E-02	1044.66099	0.84814068	0.21296098	75	0.000%
T6 Instate Delivery Class 7	Diesel	0.01134985	1.08634183	0.0931377	0.01100674	0.00349659	0.012	0.04756293	6.31E-02	0.00334533	0.003	0.01664703	2.30E-02	1162.34745	0.00052717	0.18312831	8,198	0.044%
T6 Instate Delivery Class 7	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	8	0.000%
T6 Instate Delivery Class 7	Natural Gas	0.01124602	0.20180001	3.49639502	0	0.001209	0.012	0.04756293	6.08E-02	0.00111163	0.003	0.01664703	2.08E-02	1075.84898	0.78709372	0.21931885	206	0.001%
T6 Instate Other Class 4	Diesel	0.07802633	1.74514283	0.24206665	0.01074407	0.03792172	0.012	0.04486375	9.48E-02	0.03628124	0.003	0.01570231	5.50E-02	1134.60864	0.00362412	0.17875805	16,932	0.092%
T6 Instate Other Class 4	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	44	0.000%
T6 Instate Other Class 4	Natural Gas	0.00962567	0.08165166	2.69880901	0	0.00137979	0.012	0.04486375	5.82E-02	0.00126867	0.003	0.01570231	2.00E-02	936.82437	0.67368757	0.19097778	61	0.000%
T6 Instate Other Class 5	Diesel	0.0166219	0.701921	0.077138	0.01084816	0.00846383	0.012	0.04486375	6.53E-02	0.00809769	0.003	0.01570231	2.68E-02	1145.60185	0.00077204	0.18049004	43,642	0.237%
T6 Instate Other Class 5	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	63	0.000%
T6 Instate Other Class 5	Natural Gas	0.00935005	0.10588389	2.72095162	0	0.00123533	0.012	0.04486375	5.81E-02	0.00113584	0.003	0.01570231	1.98E-02	919.217163	0.65439777	0.18738843	121	0.001%

T6 Instate Other Class 6	Diesel	0.03425769	1.02770728	0.12472095	0.01077623	0.0175341	0.012	0.04486375	7.44E-02	0.01677559	0.003	0.01570231	3.55E-02	1138.00572	0.00159118	0.17929326	27,529	0.149%
T6 Instate Other Class 6	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	68	0.000%
T6 Instate Other Class 6	Natural Gas	0.00930619	0.1097401	2.72447529	0	0.00121234	0.012	0.04486375	5.81E-02	0.0011147	0.003	0.01570231	1.98E-02	921.94605	0.65132808	0.18794473	78	0.000%
T6 Instate Other Class 7	Diesel	0.01171178	0.89664427	0.07215098	0.01058378	0.00613447	0.012	0.04486375	6.30E-02	0.0058691	0.003	0.01570231	2.46E-02	1117.68228	0.00054398	0.1760913	12,874	0.070%
T6 Instate Other Class 7	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	26	0.000%
T6 Instate Other Class 7	Natural Gas	0.00872928	0.16350954	2.80074736	0	0.00091443	0.012	0.04486375	5.78E-02	0.00084079	0.003	0.01570231	1.95E-02	928.800902	0.61095059	0.18934214	330	0.002%
T6 Instate Tractor Class 6	Diesel	0.04145581	0.92263429	0.1349743	0.01111698	0.01825618	0.012	0.04486375	7.51E-02	0.01746643	0.003	0.01570231	3.62E-02	1173.98949	0.00192551	0.18496252	539	0.003%
T6 Instate Tractor Class 6	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	1	0.000%
T6 Instate Tractor Class 6	Natural Gas	0.00915791	0.12277767	2.73638859	0	0.00113462	0.012	0.04486375	5.80E-02	0.00104324	0.003	0.01570231	1.97E-02	898.336366	0.64094966	0.18313174	1	0.000%
T6 Instate Tractor Class 7	Diesel	0.01040885	1.00673434	0.07470311	0.01009441	0.00602599	0.012	0.04486375	6.29E-02	0.00576531	0.003	0.01570231	2.45E-02	1066.00338	0.00048346	0.16794927	3,772	0.020%
T6 Instate Tractor Class 7	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	5	0.000%
T6 Instate Tractor Class 7	Natural Gas	0.00858286	0.17525895	2.80146926	0	0.00083603	0.012	0.04486375	5.77E-02	0.0007687	0.003	0.01570231	1.95E-02	926.69983	0.60070275	0.18891382	72	0.000%
T6 OOS Class 4	Diesel	0.01346778	0.50348907	0.04789567	0.01064268	0.01040146	0.012	0.04231382	6.47E-02	0.0099515	0.003	0.01480984	2.78E-02	1123.9017	0.00062554	0.17707117	73	0.000%
T6 OOS Class 5	Diesel	0.00778429	0.41387947	0.03428896	0.01065131	0.00733529	0.012	0.04231382	6.16E-02	0.00701797	0.003	0.01480984	2.48E-02	1124.81299	0.00036156	0.17721474	101	0.001%
T6 OOS Class 6	Diesel	0.01050451	0.41356229	0.04009229	0.01044373	0.0086693	0.012	0.04231382	6.30E-02	0.00829427	0.003	0.01480984	2.61E-02	1102.89234	0.00048791	0.17376114	263	0.001%
T6 OOS Class 7	Diesel	0.00639044	0.42696328	0.03286021	0.00983343	0.00704831	0.012	0.04231382	6.14E-02	0.0067434	0.003	0.01480984	2.46E-02	1038.44297	0.00029682	0.16360711	1,912	0.010%
T6 Public Class 4	Diesel	0.07501848	5.12357679	0.18146116	0.01173227	0.0253589	0.012	0.04616939	8.35E-02	0.02426189	0.003	0.01615929	4.34E-02	1238.96666	0.00348441	0.1951997	1,163	0.006%
T6 Public Class 4	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	7	0.000%
T6 Public Class 4	Natural Gas	0.01248279	0.08071619	3.05530479	0	0.00168722	0.012	0.04616939	5.99E-02	0.00155133	0.003	0.01615929	2.07E-02	1025.49463	0.87365362	0.20905379	51	0.000%
T6 Public Class 5	Diesel	0.04317123	2.45313066	0.1321637	0.01142144	0.0119271	0.012	0.04616939	7.01E-02	0.01141114	0.003	0.01615929	3.06E-02	1206.14164	0.00200519	0.19002811	3,865	0.021%
T6 Public Class 5	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	17	0.000%
T6 Public Class 5	Natural Gas	0.01216273	0.13375292	3.08387464	0	0.00143502	0.012	0.04616939	5.96E-02	0.00131944	0.003	0.01615929	2.05E-02	1041.01156	0.85125333	0.21221702	342	0.002%
T6 Public Class 6	Diesel	0.07373505	4.69315942	0.18314249	0.01160927	0.02824606	0.012	0.04616939	8.64E-02	0.02702415	0.003	0.01615929	4.62E-02	1225.97763	0.0034248	0.19315327	2,330	0.013%
T6 Public Class 6	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	12	0.000%
T6 Public Class 6	Natural Gas	0.01232463	0.10703929	3.07382611	0	0.00156199	0.012	0.04616939	5.97E-02	0.00143619	0.003	0.01615929	2.06E-02	1025.16859	0.86258476	0.20898732	112	0.001%
T6 Public Class 7	Diesel	0.08139576	5.31563775	0.18543723	0.01174898	0.03418884	0.012	0.04616939	9.24E-02	0.03270984	0.003	0.01615929	5.19E-02	1240.73079	0.00378062	0.19547764	6,330	0.034%
T6 Public Class 7	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	42	0.000%
T6 Public Class 7	Natural Gas	0.01249946	0.07818043	3.06246242	0	0.00169916	0.012	0.04616939	5.99E-02	0.00156232	0.003	0.01615929	2.07E-02	1035.5048	0.87482044	0.21109443	390	0.002%
T6 Utility Class 5	Diesel	0.0078058	0.50475978	0.05118872	0.01049576	0.00314232	0.012	0.0454967	6.06E-02	0.00300639	0.003	0.01592385	2.19E-02	1108.38676	0.00036256	0.17462678	337	0.002%
T6 Utility Class 5	Electricity	0	0	0	0	0	0.012	0.02274835	3.47E-02	0	0.003	0.00796192	1.10E-02	0	0	0	3	0.000%
T6 Utility Class 5	Natural Gas	0.00991781	0.20035788	2.84613486	0	0.00087615	0.012	0.0454967	5.84E-02	0.00080559	0.003	0.01592385	1.97E-02	985.75949	0.6941346	0.20095352	4	0.000%
T6 Utility Class 6	Diesel	0.00696904	0.51139519	0.05109992	0.010456	0.00301703	0.012	0.0454967	6.05E-02	0.00288652	0.003	0.01592385	2.18E-02	1104.1883	0.00032369	0.17396532	64	0.000%
T6 Utility Class 6	Electricity	0	0	0	0	0	0.012	0.02274835	3.47E-02	0	0.003	0.00796192	1.10E-02	0	0	0	1	0.000%
T6 Utility Class 6	Natural Gas	0.00993067	0.1988156	2.84507195	0	0.00088416	0.012	0.0454967	5.84E-02	0.00081296	0.003	0.01592385	1.97E-02	979.669749	0.69503432	0.19971209	1	0.000%
T6 Utility Class 7	Diesel	0.0057524	0.42781172	0.04569146	0.01046457	0.00270232	0.012	0.0454967	6.02E-02	0.00258542	0.003	0.01592385	2.15E-02	1105.09277	0.00026718	0.17410782	88	0.000%
T6 Utility Class 7	Electricity	0	0	0	0	0	0.012	0.02274835	3.47E-02	0	0.003	0.00796192	1.10E-02	0	0	0	1	0.000%
T6 Utility Class 7	Natural Gas	0.00983411	0.21040006	2.85305576	0	0.00082395	0.012	0.0454967	5.83E-02	0.0007576	0.003	0.01592385	1.97E-02	984.750246	0.68827628	0.20074778	2	0.000%
T6TS	Gasoline	0.06176647	0.3927064	1.27408259	0.01718404	0.00148087	0.012	0.04501744	5.85E-02	0.0013616	0.003	0.0157561	2.01E-02	1738.21699	0.01266762	0.02019092	46,997	0.255%
T6TS	Electricity	0	0	0	0	0	0.012	0.02250872	3.45E-02	0	0.003	0.00787805	1.09E-02	0	0	0	429	0.002%
T7 CAIRP Class 8	Diesel	0.01297662	1.55575971	0.05872219	0.01460206	0.03267654	0.03600001	0.07409835	1.43E-01	0.03126297	0.009	0.02593442	6.62E-02	1542.02551	0.00060273	0.24294675	17,134	0.093%
T7 CAIRP Class 8	Electricity	0	0	0	0	0	0.03600001	0.03704917	7.30E-02	0	0.009	0.01296721	2.20E-02	0	0	0	92	0.001%
T7 CAIRP Class 8	Natural Gas	0.013265	0.21784377	3.87351086	0	0.00183204	0.03600001	0.07409835	1.12E-01	0.0016845	0.009	0.02593442	3.66E-02	1140.19467	0.92839958	0.23243614	39	0.000%
T7 NNOOS Class 8	Diesel	0.0124209	1.49310907	0.05140976	0.01442888	0.03093801	0.03600001	0.07409835	1.41E-01	0.02959965	0.009	0.02593442	6.45E-02	1523.73675	0.00057692	0.24006535	20,499	0.111%
T7 NOOS Class 8	Diesel	0.01324794	1.58816128	0.05945705	0.01450251	0.03344495	0.03600001	0.07409835	1.44E-01	0.03199814	0.009	0.02593442	6.69E-02	1531.51276	0.00061533	0.24129046	7,449	0.040%
T7 Other Port Class 8	Diesel	0.01186819	1.67320182	0.10522671	0.01574905	0.02028279	0.03600001	0.0852388	1.42E-01	0.01940537	0.009	0.02983358	5.82E-02	1663.15122	0.00055125	0.26203015	1,626	0.009%
T7 Other Port Class 8	Electricity	0	0	0	0	0	0.03600001	0.0426194	7.86E-02	0	0.009	0.01491679	2.39E-02	0	0	0	3	0.000%
T7 POAK Class 8	Diesel	0.01230849	1.75689311	0.11033136	0.0156888	0.02020358	0.03600001	0.0852388	1.41E-01	0.01932958	0.009	0.02983358	5.82E-02	1656.78841	0.0005717	0.26102769	5,636	0.031%
T7 POAK Class 8	Electricity	0	0	0	0	0	0.03600001	0.0426194	7.86E-02	0	0.009	0.01491679	2.39E-02	0	0	0	10	0.000%
T7 POAK Class 8	Natural Gas	0.0167608	0.17252782	4.97691357	0	0.00252429	0.03600001	0.0852388	1.24E-01	0.00232099	0.009	0.02983358	4.12E-02	1211.68646	1.17306642	0.24701021	3	0.000%
T7 Public Class 8	Diesel	0.10494703	7.64991491	0.35230006	0.01767539	0.04520268	0.03600001	0.11169365	1.93E-01	0.04324723	0.009	0.03909278	9.13E-02	1866.57913	0.00487452	0.2940803	14,459	0.078%
T7 Public Class 8	Electricity	0	0	0	0	0	0.03600001	0.04920819	8.52E-02	0	0.009	0.01722287	2.62E-02	0	0	0	71	0.000%
T7 Public Class 8	Natural Gas	0.02528771	0.51791291	9.39481776	0	0.00286157	0.03600001	0.10269654	1.42E-01	0.00263111	0.009	0.03594379	4.76E-02	1584.99262	1.76985344	0.32311111	78	0.000%
T7 Single Concrete/Transit Mix Cla	Diesel	0.00859632	0.97798595	0.05442993	0.01564224	0.01495821	0.03600001	0.08035483	1.31E-01	0.01431112	0.009	0.02812419	5.14E-02	1651.87167	0.00039928	0.26025305	3,436	0.019%
T7 Single Concrete/Transit Mix Cla	Electricity	0	0	0	0	0	0.03600001	0.04017726	7.62E-02	0	0.009	0.01406204	2.31E-02	0	0	0	29	0.000%
T7 Single Concrete/Transit Mix Cla	Natural Gas	0.0152032	0.27090667	5.46593037	0	0.00202171	0.03600001	0.0803546	1.18E-01	0.00185889	0.009	0.02812411	3.90E-02	1213.39182	1.06405144	0.24735786	207	0.001%
T7 Single Dump Class 8	Diesel	0.0151441	1.53429576	0.09562574	0.01590068	0.01861769	0.03600001	0.08037491	1.35E-01	0.0178123	0.009	0.02813122	5.49E-02	1679.16367	0.0007034	0.26455292	10,438	0.057%
T7 Single Dump Class 8	Electricity	0	0	0	0	0	0.03600001	0.04017726	7.62E-02	0	0.009	0.01406204	2.31E-02	0	0	0	26	0.000%
T7 Single Dump Class 8	Natural Gas	0.01513475	0.42117596	7.56858899	0	0.00168094	0.03600001	0.08035549	1.18E-01	0.00154556	0.009	0.02812442	3.87E-02	1297.92623	1.05926071	0.26459075	572	0.003%
T7 Single Other Class 8	Diesel	0.01438279	1.41913664	0.08720757	0.01576587	0.01798822	0.03600001	0.08036887	1.34E-01	0.01721006	0.009	0.02812911	5.43E-02	1664.9278	0.00066804	0.26231005	10,864	0.059%
T7 Single Other Class 8	Electricity	0	0	0	0	0	0.03600001	0.04017726	7.62E-02	0	0.009	0.01406204	2.31E-02	0	0	0	27	0.000%
T7 Single Other Class 8	Natural Gas	0.01515806	0.38333625	6.95925643	0	0.00177664	0.03600001	0.08035558	1.18E-01	0.00163356	0.009	0.02812445	3.88E-02	1269.3992	1.06089212	0.25877533	737	0.004%
T7 SWCV Class 8	Diesel	0.04561686	7.42004738	0.1239452	0.03848791	0.01058908	0.03600001	0.21000006	2.57E-01	0.010131	0.009	0.07350002	9.26E-02	4064.44975	0.00211879	0.64035571	8,512	0.046%
T7 SWCV Class 8	Electricity	0	0	0	0	0	0.03600001	0.10500003	1.41E-01	0	0.009	0.03675001	4.58E-02	0	0	0	49	0.000%
T7 SWCV Class 8	Natural Gas	0.09346682	1.97002427	20.6697571	0	0.00208814	0.03600001	0.21000006	2.48E-01	0.00191997	0.009	0.07350002	8.44E-02	1616.65676	4.00041412	0.32956606	7,712	0.042%
T7 Tractor Class 8	Diesel	0.01530867	1.63484864	0.0834129	0.01469687	0.0230175	0.03600001	0.07837844	1.37E-01	0.02202177	0.009	0.02743245	5.85E-02	1552.03774	0.00071105	0.24452418	13,952	0.076%
T7 Tractor Class 8	Electricity	0	0	0	0	0	0.03600001	0.0391874	7.52E-02	0	0.009	0.01371559	2.27E-02	0	0	0	38	0.000%
T7 Tractor Class 8	Natural Gas	0.01430573	0.47653885	8.42103859	0	0.00144247	0.03600001	0.07837481	1.16E-01	0.00132629	0.009	0.02743118	3.78E-02	1196.47334	1.00123871	0.24390892	1,838	0.010%
T7 Utility Class 8	Diesel	0.01287427	1.30873027	0.13439946	0.01623614	0.00721572	0.03600001	0.09410702	1.37E-01	0.00690357	0.009	0.03293746	4.88E-02	1714.58997	0.00059798	0.27013435	271	0.001%
T7 Utility Class 8	Electricity	0	0	0	0	0	0.03600001	0.04705351	8.31E-02	0	0.009	0.01646873	2.55E-02	0	0	0	1	0.000%
T7IS	Gasoline	0.58001061	4.04818799	33.7659524	0.02217054	0.0015357	0.02000001	0.08882034	1.10E-01	0.00141202	0.005	0.03108712	3.75E-02	2242.61572	0.11492733	0.15140901	570	0.003%
T7IS	Electricity	0	0	0	0	0	0.02000001	0.04394427	6.39E-02	0	0.005	0.0153805	2.04E-02	0	0	0	1	0.000%
UBUS	Gasoline	0.00611665	0.03623499	0.55667515	0.00990892	0.00117824	0.00829031	0.09237901	1.02E-01	0.00108335	0.00207258	0.03233265	3.55E-02	1002.31659	0.00210972	0.00485257	4,178	0.023%
UBUS	Diesel	0.06771888	0.37556533	0.07719525	0.01159543	0.00713583	0.03238802	0.11000003	1.50E-01	0.00682714	0.00809701	0.03850001	5.34E-02	1223.72691	0.00314537	0.19279867	21,478	0.116%
UBUS	Electricity	0	0	0	0	0	0.02946566	0.05500002	8.45E-02	0	0.00736641	0.01925001	2.66E-02	0	0	0	3,851	0.021%

UBUS	Natural Gas	0.0585885	0.05542447	46.5063262	0	0.00028462	0.03096344	0.11000003	1.41E-01	0.00027231	0.00774086	0.03850001	4.65E-02	1262.65644	4.10053116	0.25740078	4,515	0.024%
																	18,445,170	100.000%

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC202x Categori
Units: miles/day for CVMT and EVMT, trips/

		lbs/Mile															1.0E-06
Vehicle Category	Fuel	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUNEX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX	
All Other Buses	Diesel	4.613E-05	1.557E-03	2.132E-04	2.434E-05	1.544E-05	2.646E-05	1.017E-04	1.436E-04	1.477E-05	6.614E-06	3.560E-05	5.698E-05	2.570E+00	2.142E-06	4.049E-04	
All Other Buses	Natural Gas	2.477E-05	4.329E-04	7.154E-03	0.000E+00	2.471E-06	2.646E-05	1.017E-04	1.306E-04	2.272E-06	6.614E-06	3.560E-05	4.449E-05	2.232E+00	1.734E-03	4.550E-04	
LDA	Gasoline	1.730E-05	8.397E-05	1.406E-03	5.906E-06	2.785E-06	1.764E-05	1.479E-05	3.521E-05	2.561E-06	4.409E-06	5.177E-06	1.215E-05	5.974E-01	4.493E-06	9.338E-06	
LDA	Diesel	5.004E-05	4.158E-04	6.705E-04	4.851E-06	2.929E-05	1.764E-05	1.514E-05	6.207E-05	2.802E-05	4.409E-06	5.300E-06	3.773E-05	5.120E-01	2.324E-06	8.066E-05	
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.637E-06	2.727E-05	0.000E+00	4.409E-06	3.373E-06	7.782E-06	0.000E+00	0.000E+00	0.000E+00	
LDA	Plug-in Hybrid	2.895E-06	6.888E-06	4.322E-04	2.861E-06	1.385E-06	1.764E-05	8.340E-06	2.736E-05	1.273E-06	4.409E-06	2.919E-06	8.601E-06	2.894E-01	8.873E-07	1.178E-06	
LDT1	Gasoline	4.617E-05	2.231E-04	2.421E-03	6.921E-06	3.670E-06	1.764E-05	1.778E-05	3.909E-05	3.374E-06	4.409E-06	6.224E-06	1.401E-05	7.001E-01	1.045E-05	1.683E-05	
LDT1	Diesel	6.913E-04	3.651E-03	3.678E-03	8.719E-06	5.449E-04	1.764E-05	2.093E-05	5.835E-04	5.214E-04	4.409E-06	7.326E-06	5.331E-04	9.202E-01	3.211E-05	1.450E-04	
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.657E-06	2.729E-05	0.000E+00	4.409E-06	3.380E-06	7.789E-06	0.000E+00	0.000E+00	0.000E+00	
LDT1	Plug-in Hybrid	2.658E-06	6.325E-06	3.971E-04	2.627E-06	8.733E-07	1.764E-05	8.428E-06	2.694E-05	8.030E-07	4.409E-06	2.950E-06	8.162E-06	2.658E-01	8.149E-07	1.082E-06	
LDT2	Gasoline	1.799E-05	1.055E-04	1.435E-03	7.114E-06	2.769E-06	1.764E-05	1.713E-05	3.753E-05	2.546E-06	4.409E-06	5.994E-06	1.295E-05	7.196E-01	4.750E-06	1.017E-05	
LDT2	Diesel	2.767E-05	8.731E-05	2.631E-04	6.337E-06	1.043E-05	1.764E-05	1.727E-05	4.534E-05	9.976E-06	4.409E-06	6.045E-06	2.043E-05	6.687E-01	1.285E-06	1.054E-04	
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.609E-06	2.725E-05	0.000E+00	4.409E-06	3.363E-06	7.772E-06	0.000E+00	0.000E+00	0.000E+00	
LDT2	Plug-in Hybrid	2.772E-06	6.594E-06	4.139E-04	2.739E-06	1.068E-06	1.764E-05	8.385E-06	2.709E-05	9.817E-07	4.409E-06	2.935E-06	8.326E-06	2.770E-01	8.496E-07	1.128E-06	
LHD1	Gasoline	5.959E-05	2.382E-04	2.056E-03	1.824E-05	3.312E-06	1.764E-05	1.720E-04	1.929E-04	3.045E-06	4.409E-06	6.019E-05	6.764E-05	1.845E+00	1.225E-05	1.366E-05	
LHD1	Diesel	2.915E-04	2.265E-03	7.309E-04	1.306E-05	5.638E-05	2.646E-05	1.720E-04	2.548E-04	5.394E-05	6.614E-06	6.019E-05	1.207E-04	1.378E+00	1.354E-05	2.171E-04	
LHD1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.598E-05	1.036E-04	0.000E+00	4.409E-06	3.009E-05	3.450E-05	0.000E+00	0.000E+00	0.000E+00	
LHD2	Gasoline	4.817E-05	2.695E-04	1.795E-03	2.059E-05	3.158E-06	1.764E-05	2.006E-04	2.214E-04	2.904E-06	4.409E-06	7.022E-05	7.753E-05	2.082E+00	1.053E-05	1.625E-05	
LHD2	Diesel	2.729E-04	1.673E-03	6.192E-04	1.544E-05	5.048E-05	2.646E-05	2.006E-04	2.775E-04	4.829E-05	6.614E-06	7.022E-05	1.251E-04	1.629E+00	1.268E-05	2.566E-04	
LHD2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	1.003E-04	1.179E-04	0.000E+00	4.409E-06	3.511E-05	3.952E-05	0.000E+00	0.000E+00	0.000E+00	
MCY	Gasoline	2.051E-03	1.144E-03	2.435E-02	4.074E-06	4.436E-06	8.818E-06	2.646E-05	3.971E-05	4.147E-06	2.205E-06	9.259E-06	1.561E-05	4.121E-01	3.200E-04	8.150E-05	
MDV	Gasoline	2.192E-05	1.288E-04	1.513E-03	8.578E-06	2.772E-06	1.764E-05	1.724E-05	3.765E-05	2.549E-06	4.409E-06	6.034E-06	1.299E-05	8.677E-01	5.495E-06	1.138E-05	
MDV	Diesel	2.000E-05	8.215E-05	3.773E-04	8.320E-06	9.220E-06	1.764E-05	1.763E-05	4.448E-05	8.822E-06	4.409E-06	6.169E-06	1.940E-05	8.780E-01	9.292E-07	1.383E-04	
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.606E-06	2.724E-05	0.000E+00	4.409E-06	3.362E-06	7.771E-06	0.000E+00	0.000E+00	0.000E+00	
MDV	Plug-in Hybrid	2.800E-06	6.661E-06	4.181E-04	2.766E-06	1.219E-06	1.764E-05	8.377E-06	2.723E-05	1.121E-06	4.409E-06	2.932E-06	8.462E-06	2.798E-01	8.612E-07	1.148E-06	
MH	Gasoline	1.082E-04	6.925E-04	2.508E-03	4.242E-05	3.898E-06	2.646E-05	9.925E-05	1.296E-04	3.584E-06	6.614E-06	3.474E-05	4.493E-05	4.291E+00	2.587E-05	4.664E-05	
MH	Diesel	2.005E-04	6.826E-03	6.274E-04	2.268E-05	1.142E-04	3.527E-05	9.873E-05	2.482E-04	1.093E-04	8.818E-06	3.456E-05	1.527E-04	2.394E+00	9.314E-06	3.771E-04	
Motor Coach	Diesel	3.269E-05	3.824E-03	1.641E-04	3.699E-05	6.681E-05	2.646E-05	1.634E-04	2.566E-04	6.392E-05	6.614E-06	5.718E-05	1.277E-04	3.907E+00	1.518E-06	6.155E-04	
OBUS	Gasoline	8.716E-05	6.100E-04	1.869E-03	3.755E-05	2.447E-06	2.646E-05	9.876E-05	1.277E-04	2.250E-06	6.614E-06	3.457E-05	4.343E-05	3.799E+00	1.869E-05	3.529E-05	
OBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.938E-05	7.584E-05	0.000E+00	6.614E-06	1.728E-05	2.390E-05	0.000E+00	0.000E+00	0.000E+00	
PTO	Diesel	5.065E-05	6.840E-03	5.806E-04	4.356E-05	1.111E-05	0.000E+00	0.000E+00	1.111E-05	1.063E-05	0.000E+00	0.000E+00	1.063E-05	4.600E+00	2.352E-06	7.247E-04	
PTO	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
SBUS	Gasoline	2.119E-04	1.841E-03	5.424E-03	1.721E-05	2.761E-06	1.764E-05	9.902E-05	1.194E-04	2.539E-06	4.409E-06	3.466E-05	4.161E-05	1.740E+00	4.328E-05	8.628E-05	
SBUS	Diesel	1.477E-04	1.035E-02	4.461E-04	2.389E-05	5.164E-05	2.646E-05	9.902E-05	1.771E-04	4.940E-05	6.614E-06	3.466E-05	9.067E-05	2.523E+00	6.861E-06	3.975E-04	
SBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.031E-05	4.951E-05	6.983E-05	0.000E+00	5.078E-06	1.733E-05	2.241E-05	0.000E+00	0.000E+00	0.000E+00	
SBUS	Natural Gas	1.055E-04	1.180E-03	2.479E-02	0.000E+00	8.100E-06	2.646E-05	9.902E-05	1.336E-04	7.448E-06	6.614E-06	3.466E-05	4.872E-05	2.750E+00	7.386E-03	5.606E-04	
T6 CAIRP Class 4	Diesel	2.260E-05	9.553E-04	8.846E-05	2.358E-05	1.910E-05	2.646E-05	9.329E-05	1.388E-04	1.827E-05	6.614E-06	3.265E-05	5.753E-05	2.491E+00	1.050E-06	3.924E-04	
T6 CAIRP Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00	
T6 CAIRP Class 5	Diesel	1.567E-05	8.768E-04	7.227E-05	2.358E-05	1.547E-05	2.646E-05	9.329E-05	1.352E-04	1.480E-05	6.614E-06	3.265E-05	5.406E-05	2.490E+00	7.280E-07	3.924E-04	
T6 CAIRP Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00	
T6 CAIRP Class 6	Diesel	1.833E-05	7.998E-04	7.659E-05	2.318E-05	1.645E-05	2.646E-05	9.329E-05	1.362E-04	1.574E-05	6.614E-06	3.265E-05	5.501E-05	2.448E+00	8.512E-07	3.857E-04	
T6 CAIRP Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00	
T6 CAIRP Class 7	Diesel	1.412E-05	9.166E-04	7.209E-05	2.183E-05	1.543E-05	2.646E-05	9.329E-05	1.352E-04	1.476E-05	6.614E-06	3.265E-05	5.403E-05	2.305E+00	6.560E-07	3.631E-04	
T6 CAIRP Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Delivery Class 4	Diesel	2.180E-04	4.023E-03	6.778E-04	2.465E-05	8.683E-05	2.646E-05	1.049E-04	2.181E-04	8.307E-05	6.614E-06	3.670E-05	1.264E-04	2.603E+00	1.012E-05	4.101E-04	
T6 Instate Delivery Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Delivery Class 4	Natural Gas	2.687E-05	2.034E-04	8.246E-03	0.000E+00	4.034E-06	2.646E-05	1.049E-04	1.353E-04	3.709E-06	6.614E-06	3.670E-05	4.702E-05	2.315E+00	1.881E-03	4.720E-04	
T6 Instate Delivery Class 5	Diesel	5.846E-05	1.996E-03	2.555E-04	2.457E-05	2.345E-05	2.646E-05	1.049E-04	1.548E-04	2.244E-05	6.614E-06	3.670E-05	6.575E-05	2.595E+00	2.715E-06	4.088E-04	
T6 Instate Delivery Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Delivery Class 5	Natural Gas	2.637E-05	2.617E-04	8.107E-03	0.000E+00	3.698E-06	2.646E-05	1.049E-04	1.350E-04	3.400E-06	6.614E-06	3.670E-05	4.671E-05	2.297E+00	1.845E-03	4.683E-04	
T6 Instate Delivery Class 6	Diesel	9.433E-05	2.511E-03	3.528E-04	2.451E-05	3.990E-05	2.646E-05	1.049E-04	1.712E-04	3.818E-05	6.614E-06	3.670E-05	8.149E-05	2.588E+00	4.382E-06	4.077E-04	
T6 Instate Delivery Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Delivery Class 6	Natural Gas	2.672E-05	2.216E-04	8.203E-03	0.000E+00	3.929E-06	2.646E-05	1.049E-04	1.352E-04	3.613E-06	6.614E-06	3.670E-05	4.693E-05	2.303E+00	1.870E-03	4.695E-04	
T6 Instate Delivery Class 7	Diesel	2.502E-05	2.395E-03	2.053E-04	2.427E-05	7.709E-06	2.646E-05	1.049E-04	1.390E-04	7.375E-06	6.614E-06	3.670E-05	5.069E-05	2.563E+00	1.162E-06	4.037E-04	
T6 Instate Delivery Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Delivery Class 7	Natural Gas	2.479E-05	4.449E-04	7.708E-03	0.000E+00	2.665E-06	2.646E-05	1.049E-04	1.340E-04	2.451E-06	6.614E-06	3.670E-05	4.576E-05	2.372E+00	1.735E-03	4.835E-04	
T6 Instate Other Class 4	Diesel	1.720E-04	3.847E-03	5.337E-04	2.369E-05	8.360E-05	2.646E-05	9.891E-05	2.090E-04	7.999E-05	6.614E-06	3.462E-05	1.212E-04	2.501E+00	7.990E-06	3.941E-04	
T6 Instate Other Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Other Class 4	Natural Gas	2.122E-05	1.800E-04	5.950E-03	0.000E+00	3.042E-06	2.646E-05	9.891E-05	1.284E-04	2.797E-06	6.614E-06	3.462E-05	4.403E-05	2.065E+00	1.485E-03	4.210E-04	
T6 Instate Other Class 5	Diesel	3.664E-05	1.547E-03	1.701E-04	2.392E-05	1.866E-05	2.646E-05	9.891E-05	1.440E-04	1.785E-05	6.614E-06	3.462E-05	5.908E-05	2.526E+00	1.702E-06	3.979E-04	
T6 Instate Other Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Other Class 5	Natural Gas	2.061E-05	2.334E-04	5.999E-03	0.000E+00	2.723E-06	2.646E-05	9.891E-05	1.281E-04	2.504E-06	6.614E-06	3.462E-05	4.374E-05	2.027E+00	1.443E-03	4.131E-04	

T6 Instate Other Class 6	Diesel	7.552E-05	2.266E-03	2.750E-04	2.376E-05	3.866E-05	2.646E-05	9.891E-05	1.640E-04	3.698E-05	6.614E-06	3.462E-05	7.821E-05	2.509E+00	3.508E-06	3.953E-04
T6 Instate Other Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 6	Natural Gas	2.052E-05	2.419E-04	6.006E-03	0.000E+00	2.673E-06	2.646E-05	9.891E-05	1.280E-04	2.457E-06	6.614E-06	3.462E-05	4.369E-05	2.033E+00	1.436E-03	4.143E-04
T6 Instate Other Class 7	Diesel	2.582E-05	1.977E-03	1.591E-04	2.333E-05	1.352E-05	2.646E-05	9.891E-05	1.389E-04	1.294E-05	6.614E-06	3.462E-05	5.417E-05	2.464E+00	1.199E-06	3.882E-04
T6 Instate Other Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 7	Natural Gas	1.924E-05	3.605E-04	6.175E-03	0.000E+00	2.016E-06	2.646E-05	9.891E-05	1.274E-04	1.854E-06	6.614E-06	3.462E-05	4.308E-05	2.048E+00	1.347E-03	4.174E-04
T6 Instate Tractor Class 6	Diesel	9.139E-05	2.034E-03	2.976E-04	2.451E-05	4.025E-05	2.646E-05	9.891E-05	1.656E-04	3.851E-05	6.614E-06	3.462E-05	7.974E-05	2.588E+00	4.245E-06	4.078E-04
T6 Instate Tractor Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Tractor Class 6	Natural Gas	2.019E-05	2.707E-04	6.033E-03	0.000E+00	2.501E-06	2.646E-05	9.891E-05	1.279E-04	2.300E-06	6.614E-06	3.462E-05	4.353E-05	1.980E+00	1.413E-03	4.037E-04
T6 Instate Tractor Class 7	Diesel	2.295E-05	2.219E-03	1.647E-04	2.225E-05	1.328E-05	2.646E-05	9.891E-05	1.386E-04	1.271E-05	6.614E-06	3.462E-05	5.394E-05	2.350E+00	1.066E-06	3.703E-04
T6 Instate Tractor Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Tractor Class 7	Natural Gas	1.892E-05	3.864E-04	6.176E-03	0.000E+00	1.843E-06	2.646E-05	9.891E-05	1.272E-04	1.695E-06	6.614E-06	3.462E-05	4.293E-05	2.043E+00	1.324E-03	4.165E-04
T6 OOS Class 4	Diesel	2.969E-05	1.110E-03	1.056E-04	2.346E-05	2.293E-05	2.646E-05	9.329E-05	1.427E-04	2.194E-05	6.614E-06	3.265E-05	6.120E-05	2.478E+00	1.379E-06	3.904E-04
T6 OOS Class 5	Diesel	1.716E-05	9.124E-04	7.559E-05	2.348E-05	1.617E-05	2.646E-05	9.329E-05	1.359E-04	1.547E-05	6.614E-06	3.265E-05	5.474E-05	2.480E+00	7.971E-07	3.907E-04
T6 OOS Class 6	Diesel	2.316E-05	9.117E-04	8.839E-05	2.302E-05	1.911E-05	2.646E-05	9.329E-05	1.389E-04	1.829E-05	6.614E-06	3.265E-05	5.755E-05	2.431E+00	1.076E-06	3.831E-04
T6 OOS Class 7	Diesel	1.409E-05	9.413E-04	7.244E-05	2.168E-05	1.554E-05	2.646E-05	9.329E-05	1.353E-04	1.487E-05	6.614E-06	3.265E-05	5.413E-05	2.289E+00	6.544E-07	3.607E-04
T6 Public Class 4	Diesel	1.654E-04	1.130E-02	4.000E-04	2.586E-05	5.591E-05	2.646E-05	1.018E-04	1.841E-04	5.349E-05	6.614E-06	3.562E-05	9.573E-05	2.731E+00	7.682E-06	4.303E-04
T6 Public Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 4	Natural Gas	2.752E-05	1.779E-04	6.736E-03	0.000E+00	3.720E-06	2.646E-05	1.018E-04	1.320E-04	3.420E-06	6.614E-06	3.562E-05	4.566E-05	2.261E+00	1.926E-03	4.609E-04
T6 Public Class 5	Diesel	9.518E-05	5.408E-03	2.914E-04	2.518E-05	2.629E-05	2.646E-05	1.018E-04	1.545E-04	2.516E-05	6.614E-06	3.562E-05	6.740E-05	2.659E+00	4.421E-06	4.189E-04
T6 Public Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 5	Natural Gas	2.681E-05	2.949E-04	6.799E-03	0.000E+00	3.164E-06	2.646E-05	1.018E-04	1.314E-04	2.909E-06	6.614E-06	3.562E-05	4.515E-05	2.295E+00	1.877E-03	4.679E-04
T6 Public Class 6	Diesel	1.626E-04	1.035E-02	4.038E-04	2.559E-05	6.227E-05	2.646E-05	1.018E-04	1.905E-04	5.958E-05	6.614E-06	3.562E-05	1.018E-04	2.703E+00	7.550E-06	4.258E-04
T6 Public Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 6	Natural Gas	2.717E-05	2.360E-04	6.777E-03	0.000E+00	3.444E-06	2.646E-05	1.018E-04	1.317E-04	3.166E-06	6.614E-06	3.562E-05	4.540E-05	2.260E+00	1.902E-03	4.607E-04
T6 Public Class 7	Diesel	1.794E-04	1.172E-02	4.088E-04	2.590E-05	7.537E-05	2.646E-05	1.018E-04	2.036E-04	7.211E-05	6.614E-06	3.562E-05	1.144E-04	2.735E+00	8.335E-06	4.310E-04
T6 Public Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 7	Natural Gas	2.756E-05	1.724E-04	6.752E-03	0.000E+00	3.746E-06	2.646E-05	1.018E-04	1.320E-04	3.444E-06	6.614E-06	3.562E-05	4.568E-05	2.283E+00	1.929E-03	4.654E-04
T6 Utility Class 5	Diesel	1.721E-05	1.113E-03	1.129E-04	2.314E-05	6.928E-06	2.646E-05	1.003E-04	1.337E-04	6.628E-06	6.614E-06	3.511E-05	4.835E-05	2.444E+00	7.993E-07	3.850E-04
T6 Utility Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.015E-05	7.661E-05	0.000E+00	6.614E-06	1.755E-05	2.417E-05	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 5	Natural Gas	2.186E-05	4.417E-04	6.275E-03	0.000E+00	1.932E-06	2.646E-05	1.003E-04	1.287E-04	1.776E-06	6.614E-06	3.511E-05	4.350E-05	2.173E+00	1.530E-03	4.430E-04
T6 Utility Class 6	Diesel	1.536E-05	1.127E-03	1.127E-04	2.305E-05	6.651E-06	2.646E-05	1.003E-04	1.334E-04	6.364E-06	6.614E-06	3.511E-05	4.808E-05	2.434E+00	7.136E-07	3.835E-04
T6 Utility Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.015E-05	7.661E-05	0.000E+00	6.614E-06	1.755E-05	2.417E-05	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 6	Natural Gas	2.189E-05	4.383E-04	6.272E-03	0.000E+00	1.949E-06	2.646E-05	1.003E-04	1.287E-04	1.792E-06	6.614E-06	3.511E-05	4.351E-05	2.160E+00	1.532E-03	4.403E-04
T6 Utility Class 7	Diesel	1.268E-05	9.432E-04	1.007E-04	2.307E-05	5.958E-06	2.646E-05	1.003E-04	1.327E-04	5.700E-06	6.614E-06	3.511E-05	4.742E-05	2.436E+00	5.890E-07	3.838E-04
T6 Utility Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.015E-05	7.661E-05	0.000E+00	6.614E-06	1.755E-05	2.417E-05	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 7	Natural Gas	2.168E-05	4.638E-04	6.290E-03	0.000E+00	1.816E-06	2.646E-05	1.003E-04	1.286E-04	1.670E-06	6.614E-06	3.511E-05	4.339E-05	2.171E+00	1.517E-03	4.426E-04
T6TS	Gasoline	1.362E-04	8.658E-04	2.809E-03	3.788E-05	3.265E-06	2.646E-05	9.925E-05	1.290E-04	3.002E-06	6.614E-06	3.474E-05	4.435E-05	3.832E+00	2.793E-05	4.451E-05
T6TS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.962E-05	7.608E-05	0.000E+00	6.614E-06	1.737E-05	2.398E-05	0.000E+00	0.000E+00	0.000E+00
T7 CAIRP Class 8	Diesel	2.861E-05	3.430E-03	1.295E-04	3.219E-05	7.204E-05	7.937E-05	1.634E-04	3.148E-04	6.892E-05	1.984E-05	5.718E-05	1.459E-04	3.400E+00	1.329E-06	5.356E-04
T7 CAIRP Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	8.168E-05	1.610E-04	0.000E+00	1.984E-05	2.859E-05	4.843E-05	0.000E+00	0.000E+00	0.000E+00
T7 CAIRP Class 8	Natural Gas	2.924E-05	4.803E-04	8.540E-03	0.000E+00	4.039E-06	7.937E-05	1.634E-04	2.468E-04	3.714E-06	1.984E-05	5.718E-05	8.073E-05	2.514E+00	2.047E-03	5.124E-04
T7 NNOOS Class 8	Diesel	2.738E-05	3.292E-03	1.133E-04	3.181E-05	6.821E-05	7.937E-05	1.634E-04	3.109E-04	6.526E-05	1.984E-05	5.718E-05	1.423E-04	3.359E+00	1.272E-06	5.292E-04
T7 NOOS Class 8	Diesel	2.921E-05	3.501E-03	1.311E-04	3.197E-05	7.373E-05	7.937E-05	1.634E-04	3.165E-04	7.054E-05	1.984E-05	5.718E-05	1.476E-04	3.376E+00	1.357E-06	5.319E-04
T7 Other Port Class 8	Diesel	2.616E-05	3.689E-03	2.320E-04	3.472E-05	4.472E-05	7.937E-05	1.879E-04	3.120E-04	4.278E-05	1.984E-05	6.577E-05	1.284E-04	3.667E+00	1.215E-06	5.777E-04
T7 Other Port Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.396E-05	1.733E-04	0.000E+00	1.984E-05	3.289E-05	5.273E-05	0.000E+00	0.000E+00	0.000E+00
T7 POAK Class 8	Diesel	2.714E-05	3.873E-03	2.432E-04	3.459E-05	4.454E-05	7.937E-05	1.879E-04	3.118E-04	4.261E-05	1.984E-05	6.577E-05	1.282E-04	3.653E+00	1.260E-06	5.755E-04
T7 POAK Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.396E-05	1.733E-04	0.000E+00	1.984E-05	3.289E-05	5.273E-05	0.000E+00	0.000E+00	0.000E+00
T7 POAK Class 8	Natural Gas	3.695E-05	3.804E-04	1.097E-02	0.000E+00	5.565E-06	7.937E-05	1.879E-04	2.728E-04	5.117E-06	1.984E-05	6.577E-05	9.073E-05	2.671E+00	2.586E-03	5.446E-04
T7 Public Class 8	Diesel	2.314E-04	1.687E-02	7.767E-04	3.897E-05	9.965E-05	7.937E-05	2.462E-04	4.253E-04	9.534E-05	1.984E-05	8.618E-05	2.014E-04	4.115E+00	1.075E-05	6.483E-04
T7 Public Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.085E-04	1.879E-04	0.000E+00	1.984E-05	3.797E-05	5.781E-05	0.000E+00	0.000E+00	0.000E+00
T7 Public Class 8	Natural Gas	5.575E-05	1.142E-03	2.071E-02	0.000E+00	6.309E-06	7.937E-05	2.264E-04	3.121E-04	5.801E-06	1.984E-05	7.924E-05	1.049E-04	3.494E+00	3.902E-03	7.123E-04
T7 Single Concrete/Transit Mix Cla	Diesel	1.895E-05	2.156E-03	1.200E-04	3.448E-05	3.298E-05	7.937E-05	1.772E-04	2.895E-04	3.155E-05	1.984E-05	6.200E-05	1.134E-04	3.642E+00	8.802E-07	5.738E-04
T7 Single Concrete/Transit Mix Cla	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	8.857E-05	1.679E-04	0.000E+00	1.984E-05	3.100E-05	5.084E-05	0.000E+00	0.000E+00	0.000E+00
T7 Single Concrete/Transit Mix Cla	Natural Gas	3.352E-05	5.972E-04	1.205E-02	0.000E+00	4.457E-06	7.937E-05	1.771E-04	2.610E-04	4.098E-06	1.984E-05	6.200E-05	8.594E-05	2.675E+00	2.346E-03	5.453E-04
T7 Single Dump Class 8	Diesel	3.339E-05	3.383E-03	2.108E-04	3.505E-05	4.104E-05	7.937E-05	1.772E-04	2.976E-04	3.927E-05	1.984E-05	6.202E-05	1.211E-04	3.702E+00	1.551E-06	5.832E-04
T7 Single Dump Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	8.857E-05	1.679E-04	0.000E+00	1.984E-05	3.100E-05	5.084E-05	0.000E+00	0.000E+00	0.000E+00
T7 Single Dump Class 8	Natural Gas	3.337E-05	9.285E-04	1.669E-02	0.000E+00	3.706E-06	7.937E-05	1.772E-04	2.602E-04	3.407E-06	1.984E-05	6.200E-05	8.525E-05	2.861E+00	2.335E-03	5.833E-04
T7 Single Other Class 8	Diesel	3.171E-05	3.129E-03	1.923E-04	3.476E-05	3.966E-05	7.937E-05	1.772E-04	2.962E-04	3.794E-05	1.984E-05	6.201E-05	1.198E-04	3.670E+00	1.473E-06	5.783E-04
T7 Single Other Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	8.857E-05	1.679E-04	0.000E+00	1.984E-05	3.100E-05	5.084E-05	0.000E+00	0.000E+00	0.000E+00
T7 Single Other Class 8	Natural Gas	3.342E-05	8.451E-04	1.534E-02	0.000E+00	3.917E-06	7.937E-05	1.772E-04	2.604E-04	3.601E-06	1.984E-05	6.200E-05	8.545E-05	2.799E+00	2.339E-03	5.705E-04
T7 SWCV Class 8	Diesel	1.006E-04	1.636E-02	2.732E-04	8.485E-05	2.334E-05	7.937E-05	4.630E-04	5.657E-04	2.233E-05	1.984E-05	1.620E-04	2.042E-04	8.960E+00	4.671E-06	1.412E-03
T7 SWCV Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	2.315E-04	3.108E-04	0.000E+00	1.984E-05	8.102E-05	1.009E-04	0.000E+00	0.000E+00	0.000E+00
T7 SWCV Class 8	Natural Gas	2.061E-04	4.343E-03	4.557E-02	0.000E+00	4.604E-06	7.937E-05	4.630E-04	5.469E-04	4.233E-06	1.984E-05	1.620E-04	1.861E-04	3.564E+00	8.819E-03	7.266E-04
T7 Tractor Class 8	Diesel	3.375E-05	3.604E-03	1.839E-04	3.240E-05	5.074E-05	7.937E-05	1.728E-04	3.029E-04	4.855E-05	1.984E-05	6.048E-05	1.289E-04	3.422E+00	1.568E-06	5.391E-04
T7 Tractor Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	8.639E-05	1.658E-04	0.000E+00	1.984E-05	3.024E-05	5.008E-05	0.000E+00	0.000E+00	0.000E+00
T7 Tractor Class 8	Natural Gas	3.154E-05	1.051E-03	1.857E-02	0.000E+00	3.180E-06	7.937E-05	1.728E-04	2.553E-04	2.924E-06	1.984E-05	6.047E-05	8.324E-05	2.638E+00	2.207E-03	5.377E-04
T7 Utility Class 8	Diesel	2.838E-05	2.885E-03	2.963E-04	3.579E-05	1.591E-05	7.937E-05	2.075E-04	3.027E-04	1.522E-05	1.984E-05	7.261E-05	1.077E-04	3.780E+00	1.318E-06	5.955E-04
T7 Utility Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.037E-04	1.831E-04	0.000E+00	1.984E-05	3.631E-05	5.615E-05	0.000E+00	0.000E+00	0.000E+00
T7IS	Gasoline	1.279E-03	8.925E-03	7.444E-02	4.888E-05	3.386E-06	4.409E-05	1.958E-04	2.433E-04	3.113E-06	1.102E-05	6.853E-05	8.267E-05	4.944E+00	2.534E-04	3.338E-04
T7IS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.409E-05	9.688E-05	1.410E-04	0.000E+00	1.102E-05	3.391E-05	4.493E-05	0.000E+00	0.000E+00	0.000E+00
UBUS	Gasoline	1.348E-05	7.988E-05	1.227E-03	2.185E-05	2.598E-06	1.828E-05	2.037E-04	2.245E-04	2.388E-06	4.569E-06	7.128E-05	7.824E-05	2.210E+00	4.651E-06	1.070E-05
UBUS	Diesel	1.493E-04	8.280E-04	1.702E-04	2.556E-05	1.573E-05	7.140E-05	2.425E-04	3.296E-04	1.505E-05	1.785E-05	8.488E-05	1.178E-04	2.698E+00	6.934E-06	4.250E-04
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.496E-05	1.213E-04	1.862E-04	0.000E+00	1.624E-05	4.244E-05	5.868E-05	0.000E+00	0.000E+00	0.000E+00

UBUS	Natural Gas	1.292E-04	1.222E-04	1.025E-01	0.000E+00	6.275E-07	6.826E-05	2.425E-04	3.114E-04	6.003E-07	1.707E-05	8.488E-05	1.025E-04	2.784E+00	9.040E-03	5.675E-04	

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC202x Categori
Units: miles/day for CVMT and EVMT, trips/

		MTons/Mile														
Vehicle Category	Fuel	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUNEX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
All Other Buses	Diesel	2.092E-08	7.061E-07	9.672E-08	1.104E-08	7.002E-09	1.200E-08	4.614E-08	6.514E-08	6.699E-09	3.000E-09	1.615E-08	2.585E-08	1.166E-03	9.718E-10	1.837E-07
All Other Buses	Natural Gas	1.124E-08	1.964E-07	3.245E-06	0.000E+00	1.121E-09	1.200E-08	4.614E-08	5.926E-08	1.031E-09	3.000E-09	1.615E-08	2.018E-08	1.012E-03	7.864E-07	2.064E-07
LDA	Gasoline	7.847E-09	3.809E-08	6.378E-07	2.679E-09	1.263E-09	8.000E-09	6.709E-09	1.597E-08	1.162E-09	2.000E-09	2.348E-09	5.510E-09	2.710E-04	2.038E-09	4.236E-09
LDA	Diesel	2.270E-08	1.886E-07	3.041E-07	2.200E-09	1.328E-08	8.000E-09	6.869E-09	2.815E-08	1.271E-08	2.000E-09	2.404E-09	1.711E-08	2.322E-04	1.054E-09	3.659E-08
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.371E-09	1.237E-08	0.000E+00	2.000E-09	1.530E-09	3.530E-09	0.000E+00	0.000E+00	0.000E+00
LDA	Plug-in Hybrid	1.313E-09	3.125E-09	1.961E-07	1.298E-09	6.280E-10	8.000E-09	3.783E-09	1.241E-08	5.775E-10	2.000E-09	1.324E-09	3.902E-09	1.313E-04	4.025E-10	5.344E-10
LDT1	Gasoline	2.094E-08	1.012E-07	1.098E-06	3.139E-09	1.665E-09	8.000E-09	8.066E-09	1.773E-08	1.531E-09	2.000E-09	2.823E-09	6.354E-09	3.175E-04	4.741E-09	7.635E-09
LDT1	Diesel	3.136E-07	1.656E-06	1.668E-06	3.955E-09	2.472E-07	8.000E-09	9.495E-09	2.647E-07	2.365E-07	2.000E-09	3.323E-09	2.418E-07	4.174E-04	1.456E-08	6.576E-08
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.381E-09	1.238E-08	0.000E+00	2.000E-09	1.533E-09	3.533E-09	0.000E+00	0.000E+00	0.000E+00
LDT1	Plug-in Hybrid	1.206E-09	2.869E-09	1.801E-07	1.192E-09	3.961E-10	8.000E-09	3.823E-09	1.222E-08	3.642E-10	2.000E-09	1.338E-09	3.702E-09	1.205E-04	3.696E-10	4.909E-10
LDT2	Gasoline	8.159E-09	4.784E-08	6.508E-07	3.227E-09	1.256E-09	8.000E-09	7.768E-09	1.702E-08	1.155E-09	2.000E-09	2.719E-09	5.874E-09	3.264E-04	2.154E-09	4.613E-09
LDT2	Diesel	1.255E-08	3.960E-08	1.194E-07	2.874E-09	4.730E-09	8.000E-09	7.835E-09	2.056E-08	4.525E-09	2.000E-09	2.742E-09	9.267E-09	3.033E-04	5.829E-10	4.779E-08
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.358E-09	1.236E-08	0.000E+00	2.000E-09	1.525E-09	3.525E-09	0.000E+00	0.000E+00	0.000E+00
LDT2	Plug-in Hybrid	1.257E-09	2.991E-09	1.878E-07	1.242E-09	4.843E-10	8.000E-09	3.803E-09	1.229E-08	4.453E-10	2.000E-09	1.331E-09	3.776E-09	1.257E-04	3.854E-10	5.118E-10
LHD1	Gasoline	2.703E-08	1.081E-07	9.324E-07	8.273E-09	1.502E-09	8.000E-09	7.800E-08	8.750E-08	1.381E-09	2.000E-09	2.730E-08	3.068E-08	8.369E-04	5.557E-09	6.197E-09
LHD1	Diesel	1.322E-07	1.028E-06	3.315E-07	5.924E-09	2.558E-08	1.200E-08	7.800E-08	1.156E-07	2.447E-08	3.000E-09	2.730E-08	5.477E-08	6.252E-04	6.142E-09	9.850E-08
LHD1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.900E-08	4.700E-08	0.000E+00	2.000E-09	1.365E-08	1.565E-08	0.000E+00	0.000E+00	0.000E+00
LHD2	Gasoline	2.185E-08	1.222E-07	8.142E-07	9.338E-09	1.432E-09	8.000E-09	9.100E-08	1.004E-07	1.317E-09	2.000E-09	3.185E-08	3.517E-08	9.445E-04	4.775E-09	7.371E-09
LHD2	Diesel	1.238E-07	7.588E-07	2.809E-07	7.001E-09	2.290E-08	1.200E-08	9.100E-08	1.259E-07	2.191E-08	3.000E-09	3.185E-08	5.676E-08	7.389E-04	5.750E-09	1.164E-07
LHD2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.550E-08	5.350E-08	0.000E+00	2.000E-09	1.593E-08	1.793E-08	0.000E+00	0.000E+00	0.000E+00
MCY	Gasoline	9.304E-07	5.188E-07	1.105E-05	1.848E-09	2.012E-09	4.000E-09	1.200E-08	1.801E-08	1.881E-09	1.000E-09	4.200E-09	7.081E-09	1.869E-04	1.452E-07	3.697E-08
MDV	Gasoline	9.941E-09	5.843E-08	6.862E-07	3.891E-09	1.258E-09	8.000E-09	7.819E-09	1.708E-08	1.156E-09	2.000E-09	2.737E-09	5.893E-09	3.936E-04	2.492E-09	5.161E-09
MDV	Diesel	9.074E-09	3.726E-08	1.711E-07	3.774E-09	4.182E-09	8.000E-09	7.995E-09	2.018E-08	4.001E-09	2.000E-09	2.798E-09	8.800E-09	3.983E-04	4.215E-10	6.275E-08
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.357E-09	1.236E-08	0.000E+00	2.000E-09	1.525E-09	3.525E-09	0.000E+00	0.000E+00	0.000E+00
MDV	Plug-in Hybrid	1.270E-09	3.021E-09	1.896E-07	1.255E-09	5.532E-10	8.000E-09	3.800E-09	1.235E-08	5.086E-10	2.000E-09	1.330E-09	3.839E-09	1.269E-04	3.906E-10	5.205E-10
MH	Gasoline	4.909E-08	3.141E-07	1.138E-06	1.924E-08	1.768E-09	1.200E-08	4.502E-08	5.879E-08	1.626E-09	3.000E-09	1.576E-08	2.038E-08	1.947E-03	1.173E-08	2.115E-08
MH	Diesel	9.096E-08	3.096E-06	2.846E-07	1.029E-08	5.182E-08	1.600E-08	4.479E-08	1.126E-07	4.958E-08	4.000E-09	1.567E-08	6.925E-08	1.086E-03	4.225E-09	1.711E-07
Motor Coach	Diesel	1.483E-08	1.735E-06	7.442E-08	1.678E-08	3.030E-08	1.200E-08	7.410E-08	1.164E-07	2.899E-08	3.000E-09	2.593E-08	5.793E-08	1.772E-03	6.886E-10	2.792E-07
OBUS	Gasoline	3.954E-08	2.767E-07	8.478E-07	1.703E-08	1.110E-09	1.200E-08	4.480E-08	5.791E-08	1.020E-09	3.000E-09	1.568E-08	1.970E-08	1.723E-03	8.478E-09	1.601E-08
OBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.240E-08	3.440E-08	0.000E+00	3.000E-09	7.840E-09	1.084E-08	0.000E+00	0.000E+00	0.000E+00
PTO	Diesel	2.297E-08	3.103E-06	2.634E-07	1.976E-08	5.038E-09	0.000E+00	0.000E+00	5.038E-09	4.820E-09	0.000E+00	0.000E+00	4.820E-09	2.086E-03	1.067E-09	3.287E-07
PTO	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SBUS	Gasoline	9.611E-08	8.352E-07	2.460E-06	7.804E-09	1.252E-09	8.000E-09	4.492E-08	5.417E-08	1.152E-09	2.000E-09	1.572E-08	1.887E-08	7.894E-04	1.963E-08	3.914E-08
SBUS	Diesel	6.700E-08	4.697E-06	2.024E-07	1.084E-08	2.342E-08	1.200E-08	4.492E-08	8.034E-08	2.241E-08	3.000E-09	1.572E-08	4.113E-08	1.144E-03	3.112E-09	1.803E-07
SBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.214E-09	2.246E-08	3.167E-08	0.000E+00	2.304E-09	7.860E-09	1.016E-08	0.000E+00	0.000E+00	0.000E+00
SBUS	Natural Gas	4.787E-08	5.352E-07	1.124E-05	0.000E+00	3.674E-09	1.200E-08	4.492E-08	6.059E-08	3.378E-09	3.000E-09	1.572E-08	2.210E-08	1.247E-03	3.350E-06	2.543E-07
T6 CAIRP Class 4	Diesel	1.025E-08	4.333E-07	4.012E-08	1.070E-08	8.662E-09	1.200E-08	4.231E-08	6.298E-08	8.287E-09	3.000E-09	1.481E-08	2.610E-08	1.130E-03	4.762E-10	1.780E-07
T6 CAIRP Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 5	Diesel	7.110E-09	3.977E-07	3.278E-08	1.070E-08	7.017E-09	1.200E-08	4.231E-08	6.133E-08	6.713E-09	3.000E-09	1.481E-08	2.452E-08	1.130E-03	3.302E-10	1.780E-07
T6 CAIRP Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 6	Diesel	8.313E-09	3.628E-07	3.474E-08	1.052E-08	7.464E-09	1.200E-08	4.231E-08	6.178E-08	7.141E-09	3.000E-09	1.481E-08	2.495E-08	1.111E-03	3.861E-10	1.750E-07
T6 CAIRP Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 7	Diesel	6.407E-09	4.158E-07	3.270E-08	9.900E-09	6.999E-09	1.200E-08	4.231E-08	6.131E-08	6.696E-09	3.000E-09	1.481E-08	2.451E-08	1.045E-03	2.976E-10	1.647E-07
T6 CAIRP Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 4	Diesel	9.887E-08	1.825E-06	3.075E-07	1.118E-08	3.938E-08	1.200E-08	4.756E-08	9.895E-08	3.768E-08	3.000E-09	1.665E-08	5.733E-08	1.181E-03	4.592E-09	1.860E-07
T6 Instate Delivery Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 4	Natural Gas	1.219E-08	9.225E-08	3.741E-06	0.000E+00	1.830E-09	1.200E-08	4.756E-08	6.139E-08	1.682E-09	3.000E-09	1.665E-08	2.133E-08	1.050E-03	8.532E-07	2.141E-07
T6 Instate Delivery Class 5	Diesel	2.652E-08	9.055E-07	1.159E-07	1.115E-08	1.064E-08	1.200E-08	4.756E-08	7.020E-08	1.018E-08	3.000E-09	1.665E-08	2.982E-08	1.177E-03	1.232E-09	1.855E-07
T6 Instate Delivery Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 5	Natural Gas	1.196E-08	1.187E-07	3.677E-06	0.000E+00	1.678E-09	1.200E-08	4.756E-08	6.124E-08	1.542E-09	3.000E-09	1.665E-08	2.119E-08	1.042E-03	8.370E-07	2.124E-07
T6 Instate Delivery Class 6	Diesel	4.279E-08	1.139E-06	1.600E-07	1.112E-08	1.810E-08	1.200E-08	4.756E-08	7.766E-08	1.732E-08	3.000E-09	1.665E-08	3.696E-08	1.174E-03	1.987E-09	1.850E-07
T6 Instate Delivery Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 6	Natural Gas	1.212E-08	1.005E-07	3.721E-06	0.000E+00	1.782E-09	1.200E-08	4.756E-08	6.135E-08	1.639E-09	3.000E-09	1.665E-08	2.129E-08	1.045E-03	8.481E-07	2.130E-07
T6 Instate Delivery Class 7	Diesel	1.135E-08	1.086E-06	9.314E-08	1.101E-08	3.497E-09	1.200E-08	4.756E-08	6.306E-08	3.345E-09	3.000E-09	1.665E-08	2.299E-08	1.162E-03	5.272E-10	1.831E-07
T6 Instate Delivery Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 7	Natural Gas	1.125E-08	2.018E-07	3.496E-06	0.000E+00	1.209E-09	1.200E-08	4.756E-08	6.077E-08	1.112E-09	3.000E-09	1.665E-08	2.076E-08	1.076E-03	7.871E-07	2.193E-07
T6 Instate Other Class 4	Diesel	7.803E-08	1.745E-06	2.421E-07	1.074E-08	3.792E-08	1.200E-08	4.486E-08	9.479E-08	3.628E-08	3.000E-09	1.570E-08	5.498E-08	1.135E-03	3.624E-09	1.788E-07
T6 Instate Other Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 4	Natural Gas	9.626E-09	8.165E-08	2.699E-06	0.000E+00	1.380E-09	1.200E-08	4.486E-08	5.824E-08	1.269E-09	3.000E-09	1.570E-08	1.997E-08	9.368E-04	6.737E-07	1.910E-07
T6 Instate Other Class 5	Diesel	1.662E-08	7.019E-07	7.714E-08	1.085E-08	8.464E-09	1.200E-08	4.486E-08	6.533E-08	8.098E-09	3.000E-09	1.570E-08	2.680E-08	1.146E-03	7.720E-10	1.805E-07
T6 Instate Other Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 5	Natural Gas	9.350E-09	1.059E-07	2.721E-06	0.000E+00	1.235E-09	1.200E-08	4.486E-08	5.810E-08	1.136E-09	3.000E-09	1.570E-08	1.984E-08	9.192E-04	6.544E-07	1.874E-07

T6 Instate Other Class 6	Diesel	3.426E-08	1.028E-06	1.247E-07	1.078E-08	1.753E-08	1.200E-08	4.486E-08	7.440E-08	1.678E-08	3.000E-09	1.570E-08	3.548E-08	1.138E-03	1.591E-09	1.793E-07
T6 Instate Other Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 6	Natural Gas	9.306E-09	1.097E-07	2.724E-06	0.000E+00	1.212E-09	1.200E-08	4.486E-08	5.808E-08	1.115E-09	3.000E-09	1.570E-08	1.982E-08	9.219E-04	6.513E-07	1.879E-07
T6 Instate Other Class 7	Diesel	1.171E-08	8.966E-07	7.215E-08	1.058E-08	6.134E-09	1.200E-08	4.486E-08	6.300E-08	5.869E-09	3.000E-09	1.570E-08	2.457E-08	1.118E-03	5.440E-10	1.761E-07
T6 Instate Other Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 7	Natural Gas	8.729E-09	1.635E-07	2.801E-06	0.000E+00	9.144E-10	1.200E-08	4.486E-08	5.778E-08	8.408E-10	3.000E-09	1.570E-08	1.954E-08	9.288E-04	6.110E-07	1.893E-07
T6 Instate Tractor Class 6	Diesel	4.146E-08	9.226E-07	1.350E-07	1.112E-08	1.826E-08	1.200E-08	4.486E-08	7.512E-08	1.747E-08	3.000E-09	1.570E-08	3.617E-08	1.174E-03	1.926E-09	1.850E-07
T6 Instate Tractor Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Tractor Class 6	Natural Gas	9.158E-09	1.228E-07	2.736E-06	0.000E+00	1.135E-09	1.200E-08	4.486E-08	5.800E-08	1.043E-09	3.000E-09	1.570E-08	1.975E-08	8.983E-04	6.409E-07	1.831E-07
T6 Instate Tractor Class 7	Diesel	1.041E-08	1.007E-06	7.470E-08	1.009E-08	6.026E-09	1.200E-08	4.486E-08	6.289E-08	5.765E-09	3.000E-09	1.570E-08	2.447E-08	1.066E-03	4.835E-10	1.679E-07
T6 Instate Tractor Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Tractor Class 7	Natural Gas	8.583E-09	1.753E-07	2.801E-06	0.000E+00	8.360E-10	1.200E-08	4.486E-08	5.770E-08	7.687E-10	3.000E-09	1.570E-08	1.947E-08	9.267E-04	6.007E-07	1.889E-07
T6 OOS Class 4	Diesel	1.347E-08	5.035E-07	4.790E-08	1.064E-08	1.040E-08	1.200E-08	4.231E-08	6.472E-08	9.951E-09	3.000E-09	1.481E-08	2.776E-08	1.124E-03	6.255E-10	1.771E-07
T6 OOS Class 5	Diesel	7.784E-09	4.139E-07	3.429E-08	1.065E-08	7.335E-09	1.200E-08	4.231E-08	6.165E-08	7.018E-09	3.000E-09	1.481E-08	2.483E-08	1.125E-03	3.616E-10	1.772E-07
T6 OOS Class 6	Diesel	1.050E-08	4.136E-07	4.009E-08	1.044E-08	8.669E-09	1.200E-08	4.231E-08	6.298E-08	8.294E-09	3.000E-09	1.481E-08	2.610E-08	1.103E-03	4.879E-10	1.738E-07
T6 OOS Class 7	Diesel	6.390E-09	4.270E-07	3.286E-08	9.833E-09	7.048E-09	1.200E-08	4.231E-08	6.136E-08	6.743E-09	3.000E-09	1.481E-08	2.455E-08	1.038E-03	2.968E-10	1.636E-07
T6 Public Class 4	Diesel	7.502E-08	5.124E-06	1.815E-07	1.173E-08	2.536E-08	1.200E-08	4.617E-08	8.353E-08	2.426E-08	3.000E-09	1.616E-08	4.342E-08	1.239E-03	3.484E-09	1.952E-07
T6 Public Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 4	Natural Gas	1.248E-08	8.072E-08	3.055E-06	0.000E+00	1.687E-09	1.200E-08	4.617E-08	5.986E-08	1.551E-09	3.000E-09	1.616E-08	2.071E-08	1.025E-03	8.737E-07	2.091E-07
T6 Public Class 5	Diesel	4.317E-08	2.453E-06	1.322E-07	1.142E-08	1.193E-08	1.200E-08	4.617E-08	7.010E-08	1.141E-08	3.000E-09	1.616E-08	3.057E-08	1.206E-03	2.005E-09	1.900E-07
T6 Public Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 5	Natural Gas	1.216E-08	1.338E-07	3.084E-06	0.000E+00	1.435E-09	1.200E-08	4.617E-08	5.960E-08	1.319E-09	3.000E-09	1.616E-08	2.048E-08	1.041E-03	8.513E-07	2.122E-07
T6 Public Class 6	Diesel	7.374E-08	4.693E-06	1.831E-07	1.161E-08	2.825E-08	1.200E-08	4.617E-08	8.642E-08	2.702E-08	3.000E-09	1.616E-08	4.618E-08	1.226E-03	3.425E-09	1.932E-07
T6 Public Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 6	Natural Gas	1.232E-08	1.070E-07	3.074E-06	0.000E+00	1.562E-09	1.200E-08	4.617E-08	5.973E-08	1.436E-09	3.000E-09	1.616E-08	2.060E-08	1.025E-03	8.626E-07	2.090E-07
T6 Public Class 7	Diesel	8.140E-08	5.316E-06	1.854E-07	1.175E-08	3.419E-08	1.200E-08	4.617E-08	9.236E-08	3.271E-08	3.000E-09	1.616E-08	5.187E-08	1.241E-03	3.781E-09	1.955E-07
T6 Public Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 7	Natural Gas	1.250E-08	7.818E-08	3.062E-06	0.000E+00	1.699E-09	1.200E-08	4.617E-08	5.987E-08	1.562E-09	3.000E-09	1.616E-08	2.072E-08	1.036E-03	8.748E-07	2.111E-07
T6 Utility Class 5	Diesel	7.806E-09	5.048E-07	5.119E-08	1.050E-08	3.142E-09	1.200E-08	4.550E-08	6.064E-08	3.006E-09	3.000E-09	1.592E-08	2.193E-08	1.108E-03	3.626E-10	1.746E-07
T6 Utility Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.275E-08	3.475E-08	0.000E+00	3.000E-09	7.962E-09	1.096E-08	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 5	Natural Gas	9.918E-09	2.004E-07	2.846E-06	0.000E+00	8.761E-10	1.200E-08	4.550E-08	5.837E-08	8.056E-10	3.000E-09	1.592E-08	1.973E-08	9.858E-04	6.941E-07	2.010E-07
T6 Utility Class 6	Diesel	6.969E-09	5.114E-07	5.110E-08	1.046E-08	3.017E-09	1.200E-08	4.550E-08	6.051E-08	2.887E-09	3.000E-09	1.592E-08	2.181E-08	1.104E-03	3.237E-10	1.740E-07
T6 Utility Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.275E-08	3.475E-08	0.000E+00	3.000E-09	7.962E-09	1.096E-08	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 6	Natural Gas	9.931E-09	1.988E-07	2.845E-06	0.000E+00	8.842E-10	1.200E-08	4.550E-08	5.838E-08	8.130E-10	3.000E-09	1.592E-08	1.974E-08	9.797E-04	6.950E-07	1.997E-07
T6 Utility Class 7	Diesel	5.752E-09	4.278E-07	4.569E-08	1.046E-08	2.702E-09	1.200E-08	4.550E-08	6.020E-08	2.585E-09	3.000E-09	1.592E-08	2.151E-08	1.105E-03	2.672E-10	1.741E-07
T6 Utility Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.275E-08	3.475E-08	0.000E+00	3.000E-09	7.962E-09	1.096E-08	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 7	Natural Gas	9.834E-09	2.104E-07	2.853E-06	0.000E+00	8.240E-10	1.200E-08	4.550E-08	5.832E-08	7.576E-10	3.000E-09	1.592E-08	1.968E-08	9.848E-04	6.883E-07	2.007E-07
T6TS	Gasoline	6.177E-08	3.927E-07	1.274E-06	1.718E-08	1.481E-09	1.200E-08	4.502E-08	5.850E-08	1.362E-09	3.000E-09	1.576E-08	2.012E-08	1.738E-03	1.267E-08	2.019E-08
T6TS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.251E-08	3.451E-08	0.000E+00	3.000E-09	7.878E-09	1.088E-08	0.000E+00	0.000E+00	0.000E+00
T7 CAIRP Class 8	Diesel	1.298E-08	1.556E-06	5.872E-08	1.460E-08	3.268E-08	3.600E-08	7.410E-08	1.428E-07	3.126E-08	9.000E-09	2.593E-08	6.620E-08	1.542E-03	6.027E-10	2.429E-07
T7 CAIRP Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	3.705E-08	7.305E-08	0.000E+00	9.000E-09	1.297E-08	2.197E-08	0.000E+00	0.000E+00	0.000E+00
T7 CAIRP Class 8	Natural Gas	1.326E-08	2.178E-07	3.874E-06	0.000E+00	1.832E-09	3.600E-08	7.410E-08	1.119E-07	1.684E-09	9.000E-09	2.593E-08	3.662E-08	1.140E-03	9.284E-07	2.324E-07
T7 NNOOS Class 8	Diesel	1.242E-08	1.493E-06	5.141E-08	1.443E-08	3.094E-08	3.600E-08	7.410E-08	1.410E-07	2.960E-08	9.000E-09	2.593E-08	6.453E-08	1.524E-03	5.769E-10	2.401E-07
T7 NOOS Class 8	Diesel	1.325E-08	1.588E-06	5.946E-08	1.450E-08	3.344E-08	3.600E-08	7.410E-08	1.435E-07	3.200E-08	9.000E-09	2.593E-08	6.693E-08	1.532E-03	6.153E-10	2.413E-07
T7 Other Port Class 8	Diesel	1.187E-08	1.673E-06	1.052E-07	1.575E-08	2.028E-08	3.600E-08	8.524E-08	1.415E-07	1.941E-08	9.000E-09	2.983E-08	5.824E-08	1.663E-03	5.512E-10	2.620E-07
T7 Other Port Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.262E-08	7.862E-08	0.000E+00	9.000E-09	1.492E-08	2.392E-08	0.000E+00	0.000E+00	0.000E+00
T7 POAK Class 8	Diesel	1.231E-08	1.757E-06	1.103E-07	1.569E-08	2.020E-08	3.600E-08	8.524E-08	1.414E-07	1.933E-08	9.000E-09	2.983E-08	5.816E-08	1.657E-03	5.717E-10	2.610E-07
T7 POAK Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.262E-08	7.862E-08	0.000E+00	9.000E-09	1.492E-08	2.392E-08	0.000E+00	0.000E+00	0.000E+00
T7 POAK Class 8	Natural Gas	1.676E-08	1.725E-07	4.977E-06	0.000E+00	2.524E-09	3.600E-08	8.524E-08	1.238E-07	2.321E-09	9.000E-09	2.983E-08	4.115E-08	1.212E-03	1.173E-06	2.470E-07
T7 Public Class 8	Diesel	1.049E-07	7.650E-06	3.523E-07	1.768E-08	4.520E-08	3.600E-08	1.117E-07	1.929E-07	4.325E-08	9.000E-09	3.909E-08	9.134E-08	1.867E-03	4.875E-09	2.941E-07
T7 Public Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.921E-08	8.521E-08	0.000E+00	9.000E-09	1.722E-08	2.622E-08	0.000E+00	0.000E+00	0.000E+00
T7 Public Class 8	Natural Gas	2.529E-08	5.179E-07	9.395E-06	0.000E+00	2.862E-09	3.600E-08	1.027E-07	1.416E-07	2.631E-09	9.000E-09	3.594E-08	4.757E-08	1.585E-03	1.770E-06	3.231E-07
T7 Single Concrete/Transit Mix Cla	Diesel	8.596E-09	9.780E-07	5.443E-08	1.564E-08	1.496E-08	3.600E-08	8.035E-08	1.313E-07	1.431E-08	9.000E-09	2.812E-08	5.144E-08	1.652E-03	3.993E-10	2.603E-07
T7 Single Concrete/Transit Mix Cla	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.018E-08	7.618E-08	0.000E+00	9.000E-09	1.406E-08	2.306E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Concrete/Transit Mix Cla	Natural Gas	1.520E-08	2.709E-07	5.466E-06	0.000E+00	2.022E-09	3.600E-08	8.035E-08	1.184E-07	1.859E-09	9.000E-09	2.812E-08	3.898E-08	1.213E-03	1.064E-06	2.474E-07
T7 Single Dump Class 8	Diesel	1.514E-08	1.534E-06	9.563E-08	1.590E-08	1.862E-08	3.600E-08	8.037E-08	1.350E-07	1.781E-08	9.000E-09	2.813E-08	5.494E-08	1.679E-03	7.034E-10	2.646E-07
T7 Single Dump Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.018E-08	7.618E-08	0.000E+00	9.000E-09	1.406E-08	2.306E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Dump Class 8	Natural Gas	1.513E-08	4.212E-07	7.569E-06	0.000E+00	1.681E-09	3.600E-08	8.036E-08	1.180E-07	1.546E-09	9.000E-09	2.812E-08	3.867E-08	1.298E-03	1.059E-06	2.646E-07
T7 Single Other Class 8	Diesel	1.438E-08	1.419E-06	8.721E-08	1.577E-08	1.799E-08	3.600E-08	8.037E-08	1.344E-07	1.721E-08	9.000E-09	2.813E-08	5.434E-08	1.665E-03	6.680E-10	2.623E-07
T7 Single Other Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.018E-08	7.618E-08	0.000E+00	9.000E-09	1.406E-08	2.306E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Other Class 8	Natural Gas	1.516E-08	3.833E-07	6.959E-06	0.000E+00	1.777E-09	3.600E-08	8.036E-08	1.181E-07	1.634E-09	9.000E-09	2.812E-08	3.876E-08	1.269E-03	1.061E-06	2.588E-07
T7 SWCV Class 8	Diesel	4.562E-08	7.420E-06	1.239E-07	3.849E-08	1.059E-08	3.600E-08	2.100E-07	2.566E-07	1.013E-08	9.000E-09	7.350E-08	9.263E-08	4.064E-03	2.119E-09	6.404E-07
T7 SWCV Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	1.050E-07	1.410E-07	0.000E+00	9.000E-09	3.675E-08	4.575E-08	0.000E+00	0.000E+00	0.000E+00
T7 SWCV Class 8	Natural Gas	9.347E-08	1.970E-06	2.067E-05	0.000E+00	2.088E-09	3.600E-08	2.100E-07	2.481E-07	1.920E-09	9.000E-09	7.350E-08	8.442E-08	1.617E-03	4.000E-06	3.296E-07
T7 Tractor Class 8	Diesel	1.531E-08	1.635E-06	8.341E-08	1.470E-08	2.302E-08	3.600E-08	7.838E-08	1.374E-07	2.202E-08	9.000E-09	2.743E-08	5.845E-08	1.552E-03	7.110E-10	2.445E-07
T7 Tractor Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	3.919E-08	7.519E-08	0.000E+00	9.000E-09	1.372E-08	2.272E-08	0.000E+00	0.000E+00	0.000E+00
T7 Tractor Class 8	Natural Gas	1.431E-08	4.765E-07	8.421E-06	0.000E+00	1.442E-09	3.600E-08	7.837E-08	1.158E-07	1.326E-09	9.000E-09	2.743E-08	3.776E-08	1.196E-03	1.001E-06	2.439E-07
T7 Utility Class 8	Diesel	1.287E-08	1.309E-06	1.344E-07	1.624E-08	7.216E-09	3.600E-08	9.411E-08	1.373E-07	6.904E-09	9.000E-09	3.294E-08	4.884E-08	1.715E-03	5.980E-10	2.701E-07
T7 Utility Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.705E-08	8.305E-08	0.000E+00	9.000E-09	1.647E-08	2.547E-08	0.000E+00	0.000E+00	0.000E+00
T7IS	Gasoline	5.800E-07	4.048E-06	3.377E-05	2.217E-08	1.536E-09	2.000E-08	8.882E-08	1.104E-07	1.412E-09	5.000E-09	3.109E-08	3.750E-08	2.243E-03	1.149E-07	1.514E-07
T7IS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.000E-08	4.394E-08	6.394E-08	0.000E+00	5.000E-09	1.538E-08	2.038E-08	0.000E+00	0.000E+00	0.000E+00
UBUS	Gasoline	6.117E-09	3.623E-08	5.567E-07	9.909E-09	1.178E-09	8.290E-09	9.238E-08	1.018E-07	1.083E-09	2.073E-09	3.233E-08	3.549E-08	1.002E-03	2.110E-09	4.853E-09
UBUS	Diesel	6.772E-08	3.756E-07	7.720E-08	1.160E-08	7.136E-09	3.239E-08	1.100E-07	1.495E-07	6.827E-09	8.097E-09	3.850E-08	5.342E-08	1.224E-03	3.145E-09	1.928E-07
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.947E-08	5.500E-08	8.447E-08	0.000E+00	7.366E-09	1.925E-08	2.662E-08	0.000E+00	0.000E+00	0.000E+00

UBUS	Natural Gas	5.859E-08	5.542E-08	4.651E-05	0.000E+00	2.846E-10	3.096E-08	1.100E-07	1.412E-07	2.723E-10	7.741E-09	3.850E-08	4.651E-08	1.263E-03	4.101E-06	2.574E-07

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2045
Season: Annual
Vehicle Classification: EMFAC202x 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.

		g/mile																2.205E-03
Vehicle Category	Fuel	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUNEX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	VMT	% of VMT
All Other Buses	Diesel	0.01139108	0.4756145	0.07770906	0.00961517	0.0030157	0.012	0.0461373	6.12E-02	0.00288524	0.003	0.01614806	2.20E-02	1015.39361	0.00052909	0.15997568	69,257	0.349%
All Other Buses	Natural Gas	0.01217187	0.07699056	3.42162427	0	0.00174125	0.012	0.0461373	5.99E-02	0.00160101	0.003	0.01614806	2.07E-02	895.689664	0.85189325	0.1825922	1,337	0.007%
LDA	Gasoline	0.00267166	0.01887456	0.42367274	0.00219658	0.00049163	0.008	0.00681322	1.53E-02	0.00045203	0.002	0.00238463	4.84E-03	222.190418	0.00087314	0.00287578	5,774,158	29.092%
LDA	Diesel	0.00408661	0.01265633	0.12444351	0.00170595	0.00099857	0.008	0.00683206	1.58E-02	0.00095537	0.002	0.00239122	5.35E-03	180.037517	0.00018982	0.02836498	3,411	0.017%
LDA	Electricity	0	0	0	0	0	0.008	0.00438747	1.24E-02	0	0.002	0.00153561	3.54E-03	0	0	0	883,009	4.449%
LDA	Plug-in Hybrid	0.0011255	0.00264987	0.16654049	0.0010976	0.00020198	0.008	0.00391786	1.21E-02	0.00018572	0.002	0.00137125	3.56E-03	111.025912	0.00032155	0.00039367	277,976	1.401%
LDT1	Gasoline	0.00301379	0.02102961	0.46404325	0.00254082	0.00052652	0.008	0.00828276	1.68E-02	0.00048411	0.002	0.00289896	5.38E-03	257.011215	0.00096291	0.00303661	707,177	3.563%
LDT1	Diesel	0.01204797	0.02675518	0.12677364	0.00317216	0.00406137	0.008	0.00823834	2.03E-02	0.00388567	0.002	0.00288342	8.77E-03	334.774279	0.00055961	0.05274382	8	0.000%
LDT1	Electricity	0	0	0	0	0	0.008	0.00439494	1.24E-02	0	0.002	0.00153823	3.54E-03	0	0	0	24,987	0.126%
LDT1	Plug-in Hybrid	0.00112224	0.00264221	0.16603738	0.00109439	0.00019556	0.008	0.00392584	1.21E-02	0.00017981	0.002	0.00137405	3.55E-03	110.700725	0.00031849	0.00038716	17,245	0.087%
LDT2	Gasoline	0.00386298	0.0225109	0.51537784	0.00264459	0.00050752	0.008	0.0082262	1.67E-02	0.00046664	0.002	0.00287917	5.35E-03	267.50798	0.00120157	0.00312395	6,139,423	30.932%
LDT2	Diesel	0.01204095	0.02705101	0.12619247	0.00235166	0.00405174	0.008	0.00822252	2.03E-02	0.00387646	0.002	0.00287788	8.75E-03	248.18257	0.00055928	0.03910126	23,521	0.119%
LDT2	Electricity	0	0	0	0	0	0.008	0.00439513	1.24E-02	0	0.002	0.0015383	3.54E-03	0	0	0	192,705	0.971%
LDT2	Plug-in Hybrid	0.00112447	0.00264746	0.16636518	0.00109656	0.00019976	0.008	0.0039255	1.21E-02	0.00018367	0.002	0.00137392	3.56E-03	110.920179	0.00031837	0.00038604	169,466	0.854%
LHD1	Gasoline	0.00377084	0.01538477	0.59611146	0.00736799	0.00127735	0.008	0.07800002	8.73E-02	0.00117447	0.002	0.02730001	3.05E-02	745.293538	0.00108522	0.00131093	272,268	1.372%
LHD1	Diesel	0.08445882	0.21184876	0.21224557	0.00568126	0.01760044	0.012	0.07800002	1.08E-01	0.01683906	0.003	0.02730001	4.71E-02	599.57339	0.00392295	0.09446303	170,599	0.860%
LHD1	Electricity	0	0	0	0	0	0.008	0.03900001	4.70E-02	0	0.002	0.01365	1.57E-02	0	0	0	363,963	1.834%
LHD2	Gasoline	0.0033622	0.01896019	0.60117413	0.00829509	0.00126889	0.008	0.09100003	1.00E-01	0.0011667	0.002	0.03185001	3.50E-02	839.072635	0.00099179	0.00179332	30,808	0.155%
LHD2	Diesel	0.09997819	0.26897936	0.25369228	0.00661105	0.02105596	0.012	0.09100003	1.24E-01	0.02014508	0.003	0.03185001	5.50E-02	697.698865	0.0046438	0.10992274	78,578	0.396%
LHD2	Electricity	0	0	0	0	0	0.008	0.04550001	5.35E-02	0	0.002	0.015925	1.79E-02	0	0	0	87,635	0.442%
MCY	Gasoline	0.74118927	0.45622951	9.31642171	0.00183231	0.00215474	0.004	0.012	1.82E-02	0.00200875	0.001	0.0042	7.21E-03	185.344006	0.12452382	0.0346468	94,644	0.477%
MDV	Gasoline	0.00403005	0.02348528	0.52955741	0.00320425	0.00050911	0.008	0.00833255	1.68E-02	0.00046811	0.002	0.00291639	5.38E-03	324.119593	0.00124308	0.00319704	3,571,072	17.992%
MDV	Diesel	0.00409103	0.00869237	0.1338482	0.00305609	0.000826	0.008	0.00833977	1.72E-02	0.00079027	0.002	0.00291892	5.71E-03	322.525671	0.00019002	0.05081405	38,538	0.194%
MDV	Electricity	0	0	0	0	0	0.008	0.00440071	1.24E-02	0	0.002	0.00154025	3.54E-03	0	0	0	175,311	0.883%
MDV	Plug-in Hybrid	0.00112425	0.00264693	0.16633286	0.00109634	0.00020075	0.008	0.0039294	1.21E-02	0.00018458	0.002	0.00137529	3.56E-03	110.898238	0.00031901	0.00038777	108,413	0.546%
MH	Gasoline	0.01142326	0.19816409	0.15629488	0.01922666	0.00149644	0.012	0.04501744	5.85E-02	0.00137592	0.003	0.0157561	2.01E-02	1944.83407	0.00400608	0.01815071	10,361	0.052%
MH	Diesel	0.07893124	2.41213789	0.2246333	0.01031493	0.0170253	0.016	0.04478528	7.78E-02	0.01628879	0.004	0.01567485	3.60E-02	1088.58841	0.00366621	0.17150755	5,604	0.028%
Motor Coach	Diesel	0.0105294	0.93176587	0.03590305	0.01450116	0.02366154	0.012	0.08147289	1.17E-01	0.02263795	0.003	0.02851551	5.42E-02	1531.3699	0.00048906	0.24126795	10,560	0.053%
OBUS	Gasoline	0.01386192	0.19927846	0.26079934	0.01498922	0.00132669	0.012	0.0447987	5.81E-02	0.00121984	0.003	0.01567955	1.99E-02	1516.20399	0.00340561	0.01337111	4,890	0.025%
OBUS	Electricity	0	0	0	0	0	0.012	0.02239935	3.44E-02	0	0.003	0.00783977	1.08E-02	0	0	0	5,755	0.029%
PTO	Diesel	0.01544193	2.64161029	0.19076337	0.01678463	0.00424273	0	0	4.24E-03	0.00405919	0	0	4.06E-03	1772.51162	0.00071724	0.27925993	3,634	0.018%
PTO	Electricity	0	0	0	0	0	0	0	0.00E+00	0	0	0	0.00E+00	0	0	0	3,181	0.016%
SBUS	Gasoline	0.00854787	0.08385948	0.18662578	0.00702598	0.00126284	0.008	0.04491714	5.42E-02	0.00116114	0.002	0.015721	1.89E-02	710.698281	0.00195444	0.00855766	3,886	0.020%
SBUS	Diesel	0.0070213	0.38100114	0.0554501	0.00991337	0.00340849	0.012	0.04491714	6.03E-02	0.00326104	0.003	0.015721	2.20E-02	1046.88487	0.00032612	0.16493714	2,173	0.011%
SBUS	Electricity	0	0	0	0	0	0.00951148	0.02245857	3.20E-02	0	0.00237787	0.0078605	1.02E-02	0	0	0	4,335	0.022%
SBUS	Natural Gas	0.03686001	0.25593901	7.61658104	0	0.00367426	0.012	0.04491714	6.06E-02	0.00337835	0.003	0.015721	2.21E-02	1105.81698	2.5797833	0.22542803	136	0.001%
T6 CAIRP Class 4	Diesel	0.00535331	0.17698059	0.02743731	0.00961779	0.00539236	0.012	0.04231382	5.97E-02	0.00515908	0.003	0.01480984	2.30E-02	1015.67025	0.00024865	0.16001926	78	0.000%
T6 CAIRP Class 4	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	108	0.001%
T6 CAIRP Class 5	Diesel	0.00536452	0.17834586	0.02748458	0.00962183	0.00540385	0.012	0.04231382	5.97E-02	0.00517009	0.003	0.01480984	2.30E-02	1016.09649	0.00024917	0.16008642	107	0.001%
T6 CAIRP Class 5	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	148	0.001%
T6 CAIRP Class 6	Diesel	0.00533878	0.17772798	0.02737293	0.00960713	0.00541065	0.012	0.04231382	5.97E-02	0.00517659	0.003	0.01480984	2.30E-02	1014.54439	0.00024797	0.15984188	278	0.001%
T6 CAIRP Class 6	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	389	0.002%
T6 CAIRP Class 7	Diesel	0.00574812	0.19401442	0.02947054	0.00848649	0.00573029	0.012	0.04231382	6.00E-02	0.0054824	0.003	0.01480984	2.33E-02	896.200787	0.00026699	0.1411968	3,181	0.016%
T6 CAIRP Class 7	Electricity	0	0	0	0	0	0.012	0.02115691	3.32E-02	0	0.003	0.00740492	1.04E-02	0	0	0	998	0.005%
T6 Instate Delivery Class 4	Diesel	0.00607633	0.35919081	0.05332779	0.00993841	0.00191344	0.012	0.04756293	6.15E-02	0.00183066	0.003	0.01664703	2.15E-02	1049.52887	0.00028223	0.1653537	8,461	0.043%
T6 Instate Delivery Class 4	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	9,044	0.046%
T6 Instate Delivery Class 4	Natural Gas	0.0124699	0.06018895	3.81706837	0	0.00201405	0.012	0.04756293	6.16E-02	0.00185185	0.003	0.01664703	2.15E-02	1006.94621	0.87275163	0.20527257	114	0.001%
T6 Instate Delivery Class 5	Diesel	0.00610019	0.35950201	0.05333926	0.00995561	0.00191513	0.012	0.04756293	6.15E-02	0.00183229	0.003	0.01664703	2.15E-02	1051.3447	0.00028334	0.16563979	6,891	0.035%
T6 Instate Delivery Class 5	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	7,381	0.037%
T6 Instate Delivery Class 5	Natural Gas	0.01246764	0.0604485	3.81644859	0	0.00201256	0.012	0.04756293	6.16E-02	0.00185047	0.003	0.01664703	2.15E-02	1005.69819	0.87259326	0.20501816	91	0.000%
T6 Instate Delivery Class 6	Diesel	0.00607694	0.36420953	0.05342385	0.00994623	0.00192018	0.012	0.04756293	6.15E-02	0.00183711	0.003	0.01664703	2.15E-02	1050.35475	0.00028226	0.16548382	14,294	0.072%
T6 Instate Delivery Class 6	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	15,322	0.077%
T6 Instate Delivery Class 6	Natural Gas	0.0124694	0.06024661	3.81693069	0	0.00201372	0.012	0.04756293	6.16E-02	0.00185154	0.003	0.01664703	2.15E-02	1006.19038	0.87271645	0.20511849	190	0.001%
T6 Instate Delivery Class 7	Diesel	0.00807401	0.62210398	0.07036592	0.01021358	0.00249264	0.012	0.04756293	6.21E-02	0.00238481	0.003	0.01664703	2.20E-02	1078.58751	0.00037502	0.1699319	7,442	0.037%
T6 Instate Delivery Class 7	Electricity	0	0	0	0	0	0.012	0.02378147	3.58E-02	0	0.003	0.00832351	1.13E-02	0	0	0	4,315	0.022%
T6 Instate Delivery Class 7	Natural Gas	0.01190704	0.12539626	3.67055795	0	0.00164394	0.012	0.04756293	6.12E-02	0.00151155	0.003	0.01664703	2.12E-02	1038.93127	0.83335812	0.21179294	167	0.001%
T6 Instate Other Class 4	Diesel	0.00550398	0.27303652	0.04249619	0.00961383	0.00313422	0.012	0.04486375	6.00E-02	0.00299864	0.003	0.01570231	2.17E-02	1015.25244	0.00025565	0.15995344	11,239	0.057%
T6 Instate Other Class 4	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	12,754	0.064%
T6 Instate Other Class 4	Natural Gas	0.00996286	0.05200544	2.67171929	0	0.00155653	0.012	0.04486375	5.84E-02	0.00143117	0.003	0.01570231	2.01E-02	878.366495	0.69728711	0.17906076	154	0.001%
T6 Instate Other Class 5	Diesel	0.00550875	0.26976881	0.04238524	0.00962764	0.00312628	0.012	0.04486375	6.00E-02	0.00299104	0.003	0.01570231	2.17E-02	1016.71081	0.00025587	0.1601832	28,910	0.146%
T6 Instate Other Class 5	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	32,816	0.165%
T6 Instate Other Class 5	Natural Gas	0.00996129	0.05214355	2.67184548	0	0.00155571	0.012	0.04486375	5.84E-02	0.00143042	0.003	0.01570231	2.01E-02	877.239963	0.69717717	0.17883111	389	0.002%
T6 Instate Other Class 6	Diesel	0.00551606	0.2743626	0.04247105	0.00962082	0.00314436	0.012	0.04486375	6.00E-02	0.00300833	0.003	0.01570231	2.17E-02	1015.99041	0.00025621	0.1600697	18,259	0.092%
T6 Instate Other Class 6	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	20,719	0.104%

T6 Instate Other Class 6	Natural Gas	0.00996074	0.05219138	2.67188919	0	0.00155542	0.012	0.04486375	5.84E-02	0.00143015	0.003	0.01570231	2.01E-02	877.304902	0.6971391	0.17884434	246	0.001%
T6 Instate Other Class 7	Diesel	0.00725474	0.44859093	0.0526709	0.00973444	0.00398851	0.012	0.04486375	6.09E-02	0.00381597	0.003	0.01570231	2.25E-02	1027.9894	0.00033696	0.16196015	10,798	0.054%
T6 Instate Other Class 7	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	7,722	0.039%
T6 Instate Other Class 7	Natural Gas	0.00952218	0.09190463	2.71845936	0	0.00132725	0.012	0.04486375	5.82E-02	0.00122035	0.003	0.01570231	1.99E-02	895.033435	0.66644452	0.18245842	230	0.001%
T6 Instate Tractor Class 6	Diesel	0.00537021	0.25825315	0.04130506	0.00964309	0.00307233	0.012	0.04486375	5.99E-02	0.00293942	0.003	0.01570231	2.16E-02	1018.34237	0.00024943	0.16044026	349	0.002%
T6 Instate Tractor Class 6	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	413	0.002%
T6 Instate Tractor Class 6	Natural Gas	0.00995858	0.05238107	2.67206253	0	0.00155429	0.012	0.04486375	5.84E-02	0.00142911	0.003	0.01570231	2.01E-02	876.707281	0.69698809	0.17872251	5	0.000%
T6 Instate Tractor Class 7	Diesel	0.00687777	0.46252307	0.05242877	0.00887055	0.00394525	0.012	0.04486375	6.08E-02	0.00377458	0.003	0.01570231	2.25E-02	936.759109	0.00031945	0.14758678	4,393	0.022%
T6 Instate Tractor Class 7	Electricity	0	0	0	0	0	0.012	0.02243187	3.44E-02	0	0.003	0.00785116	1.09E-02	0	0	0	977	0.005%
T6 Instate Tractor Class 7	Natural Gas	0.00957365	0.0868178	2.70880961	0	0.0013534	0.012	0.04486375	5.82E-02	0.0012444	0.003	0.01570231	1.99E-02	873.706489	0.67004692	0.17811078	85	0.000%
T6 OOS Class 4	Diesel	0.00523573	0.22084605	0.02681694	0.00902667	0.00556473	0.012	0.04231382	5.99E-02	0.005324	0.003	0.01480984	2.31E-02	953.245823	0.00024319	0.15018427	104	0.001%
T6 OOS Class 5	Diesel	0.00525717	0.22320065	0.02690027	0.00903367	0.00558455	0.012	0.04231382	5.99E-02	0.00534296	0.003	0.01480984	2.32E-02	953.984858	0.00024418	0.1503007	143	0.001%
T6 OOS Class 6	Diesel	0.00520914	0.21828244	0.02670662	0.00900788	0.00554059	0.012	0.04231382	5.99E-02	0.00530091	0.003	0.01480984	2.31E-02	951.261632	0.00024195	0.14987166	373	0.002%
T6 OOS Class 7	Diesel	0.00562184	0.23072092	0.028825	0.00811832	0.00587238	0.012	0.04231382	6.02E-02	0.00561834	0.003	0.01480984	2.34E-02	857.320778	0.00026112	0.13507124	2,709	0.014%
T6 Public Class 4	Diesel	0.01498285	0.62502451	0.06304639	0.01036458	0.00452917	0.012	0.04616939	6.27E-02	0.00433324	0.003	0.01615929	2.35E-02	1094.53341	0.00069591	0.17244418	664	0.003%
T6 Public Class 4	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	593	0.003%
T6 Public Class 4	Natural Gas	0.01260624	0.06060588	3.05753527	0	0.00178268	0.012	0.04616939	6.00E-02	0.0016391	0.003	0.01615929	2.08E-02	983.770252	0.88229417	0.200548	47	0.000%
T6 Public Class 5	Diesel	0.01323246	0.5586754	0.06153531	0.01037626	0.00394678	0.012	0.04616939	6.21E-02	0.00377605	0.003	0.01615929	2.29E-02	1095.76763	0.00061461	0.17263864	2,288	0.012%
T6 Public Class 5	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	2,041	0.010%
T6 Public Class 5	Natural Gas	0.01250159	0.07791035	3.06543649	0	0.00170041	0.012	0.04616939	5.99E-02	0.00156346	0.003	0.01615929	2.07E-02	993.883701	0.87496958	0.20260969	184	0.001%
T6 Public Class 6	Diesel	0.01284223	0.54102616	0.05971466	0.01034237	0.00394611	0.012	0.04616939	6.21E-02	0.0037754	0.003	0.01615929	2.29E-02	1092.18865	0.00059649	0.17207477	1,341	0.007%
T6 Public Class 6	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	1,184	0.006%
T6 Public Class 6	Natural Gas	0.01257476	0.06583351	3.06075942	0	0.00175781	0.012	0.04616939	5.99E-02	0.00161624	0.003	0.01615929	2.08E-02	984.202643	0.88009084	0.20063615	97	0.000%
T6 Public Class 7	Diesel	0.01084328	0.46396637	0.05328653	0.01021278	0.00350453	0.012	0.04616939	6.17E-02	0.00335292	0.003	0.01615929	2.25E-02	1078.50365	0.00050364	0.16991869	4,018	0.020%
T6 Public Class 7	Electricity	0	0	0	0	0	0.012	0.0230847	3.51E-02	0	0.003	0.00807964	1.11E-02	0	0	0	2,899	0.015%
T6 Public Class 7	Natural Gas	0.01259934	0.06176807	3.05888107	0	0.00177714	0.012	0.04616939	5.99E-02	0.00163401	0.003	0.01615929	2.08E-02	988.341442	0.8818114	0.20147987	307	0.002%
T6 Utility Class 5	Diesel	0.00510292	0.19303174	0.03563595	0.00963278	0.00232076	0.012	0.0454967	5.98E-02	0.00222036	0.003	0.01592385	2.11E-02	1017.25285	0.00023702	0.1602686	151	0.001%
T6 Utility Class 5	Electricity	0	0	0	0	0	0.012	0.02274835	3.47E-02	0	0.003	0.00796192	1.10E-02	0	0	0	215	0.001%
T6 Utility Class 5	Natural Gas	0.01113687	0.05410456	2.74533962	0	0.0016363	0.012	0.0454967	5.91E-02	0.00150452	0.003	0.01592385	2.04E-02	915.657521	0.77945454	0.18666278	1	0.000%
T6 Utility Class 6	Diesel	0.00510387	0.18876773	0.03564257	0.00963328	0.00230327	0.012	0.0454967	5.98E-02	0.00220363	0.003	0.01592385	2.11E-02	1017.30574	0.00023706	0.16027693	29	0.000%
T6 Utility Class 6	Electricity	0	0	0	0	0	0.012	0.02274835	3.47E-02	0	0.003	0.00796192	1.10E-02	0	0	0	41	0.000%
T6 Utility Class 6	Natural Gas	0.01113687	0.05410456	2.74533962	0	0.0016363	0.012	0.0454967	5.91E-02	0.00150452	0.003	0.01592385	2.04E-02	915.672701	0.77945454	0.18666587	0	0.000%
T6 Utility Class 7	Diesel	0.00505398	0.18395083	0.03529418	0.00963926	0.00229066	0.012	0.0454967	5.98E-02	0.00219156	0.003	0.01592385	2.11E-02	1017.93803	0.00023474	0.16037655	39	0.000%
T6 Utility Class 7	Electricity	0	0	0	0	0	0.012	0.02274835	3.47E-02	0	0.003	0.00796192	1.10E-02	0	0	0	57	0.000%
T6 Utility Class 7	Natural Gas	0.01113687	0.05410456	2.74533962	0	0.0016363	0.012	0.0454967	5.91E-02	0.00150452	0.003	0.01592385	2.04E-02	915.676716	0.77945454	0.18666669	0	0.000%
T6TS	Gasoline	0.01084029	0.06843496	0.18015965	0.01520785	0.00149603	0.012	0.04501744	5.85E-02	0.00137555	0.003	0.0157561	2.01E-02	1538.31927	0.00286904	0.00665025	28,077	0.141%
T6TS	Electricity	0	0	0	0	0	0.012	0.02250872	3.45E-02	0	0.003	0.00787805	1.09E-02	0	0	0	32,146	0.162%
T7 CAIRP Class 8	Diesel	0.01142945	1.1999551	0.03867049	0.01210767	0.02970522	0.03600001	0.08183622	1.48E-01	0.02842019	0.009	0.02864268	6.61E-02	1278.60958	0.00053087	0.20144546	20,863	0.105%
T7 CAIRP Class 8	Electricity	0	0	0	0	0	0.03600001	0.04094855	7.69E-02	0	0.009	0.01433199	2.33E-02	0	0	0	5,987	0.030%
T7 CAIRP Class 8	Natural Gas	0.01336265	0.15271577	2.88343058	0	0.00196622	0.03600001	0.08182984	1.20E-01	0.00180787	0.009	0.02864044	3.94E-02	1022.83593	0.93523393	0.20851179	38	0.000%
T7 NNOOS Class 8	Diesel	0.0111129	1.32505535	0.03762449	0.01159414	0.02931605	0.03600001	0.08182321	1.47E-01	0.02804785	0.009	0.02863812	6.57E-02	1224.37921	0.00051617	0.19290144	31,925	0.161%
T7 NOOS Class 8	Diesel	0.01146354	1.36295278	0.03878215	0.01158685	0.03103513	0.03600001	0.08184347	1.49E-01	0.02969256	0.009	0.02864521	6.73E-02	1223.60952	0.00053245	0.19278018	11,600	0.058%
T7 Other Port Class 8	Diesel	0.01003354	1.2308961	0.06348314	0.01298662	0.01642434	0.03600001	0.09415738	1.47E-01	0.01571383	0.009	0.03295508	5.77E-02	1371.42993	0.00046603	0.21606934	1,988	0.010%
T7 Other Port Class 8	Electricity	0	0	0	0	0	0.03600001	0.04707869	8.31E-02	0	0.009	0.01647754	2.55E-02	0	0	0	502	0.003%
T7 POAK Class 8	Diesel	0.01023526	1.27979046	0.06475946	0.01294363	0.0171346	0.03600001	0.09415738	1.47E-01	0.01639337	0.009	0.03295508	5.83E-02	1366.88986	0.0004754	0.21535405	6,917	0.035%
T7 POAK Class 8	Electricity	0	0	0	0	0	0.03600001	0.04707869	8.31E-02	0	0.009	0.01647754	2.55E-02	0	0	0	1,586	0.008%
T7 POAK Class 8	Natural Gas	0.0167608	0.17252782	4.97691357	0	0.00252429	0.03600001	0.09415738	1.33E-01	0.00232099	0.009	0.03295508	4.43E-02	1151.70121	1.17306642	0.23478183	16	0.000%
T7 Public Class 8	Diesel	0.02852841	1.99900038	0.14812039	0.01541327	0.01034755	0.03600001	0.10684132	1.53E-01	0.00989992	0.009	0.03739446	5.63E-02	1627.69166	0.00132507	0.25644348	9,495	0.048%
T7 Public Class 8	Electricity	0	0	0	0	0	0.03600001	0.05428521	9.03E-02	0	0.009	0.01899982	2.80E-02	0	0	0	6,036	0.030%
T7 Public Class 8	Natural Gas	0.02445005	0.28692171	8.17725606	0	0.00325628	0.03600001	0.10600607	1.45E-01	0.00299403	0.009	0.03710213	4.91E-02	1467.62468	1.71122652	0.29918489	74	0.000%
T7 Single Concrete/Transit Mix Class 8	Diesel	0.00863029	0.80494454	0.04368774	0.01371137	0.01372614	0.03600001	0.08862722	1.38E-01	0.01313236	0.009	0.03101953	5.32E-02	1447.96572	0.00040085	0.22812759	1,653	0.008%
T7 Single Concrete/Transit Mix Class 8	Electricity	0	0	0	0	0	0.03600001	0.0443891	8.04E-02	0	0.009	0.01553618	2.45E-02	0	0	0	2,292	0.012%
T7 Single Concrete/Transit Mix Class 8	Natural Gas	0.01524607	0.16369815	4.04417909	0	0.00225513	0.03600001	0.08862626	1.27E-01	0.00207351	0.009	0.03101919	4.21E-02	1124.66721	1.06705219	0.22927077	102	0.001%
T7 Single Dump Class 8	Diesel	0.01037331	1.09445197	0.05621439	0.01413058	0.01760041	0.03600001	0.08698802	1.41E-01	0.01683903	0.009	0.03044581	5.63E-02	1492.23579	0.00048181	0.23510236	6,233	0.031%
T7 Single Dump Class 8	Electricity	0	0	0	0	0	0.03600001	0.04437007	8.04E-02	0	0.009	0.01552953	2.45E-02	0	0	0	5,553	0.028%
T7 Single Dump Class 8	Natural Gas	0.01523145	0.19775188	4.5089662	0	0.00217935	0.03600001	0.08708374	1.25E-01	0.00200383	0.009	0.03047931	4.15E-02	1149.96618	1.06602887	0.23442813	378	0.002%
T7 Single Other Class 8	Diesel	0.01058317	1.11444862	0.05732545	0.01420834	0.01792696	0.03600001	0.08646576	1.40E-01	0.01715144	0.009	0.03026301	5.64E-02	1500.44767	0.00049156	0.23639614	9,342	0.047%
T7 Single Other Class 8	Electricity	0	0	0	0	0	0.03600001	0.04437461	8.04E-02	0	0.009	0.01553111	2.45E-02	0	0	0	8,173	0.041%
T7 Single Other Class 8	Natural Gas	0.01522781	0.21015111	4.65611197	0	0.0021545	0.03600001	0.08625669	1.24E-01	0.00198098	0.009	0.03018984	4.12E-02	1158.36123	1.06577383	0.23613951	595	0.003%
T7 SWCV Class 8	Diesel	0.04722355	6.59317938	0.12734016	0.03812224	0.01100043	0.03600001	0.21000006	2.57E-01	0.01052456	0.009	0.07350002	9.30E-02	4025.83359	0.00219341	0.63427172	1,457	0.007%
T7 SWCV Class 8	Electricity	0	0	0	0	0	0.03600001	0.10500003	1.41E-01	0	0.009	0.03675001	4.58E-02	0	0	0	6,548	0.033%
T7 SWCV Class 8	Natural Gas	0.01342572	0.34561962	10.7970049	0	0.00124147	0.03600001	0.21000006	2.47E-01	0.00114149	0.009	0.07350002	8.36E-02	1335.91414	0.66421448	0.27233484	9,379	0.047%
T7 Tractor Class 8	Diesel	0.01027815	1.18355508	0.04817806	0.01211211	0.02186704	0.03600001	0.08572664	1.44E-01	0.02092108	0.009	0.03000432	5.99E-02	1279.07892	0.00047739	0.20151941	19,023	0.096%
T7 Tractor Class 8	Electricity	0	0	0	0	0	0.03600001	0.04328643	7.93E-02	0	0.009	0.01515025	2.42E-02	0	0	0	3,971	0.020%
T7 Tractor Class 8	Natural Gas	0.01457109	0.1807327	3.96921473	0	0.00211835	0.03600001	0.08554661	1.24E-01	0.00194774	0.009	0.02994131	4.09E-02	1079.44814	1.01981133	0.22005256	1,657	0.008%
T7 Utility Class 8	Diesel	0.01128523	1.08483601	0.10363121	0.01468938	0.00732592	0.03600001	0.10090858	1.44E-01	0.007009	0.009	0.035318	5.13E-02	1551.24681	0.00052417	0.24439957	167	0.001%
T7 Utility Class 8	Electricity	0	0	0	0	0	0.03600001	0.05193446	8.79E-02	0	0.009	0.01817706	2.72E-02	0	0	0	124	0.001%
T7IS	Gasoline	0.44778432	2.29651411	30.4738117	0.01807443	0.00154855	0.02000001	0.09610002	1.18E-01	0.00142383	0.005	0.03363501	4.01E-02	1828.28183	0.09656296	0.10461038	102	0.001%
T7IS	Electricity	0	0	0	0	0	0.02000001	0.04852567	6.85E-02	0	0.005	0.01698399	2.20E-02	0	0	0	103	0.001%
UBUS	Gasoline	0.00327092	0.01612183	0.58253595	0.00840481	0.00130237	0.008	0.09100003	1.00E-01	0.00119748	0.002	0.03185001	3.50E-02	850.17174	0.0012323	0.00278681	4,001	0.020%
UBUS	Electricity	0	0	0	0	0	0.03159628	0.05500002	8.66E-02	0	0.00789907	0.01925001	2.71E-02	0	0	0	31,126	0.157%
																	19,848,233	100.000%

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2045
Season: Annual
Vehicle Classification: EMFAC202x Categori
Units: miles/day for CVMT and EVMT, trips/

lbs/Mile 1.0E-06

Vehicle Category	Fuel	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUNEX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
All Other Buses	Diesel	2.511E-05	1.049E-03	1.713E-04	2.120E-05	6.648E-06	2.646E-05	1.017E-04	1.348E-04	6.361E-06	6.614E-06	3.560E-05	4.857E-05	2.239E+00	1.166E-06	3.527E-04
All Other Buses	Natural Gas	2.683E-05	1.697E-04	7.543E-03	0.000E+00	3.839E-06	2.646E-05	1.017E-04	1.320E-04	3.530E-06	6.614E-06	3.560E-05	4.574E-05	1.975E+00	1.878E-03	4.025E-04
LDA	Gasoline	5.890E-06	4.161E-05	9.340E-04	4.843E-06	1.084E-06	1.764E-05	1.502E-05	3.374E-05	9.966E-07	4.409E-06	5.257E-06	1.066E-05	4.898E-01	1.925E-06	6.340E-06
LDA	Diesel	9.009E-06	2.790E-05	2.743E-04	3.761E-06	2.201E-06	1.764E-05	1.506E-05	3.490E-05	2.106E-06	4.409E-06	5.272E-06	1.179E-05	3.969E-01	4.185E-07	6.253E-05
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.673E-06	2.731E-05	0.000E+00	4.409E-06	3.385E-06	7.795E-06	0.000E+00	0.000E+00	0.000E+00
LDA	Plug-in Hybrid	2.481E-06	5.842E-06	3.672E-04	2.420E-06	4.453E-07	1.764E-05	8.637E-06	2.672E-05	4.094E-07	4.409E-06	3.023E-06	7.842E-06	2.448E-01	7.089E-07	8.679E-07
LDT1	Gasoline	6.644E-06	4.636E-05	1.023E-03	5.601E-06	1.161E-06	1.764E-05	1.826E-05	3.706E-05	1.067E-06	4.409E-06	6.391E-06	1.187E-05	5.666E-01	2.123E-06	6.695E-06
LDT1	Diesel	2.656E-05	5.898E-05	2.795E-04	6.993E-06	8.954E-06	1.764E-05	1.816E-05	4.475E-05	8.566E-06	4.409E-06	6.357E-06	1.933E-05	7.380E-01	1.234E-06	1.163E-04
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.689E-06	2.733E-05	0.000E+00	4.409E-06	3.391E-06	7.800E-06	0.000E+00	0.000E+00	0.000E+00
LDT1	Plug-in Hybrid	2.474E-06	5.825E-06	3.660E-04	2.413E-06	4.311E-07	1.764E-05	8.655E-06	2.672E-05	3.964E-07	4.409E-06	3.029E-06	7.835E-06	2.441E-01	7.022E-07	8.535E-07
LDT2	Gasoline	8.516E-06	4.963E-05	1.136E-03	5.830E-06	1.119E-06	1.764E-05	1.814E-05	3.689E-05	1.029E-06	4.409E-06	6.347E-06	1.179E-05	5.897E-01	2.649E-06	6.887E-06
LDT2	Diesel	2.655E-05	5.964E-05	2.782E-04	5.184E-06	8.932E-06	1.764E-05	1.813E-05	4.470E-05	8.546E-06	4.409E-06	6.345E-06	1.930E-05	5.471E-01	1.233E-06	8.620E-05
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.690E-06	2.733E-05	0.000E+00	4.409E-06	3.391E-06	7.801E-06	0.000E+00	0.000E+00	0.000E+00
LDT2	Plug-in Hybrid	2.479E-06	5.837E-06	3.668E-04	2.417E-06	4.404E-07	1.764E-05	8.654E-06	2.673E-05	4.049E-07	4.409E-06	3.029E-06	7.843E-06	2.445E-01	7.019E-07	8.511E-07
LHD1	Gasoline	8.313E-06	3.392E-05	1.314E-03	1.624E-05	2.816E-06	1.764E-05	1.720E-04	1.924E-04	2.589E-06	4.409E-06	6.019E-05	6.718E-05	1.643E+00	2.392E-06	2.890E-06
LHD1	Diesel	1.862E-04	4.670E-04	4.679E-04	1.252E-05	3.880E-05	2.646E-05	1.720E-04	2.372E-04	3.712E-05	6.614E-06	6.019E-05	1.039E-04	1.322E+00	8.649E-06	2.083E-04
LHD1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	8.598E-05	1.036E-04	0.000E+00	4.409E-06	3.009E-05	3.450E-05	0.000E+00	0.000E+00	0.000E+00
LHD2	Gasoline	7.412E-06	4.180E-05	1.325E-03	1.829E-05	2.797E-06	1.764E-05	2.006E-04	2.211E-04	2.572E-06	4.409E-06	7.022E-05	7.720E-05	1.850E+00	2.186E-06	3.954E-06
LHD2	Diesel	2.204E-04	5.930E-04	5.593E-04	1.457E-05	4.642E-05	2.646E-05	2.006E-04	2.735E-04	4.441E-05	6.614E-06	7.022E-05	1.212E-04	1.538E+00	1.024E-05	2.423E-04
LHD2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	1.003E-04	1.179E-04	0.000E+00	4.409E-06	3.511E-05	3.952E-05	0.000E+00	0.000E+00	0.000E+00
MCY	Gasoline	1.634E-03	1.006E-03	2.054E-02	4.040E-06	4.750E-06	8.818E-06	2.646E-05	4.002E-05	4.428E-06	2.205E-06	9.259E-06	1.589E-05	4.086E-01	2.745E-04	7.638E-05
MDV	Gasoline	8.885E-06	5.178E-05	1.167E-03	7.064E-06	1.122E-06	1.764E-05	1.837E-05	3.713E-05	1.032E-06	4.409E-06	6.429E-06	1.187E-05	7.146E-01	2.740E-06	7.048E-06
MDV	Diesel	9.019E-06	1.916E-05	2.951E-04	6.737E-06	1.821E-06	1.764E-05	1.839E-05	3.784E-05	1.742E-06	4.409E-06	6.435E-06	1.259E-05	7.110E-01	4.189E-07	1.120E-04
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.702E-06	2.734E-05	0.000E+00	4.409E-06	3.396E-06	7.805E-06	0.000E+00	0.000E+00	0.000E+00
MDV	Plug-in Hybrid	2.479E-06	5.835E-06	3.667E-04	2.417E-06	4.426E-07	1.764E-05	8.663E-06	2.674E-05	4.069E-07	4.409E-06	3.032E-06	7.848E-06	2.445E-01	7.033E-07	8.549E-07
MH	Gasoline	2.518E-05	4.369E-04	3.446E-04	4.239E-05	3.299E-06	2.646E-05	9.925E-05	1.290E-04	3.033E-06	6.614E-06	3.474E-05	4.438E-05	4.288E+00	8.832E-06	4.002E-05
MH	Diesel	1.740E-04	5.318E-03	4.952E-04	2.274E-05	3.753E-05	3.527E-05	9.873E-05	1.715E-04	3.591E-05	8.818E-06	3.456E-05	7.929E-05	2.400E+00	8.083E-06	3.781E-04
Motor Coach	Diesel	2.321E-05	2.054E-03	7.915E-05	3.197E-05	5.216E-05	2.646E-05	1.796E-04	2.582E-04	4.991E-05	6.614E-06	6.287E-05	1.194E-04	3.376E+00	1.078E-06	5.319E-04
OBUS	Gasoline	3.056E-05	4.393E-04	5.750E-04	3.305E-05	2.925E-06	2.646E-05	9.876E-05	1.281E-04	2.689E-06	6.614E-06	3.457E-05	4.387E-05	3.343E+00	7.508E-06	2.948E-05
OBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.938E-05	7.584E-05	0.000E+00	6.614E-06	1.728E-05	2.390E-05	0.000E+00	0.000E+00	0.000E+00
PTO	Diesel	3.404E-05	5.824E-03	4.206E-04	3.700E-05	9.354E-06	0.000E+00	0.000E+00	9.354E-06	8.949E-06	0.000E+00	0.000E+00	8.949E-06	3.908E+00	1.581E-06	6.157E-04
PTO	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SBUS	Gasoline	1.884E-05	1.849E-04	4.114E-04	1.549E-05	2.784E-06	1.764E-05	9.902E-05	1.194E-04	2.560E-06	4.409E-06	3.466E-05	4.163E-05	1.567E+00	4.309E-06	1.887E-05
SBUS	Diesel	1.548E-05	8.400E-04	1.222E-04	2.186E-05	7.514E-06	2.646E-05	9.902E-05	1.330E-04	7.189E-06	6.614E-06	3.466E-05	4.846E-05	2.308E+00	7.190E-07	3.636E-04
SBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.097E-05	4.951E-05	7.048E-05	0.000E+00	5.242E-06	1.733E-05	2.257E-05	0.000E+00	0.000E+00	0.000E+00
SBUS	Natural Gas	8.126E-05	5.642E-04	1.679E-02	0.000E+00	8.100E-06	2.646E-05	9.902E-05	1.336E-04	7.448E-06	6.614E-06	3.466E-05	4.872E-05	2.438E+00	5.687E-03	4.970E-04
T6 CAIRP Class 4	Diesel	1.180E-05	3.902E-04	6.049E-05	2.120E-05	1.189E-05	2.646E-05	9.329E-05	1.316E-04	1.137E-05	6.614E-06	3.265E-05	5.064E-05	2.239E+00	5.482E-07	3.528E-04
T6 CAIRP Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 5	Diesel	1.183E-05	3.932E-04	6.059E-05	2.121E-05	1.191E-05	2.646E-05	9.329E-05	1.317E-04	1.140E-05	6.614E-06	3.265E-05	5.066E-05	2.240E+00	5.493E-07	3.529E-04
T6 CAIRP Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 6	Diesel	1.177E-05	3.918E-04	6.035E-05	2.118E-05	1.193E-05	2.646E-05	9.329E-05	1.317E-04	1.141E-05	6.614E-06	3.265E-05	5.068E-05	2.237E+00	5.467E-07	3.524E-04
T6 CAIRP Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 7	Diesel	1.267E-05	4.277E-04	6.497E-05	1.871E-05	1.263E-05	2.646E-05	9.329E-05	1.324E-04	1.209E-05	6.614E-06	3.265E-05	5.135E-05	1.976E+00	5.886E-07	3.113E-04
T6 CAIRP Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.664E-05	7.310E-05	0.000E+00	6.614E-06	1.632E-05	2.294E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 4	Diesel	1.340E-05	7.919E-04	1.176E-04	2.191E-05	4.218E-06	2.646E-05	1.049E-04	1.355E-04	4.036E-06	6.614E-06	3.670E-05	4.735E-05	2.314E+00	6.222E-07	3.645E-04
T6 Instate Delivery Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 4	Natural Gas	2.749E-05	1.327E-04	8.415E-03	0.000E+00	4.440E-06	2.646E-05	1.049E-04	1.358E-04	4.083E-06	6.614E-06	3.670E-05	4.740E-05	2.220E+00	1.924E-03	4.525E-04
T6 Instate Delivery Class 5	Diesel	1.345E-05	7.926E-04	1.176E-04	2.195E-05	4.222E-06	2.646E-05	1.049E-04	1.355E-04	4.039E-06	6.614E-06	3.670E-05	4.735E-05	2.318E+00	6.246E-07	3.652E-04
T6 Instate Delivery Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 5	Natural Gas	2.749E-05	1.333E-04	8.414E-03	0.000E+00	4.437E-06	2.646E-05	1.049E-04	1.357E-04	4.080E-06	6.614E-06	3.670E-05	4.739E-05	2.217E+00	1.924E-03	4.520E-04
T6 Instate Delivery Class 6	Diesel	1.340E-05	8.029E-04	1.178E-04	2.193E-05	4.233E-06	2.646E-05	1.049E-04	1.355E-04	4.050E-06	6.614E-06	3.670E-05	4.736E-05	2.316E+00	6.223E-07	3.648E-04
T6 Instate Delivery Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 6	Natural Gas	2.749E-05	1.328E-04	8.415E-03	0.000E+00	4.439E-06	2.646E-05	1.049E-04	1.358E-04	4.082E-06	6.614E-06	3.670E-05	4.740E-05	2.218E+00	1.924E-03	4.522E-04
T6 Instate Delivery Class 7	Diesel	1.780E-05	1.371E-03	1.551E-04	2.252E-05	5.495E-06	2.646E-05	1.049E-04	1.368E-04	5.258E-06	6.614E-06	3.670E-05	4.857E-05	2.378E+00	8.268E-07	3.746E-04
T6 Instate Delivery Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.243E-05	7.888E-05	0.000E+00	6.614E-06	1.835E-05	2.496E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 7	Natural Gas	2.625E-05	2.764E-04	8.092E-03	0.000E+00	3.624E-06	2.646E-05	1.049E-04	1.349E-04	3.332E-06	6.614E-06	3.670E-05	4.665E-05	2.290E+00	1.837E-03	4.669E-04
T6 Instate Other Class 4	Diesel	1.213E-05	6.019E-04	9.369E-05	2.119E-05	6.910E-06	2.646E-05	9.891E-05	1.323E-04	6.611E-06	6.614E-06	3.462E-05	4.784E-05	2.238E+00	5.636E-07	3.526E-04
T6 Instate Other Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 4	Natural Gas	2.196E-05	1.147E-04	5.890E-03	0.000E+00	3.432E-06	2.646E-05	9.891E-05	1.288E-04	3.155E-06	6.614E-06	3.462E-05	4.439E-05	1.936E+00	1.537E-03	3.948E-04
T6 Instate Other Class 5	Diesel	1.214E-05	5.947E-04	9.344E-05	2.123E-05	6.892E-06	2.646E-05	9.891E-05	1.323E-04	6.594E-06	6.614E-06	3.462E-05	4.783E-05	2.241E+00	5.641E-07	3.531E-04
T6 Instate Other Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 5	Natural Gas	2.196E-05	1.150E-04	5.890E-03	0.000E+00	3.430E-06	2.646E-05	9.891E-05	1.288E-04	3.153E-06	6.614E-06	3.462E-05	4.438E-05	1.934E+00	1.537E-03	3.943E-04
T6 Instate Other Class 6	Diesel	1.216E-05	6.049E-04	9.363E-05	2.121E-05	6.932E-06	2.646E-05	9.891E-05	1.323E-04	6.632E-06	6.614E-06	3.462E-05	4.786E-05	2.240E+00	5.648E-07	3.529E-04
T6 Instate Other Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00

T6 Instate Other Class 6	Natural Gas	2.196E-05	1.151E-04	5.890E-03	0.000E+00	3.429E-06	2.646E-05	9.891E-05	1.288E-04	3.153E-06	6.614E-06	3.462E-05	4.438E-05	1.934E+00	1.537E-03	3.943E-04	
T6 Instate Other Class 7	Diesel	1.599E-05	9.890E-04	1.161E-04	2.146E-05	8.793E-06	2.646E-05	9.891E-05	1.342E-04	8.413E-06	6.614E-06	3.462E-05	4.964E-05	2.266E+00	7.429E-07	3.571E-04	
T6 Instate Other Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Other Class 7	Natural Gas	2.099E-05	2.026E-04	5.993E-03	0.000E+00	2.926E-06	2.646E-05	9.891E-05	1.283E-04	2.690E-06	6.614E-06	3.462E-05	4.392E-05	1.973E+00	1.469E-03	4.022E-04	
T6 Instate Tractor Class 6	Diesel	1.184E-05	5.693E-04	9.106E-05	2.126E-05	6.773E-06	2.646E-05	9.891E-05	1.321E-04	6.480E-06	6.614E-06	3.462E-05	4.771E-05	2.245E+00	5.499E-07	3.537E-04	
T6 Instate Tractor Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Tractor Class 6	Natural Gas	2.195E-05	1.155E-04	5.891E-03	0.000E+00	3.427E-06	2.646E-05	9.891E-05	1.288E-04	3.151E-06	6.614E-06	3.462E-05	4.438E-05	1.933E+00	1.537E-03	3.940E-04	
T6 Instate Tractor Class 7	Diesel	1.516E-05	1.020E-03	1.156E-04	1.956E-05	8.698E-06	2.646E-05	9.891E-05	1.341E-04	8.321E-06	6.614E-06	3.462E-05	4.955E-05	2.065E+00	7.043E-07	3.254E-04	
T6 Instate Tractor Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.945E-05	7.591E-05	0.000E+00	6.614E-06	1.731E-05	2.392E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Instate Tractor Class 7	Natural Gas	2.111E-05	1.914E-04	5.972E-03	0.000E+00	2.984E-06	2.646E-05	9.891E-05	1.283E-04	2.743E-06	6.614E-06	3.462E-05	4.397E-05	1.926E+00	1.477E-03	3.927E-04	
T6 OOS Class 4	Diesel	1.154E-05	4.869E-04	5.912E-05	1.990E-05	1.227E-05	2.646E-05	9.329E-05	1.320E-04	1.174E-05	6.614E-06	3.265E-05	5.100E-05	2.102E+00	5.361E-07	3.311E-04	
T6 OOS Class 5	Diesel	1.159E-05	4.921E-04	5.930E-05	1.992E-05	1.231E-05	2.646E-05	9.329E-05	1.321E-04	1.178E-05	6.614E-06	3.265E-05	5.104E-05	2.103E+00	5.383E-07	3.314E-04	
T6 OOS Class 6	Diesel	1.148E-05	4.812E-04	5.888E-05	1.986E-05	1.221E-05	2.646E-05	9.329E-05	1.320E-04	1.169E-05	6.614E-06	3.265E-05	5.095E-05	2.097E+00	5.334E-07	3.304E-04	
T6 OOS Class 7	Diesel	1.239E-05	5.086E-04	6.355E-05	1.790E-05	1.295E-05	2.646E-05	9.329E-05	1.327E-04	1.239E-05	6.614E-06	3.265E-05	5.165E-05	1.890E+00	5.757E-07	2.978E-04	
T6 Public Class 4	Diesel	3.303E-05	1.378E-03	1.390E-04	2.285E-05	9.985E-06	2.646E-05	1.018E-04	1.382E-04	9.553E-06	6.614E-06	3.562E-05	5.179E-05	2.413E+00	1.534E-06	3.802E-04	
T6 Public Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Public Class 4	Natural Gas	2.779E-05	1.336E-04	6.741E-03	0.000E+00	3.930E-06	2.646E-05	1.018E-04	1.322E-04	3.614E-06	6.614E-06	3.562E-05	4.585E-05	2.169E+00	1.945E-03	4.421E-04	
T6 Public Class 5	Diesel	2.917E-05	1.232E-03	1.357E-04	2.288E-05	8.701E-06	2.646E-05	1.018E-04	1.369E-04	8.325E-06	6.614E-06	3.562E-05	5.056E-05	2.416E+00	1.355E-06	3.806E-04	
T6 Public Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Public Class 5	Natural Gas	2.756E-05	1.718E-04	6.758E-03	0.000E+00	3.749E-06	2.646E-05	1.018E-04	1.320E-04	3.447E-06	6.614E-06	3.562E-05	4.569E-05	2.191E+00	1.929E-03	4.467E-04	
T6 Public Class 6	Diesel	2.831E-05	1.193E-03	1.316E-04	2.280E-05	8.700E-06	2.646E-05	1.018E-04	1.369E-04	8.323E-06	6.614E-06	3.562E-05	5.056E-05	2.408E+00	1.315E-06	3.794E-04	
T6 Public Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Public Class 6	Natural Gas	2.772E-05	1.451E-04	6.748E-03	0.000E+00	3.875E-06	2.646E-05	1.018E-04	1.321E-04	3.563E-06	6.614E-06	3.562E-05	4.580E-05	2.170E+00	1.940E-03	4.423E-04	
T6 Public Class 7	Diesel	2.391E-05	1.023E-03	1.175E-04	2.252E-05	7.726E-06	2.646E-05	1.018E-04	1.360E-04	7.392E-06	6.614E-06	3.562E-05	4.963E-05	2.378E+00	1.110E-06	3.746E-04	
T6 Public Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.089E-05	7.735E-05	0.000E+00	6.614E-06	1.781E-05	2.443E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Public Class 7	Natural Gas	2.778E-05	1.362E-04	6.744E-03	0.000E+00	3.918E-06	2.646E-05	1.018E-04	1.322E-04	3.602E-06	6.614E-06	3.562E-05	4.584E-05	2.179E+00	1.944E-03	4.442E-04	
T6 Utility Class 5	Diesel	1.125E-05	4.256E-04	7.856E-05	2.124E-05	5.116E-06	2.646E-05	1.003E-04	1.319E-04	4.895E-06	6.614E-06	3.511E-05	4.661E-05	2.243E+00	5.225E-07	3.533E-04	
T6 Utility Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.015E-05	7.661E-05	0.000E+00	6.614E-06	1.755E-05	2.417E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Utility Class 5	Natural Gas	2.455E-05	1.193E-04	6.052E-03	0.000E+00	3.607E-06	2.646E-05	1.003E-04	1.304E-04	3.317E-06	6.614E-06	3.511E-05	4.504E-05	2.019E+00	1.718E-03	4.115E-04	
T6 Utility Class 6	Diesel	1.125E-05	4.162E-04	7.858E-05	2.124E-05	5.078E-06	2.646E-05	1.003E-04	1.318E-04	4.858E-06	6.614E-06	3.511E-05	4.658E-05	2.243E+00	5.226E-07	3.533E-04	
T6 Utility Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.015E-05	7.661E-05	0.000E+00	6.614E-06	1.755E-05	2.417E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Utility Class 6	Natural Gas	2.455E-05	1.193E-04	6.052E-03	0.000E+00	3.607E-06	2.646E-05	1.003E-04	1.304E-04	3.317E-06	6.614E-06	3.511E-05	4.504E-05	2.019E+00	1.718E-03	4.115E-04	
T6 Utility Class 7	Diesel	1.114E-05	4.055E-04	7.781E-05	2.125E-05	5.050E-06	2.646E-05	1.003E-04	1.318E-04	4.832E-06	6.614E-06	3.511E-05	4.655E-05	2.244E+00	5.175E-07	3.536E-04	
T6 Utility Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	5.015E-05	7.661E-05	0.000E+00	6.614E-06	1.755E-05	2.417E-05	0.000E+00	0.000E+00	0.000E+00	
T6 Utility Class 7	Natural Gas	2.455E-05	1.193E-04	6.052E-03	0.000E+00	3.607E-06	2.646E-05	1.003E-04	1.304E-04	3.317E-06	6.614E-06	3.511E-05	4.504E-05	2.019E+00	1.718E-03	4.115E-04	
T6TS	Gasoline	2.390E-05	1.509E-04	3.972E-04	3.353E-05	3.298E-06	2.646E-05	9.925E-05	1.290E-04	3.033E-06	6.614E-06	3.474E-05	4.438E-05	3.391E+00	6.325E-06	1.466E-05	
T6TS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.646E-05	4.962E-05	7.608E-05	0.000E+00	6.614E-06	1.737E-05	2.398E-05	0.000E+00	0.000E+00	0.000E+00	
T7 CAIRP Class 8	Diesel	2.520E-05	2.645E-03	8.525E-05	2.669E-05	6.549E-05	7.937E-05	1.804E-04	3.253E-04	6.266E-05	1.984E-05	6.315E-05	1.456E-04	2.819E+00	1.170E-06	4.441E-04	
T7 CAIRP Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.028E-05	1.696E-04	0.000E+00	1.984E-05	3.160E-05	5.144E-05	0.000E+00	0.000E+00	0.000E+00	
T7 CAIRP Class 8	Natural Gas	2.946E-05	3.367E-04	6.357E-03	0.000E+00	4.335E-06	7.937E-05	1.804E-04	2.641E-04	3.986E-06	1.984E-05	6.314E-05	8.697E-05	2.255E+00	2.062E-03	4.597E-04	
T7 NNOOS Class 8	Diesel	2.450E-05	2.921E-03	8.295E-05	2.556E-05	6.463E-05	7.937E-05	1.804E-04	3.244E-04	6.183E-05	1.984E-05	6.314E-05	1.448E-04	2.699E+00	1.138E-06	4.253E-04	
T7 NOOS Class 8	Diesel	2.527E-05	3.005E-03	8.550E-05	2.554E-05	6.842E-05	7.937E-05	1.804E-04	3.282E-04	6.546E-05	1.984E-05	6.315E-05	1.485E-04	2.698E+00	1.174E-06	4.250E-04	
T7 Other Port Class 8	Diesel	2.212E-05	2.714E-03	1.400E-04	2.863E-05	3.621E-05	7.937E-05	2.076E-04	3.232E-04	3.464E-05	1.984E-05	7.265E-05	1.271E-04	3.023E+00	1.027E-06	4.763E-04	
T7 Other Port Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.038E-04	1.832E-04	0.000E+00	1.984E-05	3.633E-05	5.617E-05	0.000E+00	0.000E+00	0.000E+00	
T7 POAK Class 8	Diesel	2.256E-05	2.821E-03	1.428E-04	2.854E-05	3.777E-05	7.937E-05	2.076E-04	3.247E-04	3.614E-05	1.984E-05	7.265E-05	1.286E-04	3.013E+00	1.048E-06	4.748E-04	
T7 POAK Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.038E-04	1.832E-04	0.000E+00	1.984E-05	3.633E-05	5.617E-05	0.000E+00	0.000E+00	0.000E+00	
T7 POAK Class 8	Natural Gas	3.695E-05	3.804E-04	1.097E-02	0.000E+00	5.565E-06	7.937E-05	2.076E-04	2.925E-04	5.117E-06	1.984E-05	7.265E-05	9.761E-05	2.539E+00	2.586E-03	5.176E-04	
T7 Public Class 8	Diesel	6.289E-05	4.407E-03	3.265E-04	3.398E-05	2.281E-05	7.937E-05	2.355E-04	3.377E-04	2.183E-05	1.984E-05	8.244E-05	1.241E-04	3.588E+00	2.921E-06	5.654E-04	
T7 Public Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.197E-04	1.990E-04	0.000E+00	1.984E-05	4.189E-05	6.173E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Public Class 8	Natural Gas	5.390E-05	6.325E-04	1.803E-02	0.000E+00	7.179E-06	7.937E-05	2.337E-04	3.202E-04	6.601E-06	1.984E-05	8.180E-05	1.082E-04	3.236E+00	3.773E-03	6.596E-04	
T7 Single Concrete/Transit Mix Class 8	Diesel	1.903E-05	1.775E-03	9.631E-05	3.023E-05	3.026E-05	7.937E-05	1.954E-04	3.050E-04	2.895E-05	1.984E-05	6.839E-05	1.172E-04	3.192E+00	8.837E-07	5.029E-04	
T7 Single Concrete/Transit Mix Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.786E-05	1.772E-04	0.000E+00	1.984E-05	3.425E-05	5.409E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Single Concrete/Transit Mix Class 8	Natural Gas	3.361E-05	3.609E-04	8.916E-03	0.000E+00	4.972E-06	7.937E-05	1.954E-04	2.797E-04	4.571E-06	1.984E-05	6.838E-05	9.280E-05	2.479E+00	2.352E-03	5.055E-04	
T7 Single Dump Class 8	Diesel	2.287E-05	2.413E-03	1.239E-04	3.115E-05	3.880E-05	7.937E-05	1.918E-04	3.099E-04	3.712E-05	1.984E-05	6.712E-05	1.241E-04	3.290E+00	1.062E-06	5.183E-04	
T7 Single Dump Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.782E-05	1.772E-04	0.000E+00	1.984E-05	3.424E-05	5.408E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Single Dump Class 8	Natural Gas	3.358E-05	4.360E-04	9.940E-03	0.000E+00	4.805E-06	7.937E-05	1.920E-04	2.762E-04	4.418E-06	1.984E-05	6.719E-05	9.145E-05	2.535E+00	2.350E-03	5.168E-04	
T7 Single Other Class 8	Diesel	2.333E-05	2.457E-03	1.264E-04	3.132E-05	3.952E-05	7.937E-05	1.906E-04	3.095E-04	3.781E-05	1.984E-05	6.672E-05	1.244E-04	3.308E+00	1.084E-06	5.212E-04	
T7 Single Other Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.783E-05	1.772E-04	0.000E+00	1.984E-05	3.424E-05	5.408E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Single Other Class 8	Natural Gas	3.357E-05	4.633E-04	1.026E-02	0.000E+00	4.750E-06	7.937E-05	1.902E-04	2.743E-04	4.367E-06	1.984E-05	6.656E-05	9.077E-05	2.554E+00	2.350E-03	5.206E-04	
T7 SWCV Class 8	Diesel	1.041E-04	1.454E-02	2.807E-04	8.404E-05	2.425E-05	7.937E-05	4.630E-04	5.666E-04	2.320E-05	1.984E-05	1.620E-04	2.051E-04	8.875E+00	4.836E-06	1.398E-03	
T7 SWCV Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	2.315E-04	3.108E-04	0.000E+00	1.984E-05	8.102E-05	1.009E-04	0.000E+00	0.000E+00	0.000E+00	
T7 SWCV Class 8	Natural Gas	2.960E-05	7.620E-04	2.380E-02	0.000E+00	2.737E-06	7.937E-05	4.630E-04	5.451E-04	2.517E-06	1.984E-05	1.620E-04	1.844E-04	2.945E+00	1.464E-03	6.004E-04	
T7 Tractor Class 8	Diesel	2.266E-05	2.609E-03	1.062E-04	2.670E-05	4.821E-05	7.937E-05	1.890E-04	3.166E-04	4.612E-05	1.984E-05	6.615E-05	1.321E-04	2.820E+00	1.052E-06	4.443E-04	
T7 Tractor Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.543E-05	1.748E-04	0.000E+00	1.984E-05	3.340E-05	5.324E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Tractor Class 8	Natural Gas	3.212E-05	3.984E-04	8.751E-03	0.000E+00	4.670E-06	7.937E-05	1.886E-04	2.726E-04	4.294E-06	1.984E-05	6.601E-05	9.014E-05	2.380E+00	2.248E-03	4.851E-04	
T7 Utility Class 8	Diesel	2.488E-05	2.392E-03	2.285E-04	3.238E-05	1.615E-05	7.937E-05	2.225E-04	3.180E-04	1.545E-05	1.984E-05	7.786E-05	1.132E-04	3.420E+00	1.156E-06	5.388E-04	
T7 Utility Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.145E-04	1.939E-04	0.000E+00	1.984E-05	4.007E-05	5.991E-05	0.000E+00	0.000E+00	0.000E+00	
T7IS	Gasoline	9.872E-04	5.063E-03	6.718E-02	3.985E-05	3.414E-06	4.409E-05	2.119E-04	2.594E-04	3.139E-06	1.102E-05	7.415E-05	8.831E-05	4.031E+00	2.129E-04	2.306E-04	
T7IS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.409E-05	1.070E-04	1.511E-04	0.000E+00	1.102E-05	3.744E-05	4.847E-05	0.000E+00	0.000E+00	0.000E+00	
UBUS	Gasoline	7.211E-06	3.554E-05	1.284E-03	1.853E-05	2.871E-06	1.764E-05	2.006E-04	2.211E-04	2.640E-06	4.409E-06	7.022E-05	7.727E-05	1.874E+00	2.717E-06	6.144E-06	
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.966E-05	1.213E-04	1.909E-04	0.000E+00	1.741E-05	4.244E-05	5.985E-05	0.000E+00	0.000E+00	0.000E+00	

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2045
Season: Annual
Vehicle Classification: EMFAC202x Categori
Units: miles/day for CVMT and EVMT, trips/

		MTons/Mile														
Vehicle Category	Fuel	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUNEX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2(Pavley+AACC)_RUNEX	CH4_RUNEX	N2O_RUNEX
All Other Buses	Diesel	1.139E-08	4.756E-07	7.771E-08	9.615E-09	3.016E-09	1.200E-08	4.614E-08	6.115E-08	2.885E-09	3.000E-09	1.615E-08	2.203E-08	1.015E-03	5.291E-10	1.600E-07
All Other Buses	Natural Gas	1.217E-08	7.699E-08	3.422E-06	0.000E+00	1.741E-09	1.200E-08	4.614E-08	5.988E-08	1.601E-09	3.000E-09	1.615E-08	2.075E-08	8.957E-04	8.519E-07	1.826E-07
LDA	Gasoline	2.672E-09	1.887E-08	4.237E-07	2.197E-09	4.916E-10	8.000E-09	6.813E-09	1.530E-08	4.520E-10	2.000E-09	2.385E-09	4.837E-09	2.222E-04	8.731E-10	2.876E-09
LDA	Diesel	4.087E-09	1.266E-08	1.244E-07	1.706E-09	9.986E-10	8.000E-09	6.832E-09	1.583E-08	9.554E-10	2.000E-09	2.391E-09	5.347E-09	1.800E-04	1.898E-10	2.836E-08
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.387E-09	1.239E-08	0.000E+00	2.000E-09	1.536E-09	3.536E-09	0.000E+00	0.000E+00	0.000E+00
LDA	Plug-in Hybrid	1.125E-09	2.650E-09	1.665E-07	1.098E-09	2.020E-10	8.000E-09	3.918E-09	1.212E-08	1.857E-10	2.000E-09	1.371E-09	3.557E-09	1.110E-04	3.215E-10	3.937E-10
LDT1	Gasoline	3.014E-09	2.103E-08	4.640E-07	2.541E-09	5.265E-10	8.000E-09	8.283E-09	1.681E-08	4.841E-10	2.000E-09	2.899E-09	5.383E-09	2.570E-04	9.629E-10	3.037E-09
LDT1	Diesel	1.205E-08	2.676E-08	1.268E-07	3.172E-09	4.061E-09	8.000E-09	8.238E-09	2.030E-08	3.886E-09	2.000E-09	2.883E-09	8.769E-09	3.348E-04	5.596E-10	5.274E-08
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.395E-09	1.239E-08	0.000E+00	2.000E-09	1.538E-09	3.538E-09	0.000E+00	0.000E+00	0.000E+00
LDT1	Plug-in Hybrid	1.122E-09	2.642E-09	1.660E-07	1.094E-09	1.956E-10	8.000E-09	3.926E-09	1.212E-08	1.798E-10	2.000E-09	1.374E-09	3.554E-09	1.107E-04	3.185E-10	3.872E-10
LDT2	Gasoline	3.863E-09	2.251E-08	5.154E-07	2.645E-09	5.075E-10	8.000E-09	8.226E-09	1.673E-08	4.666E-10	2.000E-09	2.879E-09	5.346E-09	2.675E-04	1.202E-09	3.124E-09
LDT2	Diesel	1.204E-08	2.705E-08	1.262E-07	2.352E-09	4.052E-09	8.000E-09	8.223E-09	2.027E-08	3.876E-09	2.000E-09	2.878E-09	8.754E-09	2.482E-04	5.593E-10	3.910E-08
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.395E-09	1.240E-08	0.000E+00	2.000E-09	1.538E-09	3.538E-09	0.000E+00	0.000E+00	0.000E+00
LDT2	Plug-in Hybrid	1.124E-09	2.647E-09	1.664E-07	1.097E-09	1.998E-10	8.000E-09	3.925E-09	1.213E-08	1.837E-10	2.000E-09	1.374E-09	3.558E-09	1.109E-04	3.184E-10	3.860E-10
LHD1	Gasoline	3.771E-09	1.538E-08	5.961E-07	7.368E-09	1.277E-09	8.000E-09	7.800E-08	8.728E-08	1.174E-09	2.000E-09	2.730E-08	3.047E-08	7.453E-04	1.085E-09	1.311E-09
LHD1	Diesel	8.446E-08	2.118E-07	2.122E-07	5.681E-09	1.760E-08	1.200E-08	7.800E-08	1.076E-07	1.684E-08	3.000E-09	2.730E-08	4.714E-08	5.996E-04	3.923E-09	9.446E-08
LHD1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	3.900E-08	4.700E-08	0.000E+00	2.000E-09	1.365E-08	1.565E-08	0.000E+00	0.000E+00	0.000E+00
LHD2	Gasoline	3.362E-09	1.896E-08	6.012E-07	8.295E-09	1.269E-09	8.000E-09	9.100E-08	1.003E-07	1.167E-09	2.000E-09	3.185E-08	3.502E-08	8.391E-04	9.918E-10	1.793E-09
LHD2	Diesel	9.998E-08	2.690E-07	2.537E-07	6.611E-09	2.106E-08	1.200E-08	9.100E-08	1.241E-07	2.015E-08	3.000E-09	3.185E-08	5.500E-08	6.977E-04	4.644E-09	1.099E-07
LHD2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.550E-08	5.350E-08	0.000E+00	2.000E-09	1.593E-08	1.793E-08	0.000E+00	0.000E+00	0.000E+00
MCY	Gasoline	7.412E-07	4.562E-07	9.316E-06	1.832E-09	2.155E-09	4.000E-09	1.200E-08	1.815E-08	2.009E-09	1.000E-09	4.200E-09	7.209E-09	1.853E-04	1.245E-07	3.465E-08
MDV	Gasoline	4.030E-09	2.349E-08	5.296E-07	3.204E-09	5.091E-10	8.000E-09	8.333E-09	1.684E-08	4.681E-10	2.000E-09	2.916E-09	5.384E-09	3.241E-04	1.243E-09	3.197E-09
MDV	Diesel	4.091E-09	8.692E-09	1.338E-07	3.056E-09	8.260E-10	8.000E-09	8.340E-09	1.717E-08	7.903E-10	2.000E-09	2.919E-09	5.709E-09	3.225E-04	1.900E-10	5.081E-08
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.401E-09	1.240E-08	0.000E+00	2.000E-09	1.540E-09	3.540E-09	0.000E+00	0.000E+00	0.000E+00
MDV	Plug-in Hybrid	1.124E-09	2.647E-09	1.663E-07	1.096E-09	2.007E-10	8.000E-09	3.929E-09	1.213E-08	1.846E-10	2.000E-09	1.375E-09	3.560E-09	1.109E-04	3.190E-10	3.878E-10
MH	Gasoline	1.142E-08	1.982E-07	1.563E-07	1.923E-08	1.496E-09	1.200E-08	4.502E-08	5.851E-08	1.376E-09	3.000E-09	1.576E-08	2.013E-08	1.945E-03	4.006E-09	1.815E-08
MH	Diesel	7.893E-08	2.412E-06	2.246E-07	1.031E-08	1.703E-08	1.600E-08	4.479E-08	7.781E-08	1.629E-08	4.000E-09	1.567E-08	3.596E-08	1.089E-03	3.666E-09	1.715E-07
Motor Coach	Diesel	1.053E-08	9.318E-07	3.590E-08	1.450E-08	2.366E-08	1.200E-08	8.147E-08	1.171E-07	2.264E-08	3.000E-09	2.852E-08	5.415E-08	1.531E-03	4.891E-10	2.413E-07
OBUS	Gasoline	1.386E-08	1.993E-07	2.608E-07	1.499E-08	1.327E-09	1.200E-08	4.480E-08	5.813E-08	1.220E-09	3.000E-09	1.568E-08	1.990E-08	1.516E-03	3.406E-09	1.337E-08
OBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.240E-08	3.440E-08	0.000E+00	3.000E-09	7.840E-09	1.084E-08	0.000E+00	0.000E+00	0.000E+00
PTO	Diesel	1.544E-08	2.642E-06	1.908E-07	1.678E-08	4.243E-09	0.000E+00	0.000E+00	4.243E-09	4.059E-09	0.000E+00	0.000E+00	4.059E-09	1.773E-03	7.172E-10	2.793E-07
PTO	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
SBUS	Gasoline	8.548E-09	8.386E-08	1.866E-07	7.026E-09	1.263E-09	8.000E-09	4.492E-08	5.418E-08	1.161E-09	2.000E-09	1.572E-08	1.888E-08	7.107E-04	1.954E-09	8.558E-09
SBUS	Diesel	7.021E-09	3.810E-07	5.545E-08	9.913E-09	3.408E-09	1.200E-08	4.492E-08	6.033E-08	3.261E-09	3.000E-09	1.572E-08	2.198E-08	1.047E-03	3.261E-10	1.649E-07
SBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.511E-09	2.246E-08	3.197E-08	0.000E+00	2.378E-09	7.860E-09	1.024E-08	0.000E+00	0.000E+00	0.000E+00
SBUS	Natural Gas	3.686E-08	2.559E-07	7.617E-06	0.000E+00	3.674E-09	1.200E-08	4.492E-08	6.059E-08	3.378E-09	3.000E-09	1.572E-08	2.210E-08	1.106E-03	2.580E-06	2.254E-07
T6 CAIRP Class 4	Diesel	5.353E-09	1.770E-07	2.744E-08	9.618E-09	5.392E-09	1.200E-08	4.231E-08	5.971E-08	5.159E-09	3.000E-09	1.481E-08	2.297E-08	1.016E-03	2.486E-10	1.600E-07
T6 CAIRP Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 5	Diesel	5.365E-09	1.783E-07	2.748E-08	9.622E-09	5.404E-09	1.200E-08	4.231E-08	5.972E-08	5.170E-09	3.000E-09	1.481E-08	2.298E-08	1.016E-03	2.492E-10	1.601E-07
T6 CAIRP Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 6	Diesel	5.339E-09	1.777E-07	2.737E-08	9.607E-09	5.411E-09	1.200E-08	4.231E-08	5.972E-08	5.177E-09	3.000E-09	1.481E-08	2.299E-08	1.015E-03	2.480E-10	1.598E-07
T6 CAIRP Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 CAIRP Class 7	Diesel	5.748E-09	1.940E-07	2.947E-08	8.486E-09	5.730E-09	1.200E-08	4.231E-08	6.004E-08	5.482E-09	3.000E-09	1.481E-08	2.329E-08	8.962E-04	2.670E-10	1.412E-07
T6 CAIRP Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.116E-08	3.316E-08	0.000E+00	3.000E-09	7.405E-09	1.040E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 4	Diesel	6.076E-09	3.592E-07	5.333E-08	9.938E-09	1.913E-09	1.200E-08	4.756E-08	6.148E-08	1.831E-09	3.000E-09	1.665E-08	2.148E-08	1.050E-03	2.822E-10	1.654E-07
T6 Instate Delivery Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 4	Natural Gas	1.247E-08	6.019E-08	3.817E-06	0.000E+00	2.014E-09	1.200E-08	4.756E-08	6.158E-08	1.852E-09	3.000E-09	1.665E-08	2.150E-08	1.007E-03	8.728E-07	2.053E-07
T6 Instate Delivery Class 5	Diesel	6.100E-09	3.595E-07	5.334E-08	9.956E-09	1.915E-09	1.200E-08	4.756E-08	6.148E-08	1.832E-09	3.000E-09	1.665E-08	2.148E-08	1.051E-03	2.833E-10	1.656E-07
T6 Instate Delivery Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 5	Natural Gas	1.247E-08	6.045E-08	3.816E-06	0.000E+00	2.013E-09	1.200E-08	4.756E-08	6.158E-08	1.850E-09	3.000E-09	1.665E-08	2.150E-08	1.006E-03	8.726E-07	2.050E-07
T6 Instate Delivery Class 6	Diesel	6.077E-09	3.642E-07	5.342E-08	9.946E-09	1.920E-09	1.200E-08	4.756E-08	6.148E-08	1.837E-09	3.000E-09	1.665E-08	2.148E-08	1.050E-03	2.823E-10	1.655E-07
T6 Instate Delivery Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 6	Natural Gas	1.247E-08	6.025E-08	3.817E-06	0.000E+00	2.014E-09	1.200E-08	4.756E-08	6.158E-08	1.852E-09	3.000E-09	1.665E-08	2.150E-08	1.006E-03	8.727E-07	2.051E-07
T6 Instate Delivery Class 7	Diesel	8.074E-09	6.221E-07	7.037E-08	1.021E-08	2.493E-09	1.200E-08	4.756E-08	6.206E-08	2.385E-09	3.000E-09	1.665E-08	2.203E-08	1.079E-03	3.750E-10	1.699E-07
T6 Instate Delivery Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.378E-08	3.578E-08	0.000E+00	3.000E-09	8.324E-09	1.132E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Delivery Class 7	Natural Gas	1.191E-08	1.254E-07	3.671E-06	0.000E+00	1.644E-09	1.200E-08	4.756E-08	6.121E-08	1.512E-09	3.000E-09	1.665E-08	2.116E-08	1.039E-03	8.334E-07	2.118E-07
T6 Instate Other Class 4	Diesel	5.504E-09	2.730E-07	4.250E-08	9.614E-09	3.134E-09	1.200E-08	4.486E-08	6.000E-08	2.999E-09	3.000E-09	1.570E-08	2.170E-08	1.015E-03	2.556E-10	1.600E-07
T6 Instate Other Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 4	Natural Gas	9.963E-09	5.201E-08	2.672E-06	0.000E+00	1.557E-09	1.200E-08	4.486E-08	5.842E-08	1.431E-09	3.000E-09	1.570E-08	2.013E-08	8.784E-04	6.973E-07	1.791E-07
T6 Instate Other Class 5	Diesel	5.509E-09	2.698E-07	4.239E-08	9.628E-09	3.126E-09	1.200E-08	4.486E-08	5.999E-08	2.991E-09	3.000E-09	1.570E-08	2.169E-08	1.017E-03	2.559E-10	1.602E-07
T6 Instate Other Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 5	Natural Gas	9.961E-09	5.214E-08	2.672E-06	0.000E+00	1.556E-09	1.200E-08	4.486E-08	5.842E-08	1.430E-09	3.000E-09	1.570E-08	2.013E-08	8.772E-04	6.972E-07	1.788E-07
T6 Instate Other Class 6	Diesel	5.516E-09	2.744E-07	4.247E-08	9.621E-09	3.144E-09	1.200E-08	4.486E-08	6.001E-08	3.008E-09	3.000E-09	1.570E-08	2.171E-08	1.016E-03	2.562E-10	1.601E-07
T6 Instate Other Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00

T6 Instate Other Class 6	Natural Gas	9.961E-09	5.219E-08	2.672E-06	0.000E+00	1.555E-09	1.200E-08	4.486E-08	5.842E-08	1.430E-09	3.000E-09	1.570E-08	2.013E-08	8.773E-04	6.971E-07	1.788E-07
T6 Instate Other Class 7	Diesel	7.255E-09	4.486E-07	5.267E-08	9.734E-09	3.989E-09	1.200E-08	4.486E-08	6.085E-08	3.816E-09	3.000E-09	1.570E-08	2.252E-08	1.028E-03	3.370E-10	1.620E-07
T6 Instate Other Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Other Class 7	Natural Gas	9.522E-09	9.190E-08	2.718E-06	0.000E+00	1.327E-09	1.200E-08	4.486E-08	5.819E-08	1.220E-09	3.000E-09	1.570E-08	1.992E-08	8.950E-04	6.664E-07	1.825E-07
T6 Instate Tractor Class 6	Diesel	5.370E-09	2.583E-07	4.131E-08	9.643E-09	3.072E-09	1.200E-08	4.486E-08	5.994E-08	2.939E-09	3.000E-09	1.570E-08	2.164E-08	1.018E-03	2.494E-10	1.604E-07
T6 Instate Tractor Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Tractor Class 6	Natural Gas	9.959E-09	5.238E-08	2.672E-06	0.000E+00	1.554E-09	1.200E-08	4.486E-08	5.842E-08	1.429E-09	3.000E-09	1.570E-08	2.013E-08	8.767E-04	6.970E-07	1.787E-07
T6 Instate Tractor Class 7	Diesel	6.878E-09	4.625E-07	5.243E-08	8.871E-09	3.945E-09	1.200E-08	4.486E-08	6.081E-08	3.775E-09	3.000E-09	1.570E-08	2.248E-08	9.368E-04	3.195E-10	1.476E-07
T6 Instate Tractor Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.243E-08	3.443E-08	0.000E+00	3.000E-09	7.851E-09	1.085E-08	0.000E+00	0.000E+00	0.000E+00
T6 Instate Tractor Class 7	Natural Gas	9.574E-09	8.682E-08	2.709E-06	0.000E+00	1.353E-09	1.200E-08	4.486E-08	5.822E-08	1.244E-09	3.000E-09	1.570E-08	1.995E-08	8.737E-04	6.700E-07	1.781E-07
T6 OOS Class 4	Diesel	5.236E-09	2.208E-07	2.682E-08	9.027E-09	5.565E-09	1.200E-08	4.231E-08	5.988E-08	5.324E-09	3.000E-09	1.481E-08	2.313E-08	9.532E-04	2.432E-10	1.502E-07
T6 OOS Class 5	Diesel	5.257E-09	2.232E-07	2.690E-08	9.034E-09	5.585E-09	1.200E-08	4.231E-08	5.990E-08	5.343E-09	3.000E-09	1.481E-08	2.315E-08	9.540E-04	2.442E-10	1.503E-07
T6 OOS Class 6	Diesel	5.209E-09	2.183E-07	2.671E-08	9.008E-09	5.541E-09	1.200E-08	4.231E-08	5.985E-08	5.301E-09	3.000E-09	1.481E-08	2.311E-08	9.513E-04	2.420E-10	1.499E-07
T6 OOS Class 7	Diesel	5.622E-09	2.307E-07	2.882E-08	8.118E-09	5.872E-09	1.200E-08	4.231E-08	6.019E-08	5.618E-09	3.000E-09	1.481E-08	2.343E-08	8.573E-04	2.611E-10	1.351E-07
T6 Public Class 4	Diesel	1.498E-08	6.250E-07	6.305E-08	1.036E-08	4.529E-09	1.200E-08	4.617E-08	6.270E-08	4.333E-09	3.000E-09	1.616E-08	2.349E-08	1.095E-03	6.959E-10	1.724E-07
T6 Public Class 4	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 4	Natural Gas	1.261E-08	6.061E-08	3.058E-06	0.000E+00	1.783E-09	1.200E-08	4.617E-08	5.995E-08	1.639E-09	3.000E-09	1.616E-08	2.080E-08	9.838E-04	8.823E-07	2.005E-07
T6 Public Class 5	Diesel	1.323E-08	5.587E-07	6.154E-08	1.038E-08	3.947E-09	1.200E-08	4.617E-08	6.212E-08	3.776E-09	3.000E-09	1.616E-08	2.294E-08	1.096E-03	6.146E-10	1.726E-07
T6 Public Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 5	Natural Gas	1.250E-08	7.791E-08	3.065E-06	0.000E+00	1.700E-09	1.200E-08	4.617E-08	5.987E-08	1.563E-09	3.000E-09	1.616E-08	2.072E-08	9.939E-04	8.750E-07	2.026E-07
T6 Public Class 6	Diesel	1.284E-08	5.410E-07	5.971E-08	1.034E-08	3.946E-09	1.200E-08	4.617E-08	6.212E-08	3.775E-09	3.000E-09	1.616E-08	2.293E-08	1.092E-03	5.965E-10	1.721E-07
T6 Public Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 6	Natural Gas	1.257E-08	6.583E-08	3.061E-06	0.000E+00	1.758E-09	1.200E-08	4.617E-08	5.993E-08	1.616E-09	3.000E-09	1.616E-08	2.078E-08	9.842E-04	8.801E-07	2.006E-07
T6 Public Class 7	Diesel	1.084E-08	4.640E-07	5.329E-08	1.021E-08	3.505E-09	1.200E-08	4.617E-08	6.167E-08	3.353E-09	3.000E-09	1.616E-08	2.251E-08	1.079E-03	5.036E-10	1.699E-07
T6 Public Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.308E-08	3.508E-08	0.000E+00	3.000E-09	8.080E-09	1.108E-08	0.000E+00	0.000E+00	0.000E+00
T6 Public Class 7	Natural Gas	1.260E-08	6.177E-08	3.059E-06	0.000E+00	1.777E-09	1.200E-08	4.617E-08	5.995E-08	1.634E-09	3.000E-09	1.616E-08	2.079E-08	9.883E-04	8.818E-07	2.015E-07
T6 Utility Class 5	Diesel	5.103E-09	1.930E-07	3.564E-08	9.633E-09	2.321E-09	1.200E-08	4.550E-08	5.982E-08	2.220E-09	3.000E-09	1.592E-08	2.114E-08	1.017E-03	2.370E-10	1.603E-07
T6 Utility Class 5	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.275E-08	3.475E-08	0.000E+00	3.000E-09	7.962E-09	1.096E-08	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 5	Natural Gas	1.114E-08	5.410E-08	2.745E-06	0.000E+00	1.636E-09	1.200E-08	4.550E-08	5.913E-08	1.505E-09	3.000E-09	1.592E-08	2.043E-08	9.157E-04	7.795E-07	1.867E-07
T6 Utility Class 6	Diesel	5.104E-09	1.888E-07	3.564E-08	9.633E-09	2.303E-09	1.200E-08	4.550E-08	5.980E-08	2.204E-09	3.000E-09	1.592E-08	2.113E-08	1.017E-03	2.371E-10	1.603E-07
T6 Utility Class 6	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.275E-08	3.475E-08	0.000E+00	3.000E-09	7.962E-09	1.096E-08	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 6	Natural Gas	1.114E-08	5.410E-08	2.745E-06	0.000E+00	1.636E-09	1.200E-08	4.550E-08	5.913E-08	1.505E-09	3.000E-09	1.592E-08	2.043E-08	9.157E-04	7.795E-07	1.867E-07
T6 Utility Class 7	Diesel	5.054E-09	1.840E-07	3.529E-08	9.639E-09	2.291E-09	1.200E-08	4.550E-08	5.979E-08	2.192E-09	3.000E-09	1.592E-08	2.112E-08	1.018E-03	2.347E-10	1.604E-07
T6 Utility Class 7	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.275E-08	3.475E-08	0.000E+00	3.000E-09	7.962E-09	1.096E-08	0.000E+00	0.000E+00	0.000E+00
T6 Utility Class 7	Natural Gas	1.114E-08	5.410E-08	2.745E-06	0.000E+00	1.636E-09	1.200E-08	4.550E-08	5.913E-08	1.505E-09	3.000E-09	1.592E-08	2.043E-08	9.157E-04	7.795E-07	1.867E-07
T6TS	Gasoline	1.084E-08	6.843E-08	1.802E-07	1.521E-08	1.496E-09	1.200E-08	4.502E-08	5.851E-08	1.376E-09	3.000E-09	1.576E-08	2.013E-08	1.538E-03	2.869E-09	6.650E-09
T6TS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.200E-08	2.251E-08	3.451E-08	0.000E+00	3.000E-09	7.878E-09	1.088E-08	0.000E+00	0.000E+00	0.000E+00
T7 CAIRP Class 8	Diesel	1.143E-08	1.200E-06	3.867E-08	1.211E-08	2.971E-08	3.600E-08	8.184E-08	1.475E-07	2.842E-08	9.000E-09	2.864E-08	6.606E-08	1.279E-03	5.309E-10	2.014E-07
T7 CAIRP Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.095E-08	7.695E-08	0.000E+00	9.000E-09	1.433E-08	2.333E-08	0.000E+00	0.000E+00	0.000E+00
T7 CAIRP Class 8	Natural Gas	1.336E-08	1.527E-07	2.883E-06	0.000E+00	1.966E-09	3.600E-08	8.183E-08	1.198E-07	1.808E-09	9.000E-09	2.864E-08	3.945E-08	1.023E-03	9.352E-07	2.085E-07
T7 NNOOS Class 8	Diesel	1.111E-08	1.325E-06	3.762E-08	1.159E-08	2.932E-08	3.600E-08	8.182E-08	1.471E-07	2.805E-08	9.000E-09	2.864E-08	6.569E-08	1.224E-03	5.162E-10	1.929E-07
T7 NOOS Class 8	Diesel	1.146E-08	1.363E-06	3.878E-08	1.159E-08	3.104E-08	3.600E-08	8.184E-08	1.489E-07	2.969E-08	9.000E-09	2.865E-08	6.734E-08	1.224E-03	5.325E-10	1.928E-07
T7 Other Port Class 8	Diesel	1.003E-08	1.231E-06	6.348E-08	1.299E-08	1.642E-08	3.600E-08	9.416E-08	1.466E-07	1.571E-08	9.000E-09	3.296E-08	5.767E-08	1.371E-03	4.660E-10	2.161E-07
T7 Other Port Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.708E-08	8.308E-08	0.000E+00	9.000E-09	1.648E-08	2.548E-08	0.000E+00	0.000E+00	0.000E+00
T7 POAK Class 8	Diesel	1.024E-08	1.280E-06	6.476E-08	1.294E-08	1.713E-08	3.600E-08	9.416E-08	1.473E-07	1.639E-08	9.000E-09	3.296E-08	5.835E-08	1.367E-03	4.754E-10	2.154E-07
T7 POAK Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.708E-08	8.308E-08	0.000E+00	9.000E-09	1.648E-08	2.548E-08	0.000E+00	0.000E+00	0.000E+00
T7 POAK Class 8	Natural Gas	1.676E-08	1.725E-07	4.977E-06	0.000E+00	2.524E-09	3.600E-08	9.416E-08	1.327E-07	2.321E-09	9.000E-09	3.296E-08	4.428E-08	1.152E-03	1.173E-06	2.348E-07
T7 Public Class 8	Diesel	2.853E-08	1.999E-06	1.481E-07	1.541E-08	1.035E-08	3.600E-08	1.068E-07	1.532E-07	9.900E-09	9.000E-09	3.739E-08	5.629E-08	1.628E-03	1.325E-09	2.564E-07
T7 Public Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	5.429E-08	9.029E-08	0.000E+00	9.000E-09	1.900E-08	2.800E-08	0.000E+00	0.000E+00	0.000E+00
T7 Public Class 8	Natural Gas	2.445E-08	2.869E-07	8.177E-06	0.000E+00	3.256E-09	3.600E-08	1.060E-07	1.453E-07	2.994E-09	9.000E-09	3.710E-08	4.910E-08	1.468E-03	1.711E-06	2.992E-07
T7 Single Concrete/Transit Mix Class 8	Diesel	8.630E-09	8.049E-07	4.369E-08	1.371E-08	1.373E-08	3.600E-08	8.863E-08	1.384E-07	1.313E-08	9.000E-09	3.102E-08	5.315E-08	1.448E-03	4.009E-10	2.281E-07
T7 Single Concrete/Transit Mix Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.439E-08	8.039E-08	0.000E+00	9.000E-09	1.554E-08	2.454E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Concrete/Transit Mix Class 8	Natural Gas	1.525E-08	1.637E-07	4.044E-06	0.000E+00	2.255E-09	3.600E-08	8.863E-08	1.269E-07	2.074E-09	9.000E-09	3.102E-08	4.209E-08	1.125E-03	1.067E-06	2.293E-07
T7 Single Dump Class 8	Diesel	1.037E-08	1.094E-06	5.621E-08	1.413E-08	1.760E-08	3.600E-08	8.699E-08	1.406E-07	1.684E-08	9.000E-09	3.045E-08	5.628E-08	1.492E-03	4.818E-10	2.351E-07
T7 Single Dump Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.437E-08	8.037E-08	0.000E+00	9.000E-09	1.553E-08	2.453E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Dump Class 8	Natural Gas	1.523E-08	1.978E-07	4.509E-06	0.000E+00	2.179E-09	3.600E-08	8.708E-08	1.253E-07	2.004E-09	9.000E-09	3.048E-08	4.148E-08	1.150E-03	1.066E-06	2.344E-07
T7 Single Other Class 8	Diesel	1.058E-08	1.114E-06	5.733E-08	1.421E-08	1.793E-08	3.600E-08	8.647E-08	1.404E-07	1.715E-08	9.000E-09	3.026E-08	5.641E-08	1.500E-03	4.916E-10	2.364E-07
T7 Single Other Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.437E-08	8.037E-08	0.000E+00	9.000E-09	1.553E-08	2.453E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Other Class 8	Natural Gas	1.523E-08	2.102E-07	4.656E-06	0.000E+00	2.154E-09	3.600E-08	8.626E-08	1.244E-07	1.981E-09	9.000E-09	3.019E-08	4.117E-08	1.158E-03	1.066E-06	2.361E-07
T7 SWCV Class 8	Diesel	4.722E-08	6.593E-06	1.273E-07	3.812E-08	1.100E-08	3.600E-08	2.100E-07	2.570E-07	1.052E-08	9.000E-09	7.350E-08	9.302E-08	4.026E-03	2.193E-09	6.343E-07
T7 SWCV Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	1.050E-07	1.410E-07	0.000E+00	9.000E-09	3.675E-08	4.575E-08	0.000E+00	0.000E+00	0.000E+00
T7 SWCV Class 8	Natural Gas	1.343E-08	3.456E-07	1.080E-05	0.000E+00	1.241E-09	3.600E-08	2.100E-07	2.472E-07	1.141E-09	9.000E-09	7.350E-08	8.364E-08	1.336E-03	6.642E-07	2.723E-07
T7 Tractor Class 8	Diesel	1.028E-08	1.184E-06	4.818E-08	1.211E-08	2.187E-08	3.600E-08	8.573E-08	1.436E-07	2.092E-08	9.000E-09	3.000E-08	5.993E-08	1.279E-03	4.774E-10	2.015E-07
T7 Tractor Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.329E-08	7.929E-08	0.000E+00	9.000E-09	1.515E-08	2.415E-08	0.000E+00	0.000E+00	0.000E+00
T7 Tractor Class 8	Natural Gas	1.457E-08	1.807E-07	3.969E-06	0.000E+00	2.118E-09	3.600E-08	8.555E-08	1.237E-07	1.948E-09	9.000E-09	2.994E-08	4.089E-08	1.079E-03	1.020E-06	2.201E-07
T7 Utility Class 8	Diesel	1.129E-08	1.085E-06	1.036E-07	1.469E-08	7.326E-09	3.600E-08	1.009E-07	1.442E-07	7.009E-09	9.000E-09	3.532E-08	5.133E-08	1.551E-03	5.242E-10	2.444E-07
T7 Utility Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	5.193E-08	8.793E-08	0.000E+00	9.000E-09	1.818E-08	2.718E-08	0.000E+00	0.000E+00	0.000E+00
T7IS	Gasoline	4.478E-07	2.297E-06	3.047E-05	1.807E-08	1.549E-09	2.000E-08	9.610E-08	1.176E-07	1.424E-09	5.000E-09	3.364E-08	4.006E-08	1.828E-03	9.656E-08	1.046E-07
T7IS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.000E-08	4.853E-08	6.853E-08	0.000E+00	5.000E-09	1.698E-08	2.198E-08	0.000E+00	0.000E+00	0.000E+00
UBUS	Gasoline	3.271E-09	1.612E-08	5.825E-07	8.405E-09	1.302E-09	8.000E-09	9.100E-08	1.003E-07	1.197E-09	2.000E-09	3.185E-08	3.505E-08	8.502E-04	1.232E-09	2.787E-09
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.160E-08	5.500E-08	8.660E-08	0.000E+00	7.899E-09	1.925E-08	2.715E-08	0.000E+00	0.000E+00	0.000E+00

San Carlos Community GHG Emissions Inventory and Forecast

Category	Existing		GP 2045 (Proposed Project)		Net Change from Existing	
	City+SOI		City+SOI		TOTAL	
Transportation	87,892	17%	118,138	15%	30,246	12%
Energy - Electricity	16,359	3%	29,432	4%	13,073	5%
Energy - Natural Gas	43,761	9%	74,930	10%	31,169	12%
Solid Waste (Waste Commitment)	9,065	2%	16,470	2%	7,405	3%
Water/Wastewater	1,007	0%	461	0%	-545	0%
Other - Offroad Construction Equipment	133,124	26%	134,569	18%	1,445	1%
Other - Commercial and Light Industrial	2,345	0%	6,542	1%	4,196	2%
Other - Lawn and Garden Equipment	201,878	40%	359,723	47%	157,844	63%
Refrigerants	14,865	3%	22,396	3%	7,531	3%
Total Community Emissions	**510,296**	100%	**762,661**	100%	**252,365**	100%
Service Population (SP)	51,610	NA	93,770	NA	42,160	NA
$MTCO_2e/SP$	9.9	NA	8.1	NA	**-1.8**	NA

Notes: Emissions may not total to 100 percent due to rounding. Based on GWPs in the IPCC Fifth Assessment Report (AR5).

The emissions inventory and forecast is based on activity data for the City of San Mateo. This emissions inventory methodology identifies GHG emissions produced within a jurisdiction and captures direct and indirect emissions generated by land uses in a community. The activity data methodology allows a direct comparison between a community's GHG emissions and that identified by CARB in the AB 32 and SB 32 inventory and forecast prepared for the scoping plan. Unlike a "consumption-based" GHG emissions inventory, an activity-based emissions inventory does not capture lifecycle emissions associated with consumptions of goods. While a consumption-based emissions inventory approach may document GHG emissions associated with the final demand (regardless of where the were generated), a consumption-based emissions inventory excludes emissions associated with products produced within the juridiction but consumed elsewhere. For these reasons, an activity-based emissions inventory was determined to be most applicable for determining significant impacts under CEQA.

Note: Excludes GHG emissions natural gas use from Permitted Sources within the City.

Criteria Air Pollutants from Natural Gas

Rate	lbs/MBTU					
Natural Gas	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	0.005	0.092	0.039	0.001	0.007	0.007
Non-Residential	0.005	0.098	0.082	0.001	0.007	0.007
Sources CalEEMod Version 2022.1, 2022, Appendix C. https://www.caleemod.com/documents/handbook/appendices/appendix_c.pdf						

City + SOI	Existing 2024	Year 2045
	Therms	
Residential	5,695,217	9,267,085
Nonresidential	2,527,969	4,813,053
Total	8,223,187	14,080,138

City + SOI						
Natural Gas	2024 lbs/day - City + SOI					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	8	144	61	2	11	11
Nonresidential	3	68	57	1	5	5
TOTAL	11	211	118	2	16	16

Natural Gas	Year 2045 Update lbs/day - City + SOI					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Residential	13	234	99	3	18	18
Nonresidential	7	129	108	1	9	9
TOTAL	19	363	207	4	27	27

Energy Data - PCE and PG&E

ELECTRICITY DATA (kWh/Year)

Peninsula Clean Energy (PCE). July 1, 2024. Electricity Use in San Carlos (2019-2023).
Pacific Gas & Electric (PG&E). August 21, 2024. Electricity Use in San Carlos (2019-2023).

Category	2019	2020	2021	2022	2023	**5-Year Average**
Nonresidential	114,182	103,015	107,525	110,718	108,541	**108,796**
Residential	66,815	72,256	65,606	64,123	62,739	**66,308**
Total MWh	180,997	175,271	173,131	174,841	171,280	**175,104**
Residential						
PG&E Proportion of Total	*2%*	*2%*	*2%*	*2%*	*2%*	***2%***
PCE Proportion of Total	*98%*	*98%*	*98%*	*98%*	*98%*	***98%***
Nonresidential						
PG&E Proportion of Total	*0%*	*0%*	*0%*	*0%*	*0%*	***0%***
PCE Proportion of Total	*100%*	*100%*	*100%*	*100%*	*100%*	***100%***

NATURAL GAS DATA (US Therms/Year)

Pacific Gas & Electric (PG&E). August 21, 2024. Natural Gas Use in San Carlos (2019-2023).
Excludes natural gas use from Industrial (Permitted) Sources within the City.

Category	2019	2020	2021	2022	2023	**5-Year Average**
Nonresidential	3,564,555	113,889	3,167,573	2,849,302	2,944,528	**2,527,969**
Residential	5,831,987	5,699,545	5,639,012	5,534,808	5,770,734	**5,695,217**
Total Therms	9,396,542	5,813,434	8,806,585	8,384,110	8,715,262	**8,223,187**

City of San Carlos

Energy Emission Factors - Power and Heating Fuels

Pacific Gas & Electric (Natural Gas)	lbs/MMBTU	lbs/MMBTU	lbs/MMBTU	lbs/MMBTU
	CO_2	CH_4	N_2O	**CO_2e**
All Years	117	0.01	0.00	**117.321**
	MT/Therm	**MT/Therm**	**MT/Therm**	**MT/Therm**
	CO_2	CH_4	N_2O	**CO_2e**
All Years	0.0053	0.0000	0.0000	**0.005**

Source: California Air Pollution Control Officer's Association (CAPCOA). 2022, April. California Emissions Estimator Model (CalEEMod) User's Guide Version 2022.1. https://www.caleemod.com/user-guide. Table G-4, Natural Gas Emissions Factors (pounds per MMBTU).

Peninsula Clean Energy & PG&E (Electricity)				
	Intensity factor			**CO_2e**
	CO_2 lbs/MWH[1]	CH_4 lbs/MWH[2]	N_2O lbs/MWH[2]	lbs/MWh
PG&E 2024	203.983	0.033	0.004	**205.967**
PG&E 2045	203.983	0.033	0.004	**205.967**
PCE 2024	9.000	0.033	0.004	**10.984**
PCE 2045	0.000	0.000	0.000	**0.000**
Proportionally Weighted Between PG&E and PCE Usage				
Residential 2024	13.309	0.033	0.004	**15.293**
Nonresidential 2024	9.007	0.033	0.004	**10.991**
Residential 2045	4.508	0.001	0.000	**4.552**
Nonresidential 2045	0.007	0.000	0.000	**0.007**
	Intensity Factors			**CO_2e**
	CO_2 MTons/MWH[1]	CH_4 MTons/MWH[2]	N_2O MTons/MWH[2]	MTons/MWh
Residential 2024	0.0925	0.0000	0.0000	**0.093**
Nonresidential 2024	0.0925	0.0000	0.0000	**0.093**
Residential 2045	0.0041	0.0000	0.0000	**0.005**
Nonresidential 2045	0.0000	0.0000	0.0000	**0.000**

Source: California Air Pollution Control Officer's Association (CAPCOA). 2022, April. California Emissions Estimator Model (CalEEMod) User's Guide Version 2022.1. https://www.caleemod.com/user-guide. Table G-3, Electricity Utility Greenhouse Gas Emissions Factors; Peninsula Clean Energy (PCE). 2024, August 1. Email correspondence with Justin Pine.

Notes

In 2018, SB 100 (de León, 2018) was signed into law, which increased the RPS to 60% by 2030 and mandates the state's electricity to come from 100% carbon-free resources by 2045.

GHG Emissions from Energy Use

Actual Energy Use	Electricity MWH/YR Average	Natural Gas Therms/YR Average
Nonresidential	108,796	2,527,969
Residential	66,308	5,695,217
City Total	175,104	8,223,187
Year 2024	**MTCO2e/Yr**	
Nonresidential	10,164	13,453
Residential	6,195	30,308
City Total 2024	16,359	43,761
Year 2045 (adjusted for future carbon intensity)		
Nonresidential	10,164	13,453
Residential	6,195	30,308
City Total 2045	16,359	43,761

Forecast Methodology	Existing	Proposed Project
Nonresidential - Square footage	9,876,200	18,803,500
Residential - Dwelling Units	13,250	21,560

MWH per SQFT per year (2045)	0.01	Therms per SQFT per year	0.26
MWH per Unit per year (2045)	5.00	Therms per Unit per year	429.83

Electricity	Existing MWH	Proposed Project MWH
Nonresidential	108,796	207,139
Residential	66,308	107,894
Total	175,104	315,034
Electricity	**MTCO2e**	
Nonresidential	10,164	19,352
Residential	6,195	10,080
Total Electricity Emissions	**16,359**	**29,432**

Natural Gas	Existing Therms	Proposed Project Therms
Nonresidential	2,527,969	4,813,053
Residential	5,695,217	9,267,085
Total	8,223,187	14,080,138
Natural Gas	**MTCO2e**	
Nonresidential	13,453	25,613
Residential	30,308	49,316
Total Natural Gas Emissions	**43,761**	**74,930**

Water and Wastewater

Water Demand for San Carlos Provided by Mid-Peninsula Water District (MPWD), California Water Service (CalWater), and Redwood City Water Division

Water

Residential	Existing	Proposed Project
Acre Feet Per Year (AFY)	2,561	3,495
MGY TOTAL	835	1,139

Nonresidential	Existing	Proposed Project
Acre Feet Per Year (AFY)	1,320	3,209
MGY TOTAL	430	1,046

Wastewater

Residential	Existing	Proposed Project
Million Gallons Per Day (MGD)	1.31	2.04
AFY	1,465	2,287
MGY TOTAL	477	745

Nonresidential	Existing	Proposed Project
Million Gallons Per Day (MGD)	1.54	2.41
AFY	1,728	2,698
MGY TOTAL	563	879

Notes:

[1] Calculated existing water and wastewater demands based on proportion of net new water demand for each purveyors and existing demographics for EIR Study Area since the delineation of residential and non-residential uses are not known under each purveyor service area for existing conditions. Accounts for distribution system losses.

[2] Increase in water and wastewater demand based on growth in housing units and non-residential square footage. Accounts for distribution system losses.

Direct Emissions from Wastewater Treatment

Wastewater Treatment Type	BIOGENIC CO_2 MT/Gallon	CH_4 MT/Gallon	N_2O MT/Gallon	Non-Biogenic CO_2e MT/Gallon
Aerobic	3.90E-07	1.34E-09	8.52E-10	2.63E-07
Anaerobic (Facultative Lagoons)	3.90E-07	4.01E-07	8.52E-10	1.15E-05
Septic	0.00E+00	2.50E-07	8.52E-10	7.23E-06

Source: California Air Pollution Control Officer's Association (CAPCOA). 2022, April. California Emissions Estimator Model (CalEEMod) User's Guide Version 2022.1. https://www.caleemod.com/user-guide. Table G-35, Annual Wastewater Treatment Direct Emission Factors (short ton per gallon)

Anaerobic	Existing	Proposed Project
Residential Non-Biogenic MT CO_2e TOTAL=	126	196
Nonresidential Non-Biogenic MT CO_2e TOTAL=	148	231

Water and Wastewater

Energy for Water Conveyance, Treatment, Distribution, and Wastewater Treatment

Location	Supply (Water Conveyance)	Water Treatment	Water Distribution	Total Water	Wastewater Treatment
			kWhr/million gallons		
South Coast	3,044	725	1,537	5,306	1,501
San Francisco Bay	1,182	754	2,998	4,934	1,542
Central Coast	1,577	754	1,537	3,868	1,542
Tulare Lake	1,506	748	166	2,420	1,519
North Coast	620	754	1,537	2,911	1,542
San Joaquin River	827	748	166	1,741	1,519
Colorado River	2,304	748	166	3,218	1,519
Sacramento River	698	748	166	1,612	1,519
South Lahontan	1,953	748	1,537	4,238	1,519
North Lathontan	541	748	166	1,455	1,519

Source: California Air Pollution Control Officer's Association (CAPCOA). 2022, April. California Emissions Estimator Model (CalEEMod) User's Guide Version 2022.1. https://www.caleemod.com/user-guide. Table G-32, Water Energy Intensity Factors by Hydrologic Region and Process (kWh per million gallon).

Proportionally Weighted Between PG&E and PCE Usage

	Intensity factor			CO_2e
	CO_2 lbs/MWH[1]	CH_4 lbs/MWH[2]	N_2O lbs/MWH[2]	lbs/MWh
Residential 2024	13.309	0.033	0.004	**15.293**
Nonresidential 2024	9.007	0.033	0.004	**10.991**
Residential 2045	4.508	0.001	0.000	**4.552**
Nonresidential 2045	0.007	0.000	0.000	**0.007**
	Intensity factor			**CO_2e**
	CO_2 MTons/MWH[1]	CH_4 MTons/MWH[2]	N_2O MTons/MWH[2]	MTons/MWh
Residential 2024	0.0925	0.000	0.000	**0.093**
Nonresidential 2024	0.0925	0.000	0.000	**0.093**
Residential 2045	0.0041	0.000	0.000	**0.005**
Nonresidential 2045	0.0000	0.000	0.000	**0.000**

Source: California Air Pollution Control Officer's Association (CAPCOA). 2022, April. California Emissions Estimator Model (CalEEMod) User's Guide Version 2022.1. https://www.caleemod.com/user-guide. Table G-3, Electricity Utility Greenhouse Gas Emissions Factors; Peninsula Clean Energy (PCE). 2024, August 1. Email correspondence with Justin Pine.

Water and Wastewater

GHG Emissions from Energy Associated with Water/Wastewater

Energy Associated with Water Use	Existing Mwh	Proposed Project Mwh
Residential Water Use	4,118	5,619
Residential Wastewater Generation	736	1,149
Nonresidential Water Use	2,122	5,159
Nonresidential Wastewater Generation	868	1,355
Total Water/Wastewater	7,844	13,282

GHG Emissions from Energy Associated with Water Use/Wastewater Generation	Existing $MTCO_2e$	Proposed Project $MTCO_2e$
Residential Water Use	385	28
Residential Wastewater Generation	69	6
Nonresidential Water Use	198	0
Nonresidential Wastewater Generation	81	0
Total Water/Wastewater	733	34

Total GHGs

GHG Emissions from Water/Wastewater Use	Existing $MTCO_2e$	Proposed Project $MTCO_2e$
Total Residential Water Use	385	28
Total Residential Wastewater Generation	194	202
Total Nonresidential Water Use	198	0
Total Nonresidential Wastewater Generation	229	231
Total Water/Wastewater	1,007	461

Existing Water and Wastewater Estimates

Net Change in Water Demand

Net New Buildout in Mid Peninsula Water District (MPWD)		Proportion	Net New Buildout in CalWater Service Area		Proportion	Net New Buildout in Redwood City Water Division Area		Proportion
Total Housing Units	**1,531**	**18.45%**	**Total Housing Units**	**6,769**	**81.55%**	**Total Housing Units**	**0**	**0.00%**
Single-Family	0	**0.00%**	Single-Family	40	**100.00%**	Single-Family	0	**0.00%**
Multi-Family and ADUs	1,531	**18.54%**	Multi-Family and ADUs	6,729	**81.46%**	Multi-Family and ADUs	0	**0.00%**

Net New Non-Residential Square Footage	**4,672,081**	**52.33%**	**Net New Non-Residential Square Footage**	**4,255,219**	**47.67%**	**Net New Non-Residential Square Footage**	**0**	**0.00%**
Commercial	75,378	**-13.67%**	Commercial	-626,878	**113.67%**	Commercial	0	**0.00%**
Office	158,440	**46.10%**	Office	185,260	**53.90%**	Office	0	**0.00%**
R&D	3,154,263	**37.21%**	R&D	5,322,337	**62.79%**	R&D	0	**0.00%**
Industrial	1,284,000	**194.99%**	Industrial	-625,500	**-94.99%**	Industrial	0	**0.00%**

Mid Peninsula Water District Water Use Factors		
	Factor	**Unit**
Multi-Family	104	GPD/DU
Commercial	0.045	GPD/SF
Office	0.045	GPD/SF
R&D	0.18	GPD/SF
Industrial	0.022	GPD/SF

CalWater Water Use Factors		
	Factor	**Unit**
Single Family	197	GPD/DU
Multi-Family	99	GPD/DU
Commercial	0.097	GPD/SF
Office	0.055	GPD/SF
R&D	0.18	GPD/SF
Industrial	0.097	GPD/SF

Existing Water Demand

Existing (2024)	Total Amount	MPWD Proportion	CalWater Proportion	GPD	AFY
Total Housing Units	**13,490**	**708**	**12,782**		
Single Family	9,670	0	9,670	1,904,990	2,133.9
Multi-Family and ADUs	3,820	708	3,112	381,720	427.6
				Total Residential Water Demand	**2,561.4**

Existing (2024)	Total Amount	MPWD Proportion	CalWater Proportion	GPD	AFY
Total Non-Residential Square Footage	**12,564,000**	**11,639,477**	**924,523**		
Commercial	772,800	-105,625	878,425	80,454	90.1
Office	1,462,500	674,188	788,312	73,696	82.5
R&D	5,747,900	2,138,875	3,609,025	1,034,622	1,158.9
Industrial	4,580,800	8,932,038	-4,351,238	-225,565	-252.7
				Subtotal Non-Residential Water Demand	1,078.9
				Irrigation Demand for Non-Residential	107.9
				Total Non-Residential Water Demand	**1,186.8**
				Distribution System Losses	133.1
				TOTAL Existing Water Demand	**3,881**

Net New Wastewater Demand

	Amount	Wastewater Demand Factor(gpcd or GPD/SF)	GPD	MGD	Proportion
Net New Residential Population	**15,620**	47	734,140	0.73	45.88%
Net New Non-Residential Square Footage	**8,927,300**	0.097	865,948	0.87	54.12%
			Total Net New Wastewater Demand	1.60	

Existing Wastewater Demand	**2.85**	MGD
Residential	1.31	
Nonresidential	1.54	
Increase in Wastewater Demand	**1.60**	MGD
Residential	0.73	
Nonresidential	0.87	
Wastewater Demand at Buildout	**4.45**	**MGD**

Notes:

[1] Calculated existing water and wastewater demands based on proportion of net new water demand for each purveyors and existing demographics for EIR Study Area since the delineation of residential and non-residential uses are not known under each purveyor service area for existing conditions. Accounts for distribution system losses.

Solid Waste Disposal

Source: CalRecycle Recycling and Disposal Reporting System Report (Overall Jurisdiction Tons For Disposal and Disposal Related Uses)

Waste Generated Within San Carlos

Year	Landfill (tons)
2022	36,948
2023	42,419
Total	79,366
Annual Average	39,683

Service Population in San Carlos

Existing 2024	Proposed GP 2045	% Increase
51,610	93,770	82%

Notes:

Source: CalRecycle. 2024, October 15 (accessed). RDRS Report 1: Overall Jurisdiction Tons for Disposal and Disposal Related Uses. https://www2.calrecycle.ca.gov/RecyclingDisposalReporting/Reports/OverallJurisdictionTonsForDisposal

CARB's Landfill Emission Tool (version 1.09.24.2021) CH_4 Model Results

Based on the West Central Landfill (San Mateo County) K-Value

	EXISTING			Proposed Project
	CH_4 Tons	CARB $MTCO_2e$ w/LFG Capture 2024 TOTAL	2024 Disposal (AR5 GWPs)* 2024 TOTAL	$MTCO_2e$ w/LFG Capture 2045 TOTAL
Year 1	108	24	33	59
Year 2	748	170	226	411
Year 3 (PEAK)	**840**	**190**	**254**	**461**
Year 4	823	187	249	452
Year 5	807	183	244	443
Year 6	791	179	239	435
Year 7	775	176	234	426
Year 8	760	172	230	418
Year 9	745	169	225	409
Year 10	730	166	221	401
Year 11	716	162	216	393
Year 12	702	159	212	385
Year 13	688	156	208	378
Year 14	674	153	204	370
Year 15	661	150	200	363
Year 16	648	147	196	356
Year 17	635	144	192	349
Year 18	622	141	188	342
Year 19	610	138	184	335
Year 20	598	136	181	328
Year 21	586	133	177	322
Year 22	574	130	174	316
Year 23	563	128	170	309
Year 24	552	125	167	303
Year 25	541	123	164	297
Year 26	530	120	160	291
Year 27	520	118	157	286
Year 28	509	116	154	280
Year 29	499	113	151	274
Year 30	489	111	148	269
Year 31	480	109	145	264
Year 32	470	107	142	258
Year 33	461	105	139	253
Year 34	452	102	137	248
Year 35	443	100	134	243
Year 36	434	98	131	239
Year 37	426	97	129	234
Year 38	417	95	126	229
Year 39	409	93	124	225
Year 40	401	91	121	220
Year 41	393	89	119	216
Year 42	385	87	116	212
Year 43	377	86	114	207
Year 44	370	84	112	203
Year 45	363	82	110	199
Year 46	355	81	107	195

Year 47	348	79	105		191
Year 48	341	77	103		188
Year 49	335	76	101		184
Year 50	328	74	99		180
Year 51	322	73	97		177
Year 52	315	71	95		173
Year 53	309	70	93		170
Year 54	303	69	92		166
Year 55	297	67	90		163
Year 56	291	66	88		160
Year 57	285	65	86		157
Year 58	280	63	85		154
Year 59	274	62	83		151
Year 60	269	61	81		148
Total	**29,976**	**6,799**	**9,065**		**16,470**

Waste. Landfill Emissions Tool Version 1.09.24.2021. and data from CalRecycle. Biogenic CO_2 emissions are not included.

Notes

LFG capture Efficiency	0.75	AR5 CH_4 GWP	28	SAR GWP CH4:*	21	Tons to metric Tons	0.9071847

Waste generation based on two year average waste commitment for San Carlos obtained from CalRecycle.

Significant CH_4 production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer. Consequently, the highest CH_4 emissions from waste disposal in a given year are reported.

Decomposition based on an average annual rainfall of approximately 44 inches per year average (anaerobic decomposition factor (k) of 0.057) for Shasta County.

The Landfill Gas Estimator only includes the landfill gas (LFG) capture in the landfill gas heat output and therefore the reduction and emissions from landfill gas capture are calculated separately. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75 percent. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.3.

Biogenic CO_2 emissions are not included.

Refrigerants

Refrigerants	$MTCO_2e$	
2021 Statewide Refrigerant Use (AR4)	$MTCO_2e$	19,023,805
US Census 2021 California Population	People	39,455,353
	MT/person	0.48

	Existing	Proposed Project
Population	30,830	46,450
MTCO2e	14,865	22,396

Source: CARB. Greenhouse Gas Emissions Inventory Query Tool for years 2000 to 2020 (15th Edition) - Query Results. Main Activity: Use of substitutes for ozone depleting substances Activity Subset: Refrigeration and Air Conditioning. AR 4. https://ww2.arb.ca.gov/applications/greenhouse-gas-emission-inventory-0

U.S. Census Bureau. 2023. Table DP05 2021: ACS 5-Year Demographics and Housing Estimates. https://data.census.gov/table/ACSDP5YSPT2021.DP05?g=040XX00US06.

Year 2024 Existing: Mobile GHG Emissions

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

1. Based on data provided Kittelson & Associates Inc., 2024.

2. Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

	Pass. Vehicles	Trucks				
Fleet Mix - San Mateo County (K)	**97%**	**3%**				
Passenger Vehicles	Trucks	EMFAC default	**CO2**	**CH4**	**N2O**	
94%	6%		**AR5 GWP**	**AR5 GWP**	**AR5 GWP**	
			1	28	265	

Annual VMT	**268,273,728**				**MT/Year**		
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**CO2**	**CH4**	**N2O**	**CO2e**
All Other Buses	Diesel	0.36%	0.37%	1,141.67	0.00	0.18	1,189.36
All Other Buses	Natural Gas	0.00%	0.00%	7.44	0.01	0.00	8.01
LDA	Gasoline	40.41%	41.49%	30,158.58	0.23	0.47	30,289.85
LDA	Diesel	0.10%	0.10%	60.88	0.00	0.01	63.43
LDA	Electricity	3.74%	3.84%	0.00	0.00	0.00	0.00
LDA	Plug-in Hybrid	1.49%	1.53%	539.38	0.00	0.00	540.01
LDT1	Gasoline	3.95%	4.06%	3,454.99	0.05	0.08	3,478.45
LDT1	Diesel	0.00%	0.00%	0.55	0.00	0.00	0.57
LDT1	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00
LDT1	Plug-in Hybrid	0.01%	0.01%	3.91	0.00	0.00	3.92
LDT2	Gasoline	26.65%	27.35%	23,952.46	0.16	0.34	24,046.60
LDT2	Diesel	0.10%	0.11%	85.84	0.00	0.01	89.43
LDT2	Electricity	0.20%	0.21%	0.00	0.00	0.00	0.00
LDT2	Plug-in Hybrid	0.34%	0.35%	117.69	0.00	0.00	117.83
LHD1	Gasoline	2.18%	1.25%	2,805.90	0.02	0.02	2,811.93
LHD1	Diesel	1.04%	0.60%	1,000.65	0.01	0.16	1,042.70
LHD1	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00
LHD2	Gasoline	0.24%	0.14%	351.62	0.00	0.00	352.40
LHD2	Diesel	0.45%	0.26%	516.97	0.00	0.08	538.66
LHD2	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
MCY	Gasoline	0.42%	0.43%	214.00	0.17	0.04	229.87
MDV	Gasoline	15.31%	15.71%	16,590.06	0.11	0.22	16,650.65
MDV	Diesel	0.21%	0.21%	226.90	0.00	0.04	236.38
MDV	Electricity	0.22%	0.23%	0.00	0.00	0.00	0.00
MDV	Plug-in Hybrid	0.19%	0.19%	66.36	0.00	0.00	66.44
MH	Gasoline	0.04%	0.04%	226.30	0.00	0.00	226.99
MH	Diesel	0.02%	0.02%	59.88	0.00	0.01	62.38
Motor Coach	Diesel	0.05%	0.05%	249.07	0.00	0.04	259.48
OBUS	Gasoline	0.08%	0.08%	371.47	0.00	0.00	372.43
OBUS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
PTO	Diesel	0.03%	0.02%	90.88	0.00	0.01	94.68
PTO	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	41.98	0.00	0.00	42.56
SBUS	Diesel	0.02%	0.02%	64.54	0.00	0.01	67.23
SBUS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
SBUS	Natural Gas	0.00%	0.00%	2.95	0.01	0.00	3.34
T6 CAIRP Class 4	Diesel	0.00%	0.00%	1.23	0.00	0.00	1.28
T6 CAIRP Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Diesel	0.00%	0.00%	1.69	0.00	0.00	1.76
T6 CAIRP Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Diesel	0.00%	0.00%	4.33	0.00	0.00	4.51
T6 CAIRP Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 CAIRP Class 7	Diesel	0.02%	0.01%	25.66	0.00	0.00	26.74
T6 CAIRP Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Diesel	0.07%	0.04%	121.67	0.00	0.02	126.77
T6 Instate Delivery Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.47	0.00	0.00	0.51
T6 Instate Delivery Class 5	Diesel	0.05%	0.03%	99.08	0.00	0.02	103.22
T6 Instate Delivery Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.31	0.00	0.00	0.33

Year 2024 Existing: Mobile GHG Emissions

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

1. Based on data provided Kittelson & Associates Inc., 2024.

2. Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

	Pass. Vehicles	Trucks				
Fleet Mix - San Mateo County (K)	**97%**	**3%**				
Passenger Vehicles	Trucks	EMFAC default	**CO2**	**CH4**	**N2O**	
94%	6%		**AR5 GWP**	**AR5 GWP**	**AR5 GWP**	
			1	28	265	

Annual VMT	**268,273,728**					**MT/Year**	
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**CO2**	**CH4**	**N2O**	**CO2e**
T6 Instate Delivery Class 6	Diesel	0.11%	0.07%	204.96	0.00	0.03	213.52
T6 Instate Delivery Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.65	0.00	0.00	0.70
T6 Instate Delivery Class 7	Diesel	0.04%	0.03%	79.63	0.00	0.01	82.95
T6 Instate Delivery Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	1.86	0.00	0.00	1.99
T6 Instate Other Class 4	Diesel	0.09%	0.05%	160.52	0.00	0.03	167.24
T6 Instate Other Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	0.48	0.00	0.00	0.51
T6 Instate Other Class 5	Diesel	0.24%	0.14%	417.76	0.00	0.07	435.21
T6 Instate Other Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.93	0.00	0.00	1.00
T6 Instate Other Class 6	Diesel	0.15%	0.09%	261.77	0.00	0.04	272.71
T6 Instate Other Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.60	0.00	0.00	0.65
T6 Instate Other Class 7	Diesel	0.07%	0.04%	120.23	0.00	0.02	125.25
T6 Instate Other Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	2.56	0.00	0.00	2.75
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	5.29	0.00	0.00	5.51
T6 Instate Tractor Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Natural Gas	0.00%	0.00%	0.01	0.00	0.00	0.01
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	33.60	0.00	0.01	35.01
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.56	0.00	0.00	0.60
T6 OOS Class 4	Diesel	0.00%	0.00%	0.69	0.00	0.00	0.72
T6 OOS Class 5	Diesel	0.00%	0.00%	0.95	0.00	0.00	0.99
T6 OOS Class 6	Diesel	0.00%	0.00%	2.42	0.00	0.00	2.52
T6 OOS Class 7	Diesel	0.01%	0.01%	16.59	0.00	0.00	17.28
T6 Public Class 4	Diesel	0.01%	0.00%	12.04	0.00	0.00	12.54
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.44	0.00	0.00	0.47
T6 Public Class 5	Diesel	0.02%	0.01%	38.96	0.00	0.01	40.58
T6 Public Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 5	Natural Gas	0.00%	0.00%	2.97	0.00	0.00	3.20
T6 Public Class 6	Diesel	0.01%	0.01%	23.87	0.00	0.00	24.87
T6 Public Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 6	Natural Gas	0.00%	0.00%	0.96	0.00	0.00	1.03
T6 Public Class 7	Diesel	0.03%	0.02%	65.62	0.00	0.01	68.37
T6 Public Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 7	Natural Gas	0.00%	0.00%	3.38	0.00	0.00	3.64
T6 Utility Class 5	Diesel	0.00%	0.00%	3.12	0.00	0.00	3.25
T6 Utility Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 5	Natural Gas	0.00%	0.00%	0.04	0.00	0.00	0.04
T6 Utility Class 6	Diesel	0.00%	0.00%	0.59	0.00	0.00	0.61
T6 Utility Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 6	Natural Gas	0.00%	0.00%	0.01	0.00	0.00	0.01
T6 Utility Class 7	Diesel	0.00%	0.00%	0.81	0.00	0.00	0.85
T6 Utility Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 7	Natural Gas	0.00%	0.00%	0.01	0.00	0.00	0.01
T6TS	Gasoline	0.25%	0.15%	682.59	0.00	0.01	684.83

Year 2024 Existing: Mobile GHG Emissions

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

1. Based on data provided Kittelson & Associates Inc., 2024.

2. Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

	Pass. Vehicles	Trucks				
Fleet Mix - San Mateo County (K)	**97%**	**3%**				
Passenger Vehicles	Trucks	EMFAC default	**CO2**	**CH4**	**N2O**	
94%	6%		**AR5 GWP**	**AR5 GWP**	**AR5 GWP**	
			1	28	265	
Annual VMT	**268,273,728**			**MT/Year**		

Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**CO2**	**CH4**	**N2O**	**CO2e**
T6TS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 CAIRP Class 8	Diesel	0.09%	0.05%	220.76	0.00	0.03	229.98
T7 CAIRP Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.38	0.00	0.00	0.40
T7 NNOOS Class 8	Diesel	0.11%	0.06%	261.00	0.00	0.04	271.90
T7 NOOS Class 8	Diesel	0.04%	0.02%	95.32	0.00	0.02	99.30
T7 Other Port Class 8	Diesel	0.01%	0.01%	22.60	0.00	0.00	23.55
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 POAK Class 8	Diesel	0.03%	0.02%	78.03	0.00	0.01	81.29
T7 POAK Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.03	0.00	0.00	0.03
T7 Public Class 8	Diesel	0.08%	0.05%	225.51	0.00	0.04	234.94
T7 Public Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 Public Class 8	Natural Gas	0.00%	0.00%	1.04	0.00	0.00	1.13
T7 Single Concrete/Transit Mix Class 8	Diesel	0.02%	0.01%	47.42	0.00	0.01	49.40
T7 Single Concrete/Transit Mix Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 Single Concrete/Transit Mix Class 8	Natural Gas	0.00%	0.00%	2.10	0.00	0.00	2.27
T7 Single Dump Class 8	Diesel	0.06%	0.03%	146.45	0.00	0.02	152.57
T7 Single Dump Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	6.21	0.01	0.00	6.68
T7 Single Other Class 8	Diesel	0.06%	0.03%	151.14	0.00	0.02	157.45
T7 Single Other Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	7.82	0.01	0.00	8.43
T7 SWCV Class 8	Diesel	0.05%	0.03%	289.07	0.00	0.05	301.15
T7 SWCV Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 SWCV Class 8	Natural Gas	0.04%	0.02%	104.18	0.26	0.02	117.02
T7 Tractor Class 8	Diesel	0.08%	0.04%	180.94	0.00	0.03	188.50
T7 Tractor Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 Tractor Class 8	Natural Gas	0.01%	0.01%	18.38	0.02	0.00	19.80
T7 Utility Class 8	Diesel	0.00%	0.00%	3.88	0.00	0.00	4.04
T7 Utility Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7IS	Gasoline	0.00%	0.00%	10.68	0.00	0.00	10.89
T7IS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
UBUS	Gasoline	0.02%	0.02%	62.53	0.00	0.00	62.61
UBUS	Diesel	0.12%	0.12%	392.42	0.00	0.06	408.84
UBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00
UBUS	Natural Gas	0.02%	0.03%	85.11	0.28	0.02	97.45
		100%	100%	87,217.81	1.35	2.40	87,892

Year 2045 Existing: Mobile GHG Emissions

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

1. Based on data provided Kittelson & Associates Inc., 2024.

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	Pass. Vehicles	Trucks				
Fleet Mix - San Mateo County (K)	**97%**	**3%**				
Passenger Vehicles	Trucks	EMFAC default	**CO2**	**CH4**	**N2O**	
92%	8%		**AR5 GWP**	**AR5 GWP**	**AR5 GWP**	
			1	28	265	

Annual VMT	**463,300,638**				**MT/Year**		
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**CO2**	**CH4**	**N2O**	**CO2e**
All Other Buses	Diesel	0.35%	0.36%	1,715.16	0.00	0.27	1,786.79
All Other Buses	Natural Gas	0.01%	0.01%	29.21	0.03	0.01	31.57
LDA	Gasoline	29.09%	30.40%	31,291.00	0.12	0.40	31,401.77
LDA	Diesel	0.02%	0.02%	14.98	0.00	0.00	15.60
LDA	Electricity	4.45%	4.65%	0.00	0.00	0.00	0.00
LDA	Plug-in Hybrid	1.40%	1.46%	752.73	0.00	0.00	753.49
LDT1	Gasoline	3.56%	3.72%	4,432.87	0.02	0.05	4,447.22
LDT1	Diesel	0.00%	0.00%	0.07	0.00	0.00	0.07
LDT1	Electricity	0.13%	0.13%	0.00	0.00	0.00	0.00
LDT1	Plug-in Hybrid	0.09%	0.09%	46.56	0.00	0.00	46.61
LDT2	Gasoline	30.93%	32.32%	40,056.20	0.18	0.47	40,185.20
LDT2	Diesel	0.12%	0.12%	142.37	0.00	0.02	148.33
LDT2	Electricity	0.97%	1.01%	0.00	0.00	0.00	0.00
LDT2	Plug-in Hybrid	0.85%	0.89%	458.46	0.00	0.00	458.92
LHD1	Gasoline	1.37%	0.62%	2,124.81	0.00	0.00	2,125.89
LHD1	Diesel	0.86%	0.39%	1,071.06	0.01	0.17	1,115.98
LHD1	Electricity	1.83%	0.82%	0.00	0.00	0.00	0.00
LHD2	Gasoline	0.16%	0.07%	270.68	0.00	0.00	270.85
LHD2	Diesel	0.40%	0.18%	574.07	0.00	0.09	598.14
LHD2	Electricity	0.44%	0.20%	0.00	0.00	0.00	0.00
MCY	Gasoline	0.48%	0.50%	427.83	0.29	0.08	457.08
MDV	Gasoline	17.99%	18.80%	28,229.90	0.11	0.28	28,306.72
MDV	Diesel	0.19%	0.20%	303.15	0.00	0.05	315.82
MDV	Electricity	0.88%	0.92%	0.00	0.00	0.00	0.00
MDV	Plug-in Hybrid	0.55%	0.57%	293.23	0.00	0.00	293.53
MH	Gasoline	0.05%	0.05%	491.45	0.00	0.00	492.69
MH	Diesel	0.03%	0.03%	148.78	0.00	0.02	155.01
Motor Coach	Diesel	0.05%	0.06%	394.40	0.00	0.06	410.87
OBUS	Gasoline	0.02%	0.03%	180.84	0.00	0.00	181.28
OBUS	Electricity	0.03%	0.03%	0.00	0.00	0.00	0.00
PTO	Diesel	0.02%	0.01%	67.45	0.00	0.01	70.27
PTO	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	67.36	0.00	0.00	67.58
SBUS	Diesel	0.01%	0.01%	55.48	0.00	0.01	57.80
SBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00
SBUS	Natural Gas	0.00%	0.00%	3.66	0.01	0.00	4.10
T6 CAIRP Class 4	Diesel	0.00%	0.00%	0.83	0.00	0.00	0.86
T6 CAIRP Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 CAIRP Class 5	Diesel	0.00%	0.00%	1.14	0.00	0.00	1.18
T6 CAIRP Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 CAIRP Class 6	Diesel	0.00%	0.00%	2.95	0.00	0.00	3.07
T6 CAIRP Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 CAIRP Class 7	Diesel	0.02%	0.01%	29.86	0.00	0.00	31.10
T6 CAIRP Class 7	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Diesel	0.04%	0.02%	92.98	0.00	0.01	96.87
T6 Instate Delivery Class 4	Electricity	0.05%	0.02%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	1.21	0.00	0.00	1.30
T6 Instate Delivery Class 5	Diesel	0.03%	0.02%	75.86	0.00	0.01	79.03
T6 Instate Delivery Class 5	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.95	0.00	0.00	1.03

Year 2045 Existing: Mobile GHG Emissions

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

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	Pass. Vehicles	Trucks				
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Passenger Vehicles	Trucks	EMFAC default	**CO2**	**CH4**	**N2O**	
92%	8%		**AR5 GWP**	**AR5 GWP**	**AR5 GWP**	
			1	28	265	

Annual VMT	**463,300,638**					**MT/Year**	
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**CO2**	**CH4**	**N2O**	**CO2e**
T6 Instate Delivery Class 6	Diesel	0.07%	0.03%	157.21	0.00	0.02	163.78
T6 Instate Delivery Class 6	Electricity	0.08%	0.03%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	2.00	0.00	0.00	2.16
T6 Instate Delivery Class 7	Diesel	0.04%	0.02%	84.05	0.00	0.01	87.56
T6 Instate Delivery Class 7	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	1.81	0.00	0.00	1.95
T6 Instate Other Class 4	Diesel	0.06%	0.03%	119.48	0.00	0.02	124.47
T6 Instate Other Class 4	Electricity	0.06%	0.03%	0.00	0.00	0.00	0.00
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	1.42	0.00	0.00	1.52
T6 Instate Other Class 5	Diesel	0.15%	0.07%	307.78	0.00	0.05	320.63
T6 Instate Other Class 5	Electricity	0.17%	0.07%	0.00	0.00	0.00	0.00
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	3.57	0.00	0.00	3.84
T6 Instate Other Class 6	Diesel	0.09%	0.04%	194.25	0.00	0.03	202.36
T6 Instate Other Class 6	Electricity	0.10%	0.05%	0.00	0.00	0.00	0.00
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	2.26	0.00	0.00	2.43
T6 Instate Other Class 7	Diesel	0.05%	0.02%	116.23	0.00	0.02	121.09
T6 Instate Other Class 7	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	2.15	0.00	0.00	2.31
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	3.72	0.00	0.00	3.88
T6 Instate Tractor Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 6	Natural Gas	0.00%	0.00%	0.04	0.00	0.00	0.05
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	43.09	0.00	0.01	44.89
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.78	0.00	0.00	0.84
T6 OOS Class 4	Diesel	0.00%	0.00%	1.04	0.00	0.00	1.08
T6 OOS Class 5	Diesel	0.00%	0.00%	1.42	0.00	0.00	1.48
T6 OOS Class 6	Diesel	0.00%	0.00%	3.71	0.00	0.00	3.87
T6 OOS Class 7	Diesel	0.01%	0.01%	24.32	0.00	0.00	25.34
T6 Public Class 4	Diesel	0.00%	0.00%	7.61	0.00	0.00	7.93
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.49	0.00	0.00	0.53
T6 Public Class 5	Diesel	0.01%	0.01%	26.25	0.00	0.00	27.35
T6 Public Class 5	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 5	Natural Gas	0.00%	0.00%	1.91	0.00	0.00	2.06
T6 Public Class 6	Diesel	0.01%	0.00%	15.34	0.00	0.00	15.98
T6 Public Class 6	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00
T6 Public Class 6	Natural Gas	0.00%	0.00%	1.00	0.00	0.00	1.08
T6 Public Class 7	Diesel	0.02%	0.01%	45.38	0.00	0.01	47.27
T6 Public Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00
T6 Public Class 7	Natural Gas	0.00%	0.00%	3.17	0.00	0.00	3.43
T6 Utility Class 5	Diesel	0.00%	0.00%	1.61	0.00	0.00	1.68
T6 Utility Class 5	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 5	Natural Gas	0.00%	0.00%	0.01	0.00	0.00	0.01
T6 Utility Class 6	Diesel	0.00%	0.00%	0.30	0.00	0.00	0.32
T6 Utility Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 7	Diesel	0.00%	0.00%	0.42	0.00	0.00	0.43
T6 Utility Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T6 Utility Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.00	0.00
T6TS	Gasoline	0.14%	0.06%	452.26	0.00	0.00	452.80

Year 2045 Existing: Mobile GHG Emissions

Source: EMFAC2021 Version 1.0.2. PL Emission Rates. San Mateo County

1. Based on data provided Kittelson & Associates Inc., 2024.

2. Adjusted Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the 2008 Climate Change Scoping Plan Measure Documentation Supplement.

	Pass. Vehicles	Trucks				
Fleet Mix - San Mateo County (K)	**97%**	**3%**				
Passenger Vehicles	Trucks	EMFAC default	**CO2**	**CH4**	**N2O**	
92%	8%		**AR5 GWP**	**AR5 GWP**	**AR5 GWP**	
			1	28	265	
Annual VMT	**463,300,638**			**MT/Year**		

Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**CO2**	**CH4**	**N2O**	**CO2e**
T6TS	Electricity	0.16%	0.07%	0.00	0.00	0.00	0.00
T7 CAIRP Class 8	Diesel	0.11%	0.05%	279.33	0.00	0.04	290.99
T7 CAIRP Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.41	0.00	0.00	0.44
T7 NNOOS Class 8	Diesel	0.16%	0.07%	409.30	0.00	0.06	426.39
T7 NOOS Class 8	Diesel	0.06%	0.03%	148.63	0.00	0.02	154.84
T7 Other Port Class 8	Diesel	0.01%	0.00%	28.54	0.00	0.00	29.73
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7 POAK Class 8	Diesel	0.03%	0.02%	99.01	0.00	0.02	103.14
T7 POAK Class 8	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.19	0.00	0.00	0.20
T7 Public Class 8	Diesel	0.05%	0.02%	161.83	0.00	0.03	168.59
T7 Public Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00
T7 Public Class 8	Natural Gas	0.00%	0.00%	1.14	0.00	0.00	1.24
T7 Single Concrete/Transit Mix Class 8	Diesel	0.01%	0.00%	25.07	0.00	0.00	26.12
T7 Single Concrete/Transit Mix Class 8	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00
T7 Single Concrete/Transit Mix Class 8	Natural Gas	0.00%	0.00%	1.20	0.00	0.00	1.29
T7 Single Dump Class 8	Diesel	0.03%	0.01%	97.40	0.00	0.02	101.46
T7 Single Dump Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	4.55	0.00	0.00	4.92
T7 Single Other Class 8	Diesel	0.05%	0.02%	146.78	0.00	0.02	152.91
T7 Single Other Class 8	Electricity	0.04%	0.02%	0.00	0.00	0.00	0.00
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	7.22	0.01	0.00	7.79
T7 SWCV Class 8	Diesel	0.01%	0.00%	61.44	0.00	0.01	64.00
T7 SWCV Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00
T7 SWCV Class 8	Natural Gas	0.05%	0.02%	131.19	0.07	0.03	140.11
T7 Tractor Class 8	Diesel	0.10%	0.04%	254.79	0.00	0.04	265.43
T7 Tractor Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00
T7 Tractor Class 8	Natural Gas	0.01%	0.00%	18.73	0.02	0.00	20.23
T7 Utility Class 8	Diesel	0.00%	0.00%	2.71	0.00	0.00	2.82
T7 Utility Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
T7IS	Gasoline	0.00%	0.00%	1.96	0.00	0.00	1.99
T7IS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00
UBUS	Gasoline	0.02%	0.02%	82.95	0.00	0.00	83.03
UBUS	Electricity	0.16%	0.16%	0.00	0.00	0.00	0.00
		100%	100%	117,440.02	0.89	2.54	118,138

Operation-Related Annual Vehicle Fuel/Energy Usage Summary

Existing Conditions (Year 2024)

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
Existing Conditions	246,119,463	9,597,866	25.64	7,446,067	740,431	10.06	186,787	33,903	5.51	14,521,411	5,459,817	2.66
Total	**246,119,463**	**9,597,866**		**7,446,067**	**740,431**		**186,787**	**33,903**		**14,521,411**	**5,459,817**	

No Project (Year 2045)

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
No Project (Current GP)	331,223,543	10,869,241	30.47	7,376,771	633,314	11.65	153,137	21,351	7.17	38,178,425	17,499,104	2.18
Total	**331,223,543**	**10,869,241**		**7,376,771**	**633,314**		**153,137**	**21,351**		**38,178,425**	**17,499,104**	

GP Update (Year 2045)

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
GP Update	407,118,868	13,359,778	30.47	9,067,057	778,429	11.65	188,226	30,027	6.27	46,926,487	21,508,783	2.18
Total	**407,118,868**	**13,359,778**		**9,067,057**	**778,429**		**188,226**	**30,027**		**46,926,487**	**21,508,783**	

Total Net Change

Year	Gas			Diesel			CNG			Electricity		
	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	Gallons	Miles/Gal	VMT	kWh	Miles/kWh
Change from Existing Conditions	**160,999,405**	**3,761,912**	**NA**	**1,620,990**	**37,999**	**NA**	**1,439**	**-3,876**	**NA**	**32,405,077**	**16,048,967**	**NA**
Change from No Project	75,895,325	2,490,537	NA	1,690,286	145,115	NA	35,089	8,676	NA	8,748,062	4,009,679	NA

Notes

** VMT based on VMT data provided by Kittelson & Associates, 2024.*

*** Fuel consumption rates based on data obtained from EMFAC2021 Web Database, Version 1.0.2. https://arb.ca.gov/emfac/emissions-inventory/f7df17ce2153322cf12c7ff31f52997af7bf7717*

****VMT per year based on a conversion of VMT x 347 days per year to account for less travel on weekend, consistent with CARB statewide GHG emissions inventory methodology. California Air Resources Board. 2008, October. Climate Change Proposed Scoping Plan: A Framework for Change.*

Existing Conditions (Year 2024): Annual VMT

Vehicle type	Fleet percent	Annual VMT
LDA	46.95%	125,958,665
LDT1	4.09%	10,962,906
LDT2	28.02%	75,164,174
MDV	16.35%	43,850,235
LHD1	1.86%	4,982,881
LHD2	0.40%	1,079,147
MHD	0.71%	1,895,356
HHD	0.39%	1,056,018
OBUS	0.08%	216,769
UBUS	0.19%	507,970
MCY	0.43%	1,144,822
SBUS	0.04%	112,488
MH	0.06%	171,403
All Other Buses	0.37%	986,640
Motor Coach	0.05%	140,557
PTO	0.02%	43,697
	100.00%	268,273,728

Existing Conditions

Vehicle type	Gas percent	Diesel percent	CNG percent	Electricity percent	
LDA	89.94%	0.21%	0.00%	9.85%	
LDT1	99.38%	0.01%	0.00%	0.61%	
LDT2	98.21%	0.38%	0.00%	1.41%	
MDV	96.69%	1.30%	0.00%	2.01%	
LHD1	67.29%	32.12%	0.00%	0.59%	
LHD2	34.50%	64.83%	0.00%	0.67%	
MHD	20.72%	78.04%	0.85%	0.38%	<< Equal to T6 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
HHD	0.45%	90.42%	8.85%	0.28%	<< Equal to T7 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
OBUS	99.45%	0.00%	0.00%	0.55%	<< OBUS (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
UBUS	12.28%	63.13%	13.27%	11.32%	
MCY	100.00%	0.00%	0.00%	0.00%	
SBUS	47.27%	50.14%	2.11%	0.49%	
MH	67.83%	32.17%	0.00%	0.00%	
All Other Buses	0.00%	99.25%	0.75%	0.00%	
Motor Coach	0.00%	100.00%	0.00%	0.00%	
PTO	0.00%	99.69%	0.00%	0.31%	

Vehicle type	Gasoline			Diesel			CNG			Electricity		
	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	m/kWh	kWh
LDA	113,292,551	30.57	3,706,105	262,140	43.73	5,994	0	0	0	12,403,974	2.69	4,611,538
LDT1	10,894,684	26.03	418,547	1,307	24.33	54	0	0	0	66,916	2.75	24,325
LDT2	73,819,296	25.44	2,902,042	282,998	33.48	8,453	0	0	0	1,061,880	2.89	367,905
MDV	42,398,169	21.13	2,006,851	569,721	25.50	22,343	0	0	0	882,345	2.78	317,381
LHD1	3,352,822	10.11	331,706	1,600,559	16.16	99,054	0	0	0	29,501	1.53	19,312
LHD2	372,264	8.97	41,513	699,649	13.65	51,266	0	0	0	7,235	1.55	4,664
MHD	392,697	4.88	80,459	1,479,205	8.43	175,532	16,176	7.02	2,305	7,279	0.89	8,191
HHD	4,764	3.82	1,246	954,863	5.35	178,466	93,483	4.83	19,362	2,908	0.54	5,402
OBUS	215,581	4.94	43,607	0	8.25	0	0	0	0	1,188	0.00	0
UBUS	62,381	8.56	7,285	320,680	8.30	38,642	67,406	6.22	10,844	57,503	0.57	100,242
MCY	1,144,822	42.41	26,997	0	0	0	0	0	0	0	0.00	0
SBUS	53,177	10.23	5,200	56,397	8.16	6,910	2,368	5.57	425	547	0.95	576
MH	116,256	4.42	26,309	55,147	9.35	5,896	0	0	0	0	0.00	0
All Other Buses	0	0	0	979,286	8.64	113,312	7,354	7.61	966	0	0.00	0
Motor Coach	0	0	0	140,557	5.50	25,559	0	0	0	0	0.00	0
PTO	0	0	0	43,560	4.87	8,949	0	0	0	136	0.48	283
	246,119,463		**9,597,866**	**7,446,067**		**740,431**	**186,787**		**33,903**	**14,521,411**		**5,459,817**

No Project (Current GP): Annual VMT

Vehicle type	Fleet percent	Annual VMT
LDA	36.56%	137,801,719
LDT1	3.95%	14,883,639
LDT2	34.38%	129,590,695
MDV	20.51%	77,322,750
LHD1	1.78%	6,701,190
LHD2	0.43%	1,636,375
MHD	0.68%	2,568,113
HHD	0.38%	1,444,176
OBUS	0.06%	211,412
UBUS	0.19%	697,622
MCY	0.50%	1,879,648
SBUS	0.06%	209,133
MH	0.08%	317,059
All Other Buses	0.37%	1,402,024
Motor Coach	0.06%	209,720
PTO	0.02%	56,603
	100%	376,931,876

No Project (Current GP) Conditions

Vehicle type	Gas percent	Diesel percent	CNG percent	Electricity percent	
LDA	84.85%	0.05%	0.00%	15.10%	
LDT1	95.30%	0.00%	0.00%	4.70%	
LDT2	95.15%	0.36%	0.00%	4.49%	
MDV	92.86%	0.99%	0.00%	6.15%	
LHD1	33.75%	21.14%	0.00%	45.11%	
LHD2	15.64%	39.88%	0.00%	44.48%	
MHD	9.08%	40.92%	0.75%	49.25%	<< Equal to T6 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
HHD	0.06%	69.40%	7.04%	23.51%	<< Equal to T7 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
OBUS	5.33%	86.95%	1.46%	6.27%	<<OBUS (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
UBUS	11.39%	0.00%	0.00%	88.61%	
MCY	100.00%	0.00%	0.00%	0.00%	
SBUS	36.90%	20.64%	1.29%	41.17%	
MH	64.90%	35.10%	0.00%	0.00%	
All Other Buses	0.00%	98.11%	1.89%	0.00%	
Motor Coach	0.00%	100.00%	0.00%	0.00%	
PTO	0.00%	53.33%	0.00%	46.67%	

Vehicle type	Gasoline			Diesel			CNG			Electricity		
	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	m/kWh	kWh
LDA	116,930,506	36.77	3,179,688	67,742	56.41	1,201	0	0	0	20,803,472	2.68	7,757,287
LDT1	14,184,166	31.84	445,532	167	30.34	6	0	0	0	699,305	2.76	252,922
LDT2	123,303,645	30.60	4,030,081	467,132	40.92	11,416	0	0	0	5,819,918	2.80	2,079,474
MDV	71,800,649	25.31	2,836,829	765,384	31.49	24,308	0	0	0	4,756,717	2.75	1,729,319
LHD1	2,261,344	11.25	201,093	1,416,925	16.80	84,337	0	0	0	3,022,921	1.53	1,980,689
LHD2	255,880	10.01	25,566	652,634	14.39	45,363	0	0	0	727,861	1.55	469,279
MHD	233,194	5.48	42,530	1,050,965	9.47	111,003	19,156	0	0	1,264,799	0.92	1,378,896
HHD	849	4.68	182	1,002,187	7.04	142,275	101,648	5.57	18,250	339,492	0.54	628,193
OBUS	11,262	5.57	2,021	183,817	9.43	19,485	3,080	0	0	13,253	0.00	0
UBUS	79,453	10.09	7,871	0	0.00	0	0	0.00	0	618,169	0.57	1,077,619
MCY	1,879,648	42.34	44,395	0	0.00	0	0	0	0	0	0.00	0
SBUS	77,179	11.14	6,927	43,157	8.91	4,842	2,695	0	0	86,101	0.95	90,704
MH	205,768	4.42	46,526	111,291	9.33	11,930	0	0	0	0	0.00	0
All Other Buses	0	0	0	1,375,466	9.90	138,898	26,558	9	3,101	0	0.00	0
Motor Coach	0	0	0	209,720	6.36	32,984	0	0	0	0	0.00	0
PTO	0	0	0	30,185	5.73	5,268	0	0	0	26,417	0.48	54,724
	331,223,543		**10,869,241**	**7,376,771**		**633,314**	**153,137**		**21,351**	**38,178,425**		**17,499,104**

GP Update (Year 2045): Annual VMT

Vehicle type	Fleet percent	Annual VMT
LDA	36.56%	169,377,090
LDT1	3.95%	18,294,020
LDT2	34.38%	159,284,623
MDV	20.51%	95,040,196
LHD1	1.78%	8,236,675
LHD2	0.43%	2,011,328
MHD	0.68%	3,156,560
HHD	0.38%	1,775,089
OBUS	0.06%	259,854
UBUS	0.19%	857,472
MCY	0.50%	2,310,343
SBUS	0.06%	257,053
MH	0.08%	389,709
All Other Buses	0.37%	1,723,279
Motor Coach	0.06%	257,774
PTO	0.02%	69,572
	100%	463,300,638

GP Update Conditions

Vehicle type	Gas percent	Diesel percent	CNG percent	Electricity percent	
LDA	84.85%	0.05%	0.00%	15.10%	
LDT1	95.30%	0.00%	0.00%	4.70%	
LDT2	95.15%	0.36%	0.00%	4.49%	
MDV	92.86%	0.99%	0.00%	6.15%	
LHD1	33.75%	21.14%	0.00%	45.11%	
LHD2	15.64%	39.88%	0.00%	44.48%	
MHD	9.08%	40.92%	0.75%	49.25%	<< Equal to T6 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
HHD	0.06%	69.40%	7.04%	23.51%	<< Equal to T7 (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
OBUS	5.33%	86.95%	1.46%	6.27%	<< OBUS (https://www.arb.ca.gov/msei/downloads/emfac2014/emfac2014-vol3-technical-documentation-052015.pdf)
UBUS	11.39%	0.00%	0.00%	88.61%	
MCY	100.00%	0.00%	0.00%	0.00%	
SBUS	36.90%	20.64%	1.29%	41.17%	
MH	64.90%	35.10%	0.00%	0.00%	
All Other Buses	0.00%	98.11%	1.89%	0.00%	
Motor Coach	0.00%	100.00%	0.00%	0.00%	
PTO	0.00%	53.33%	0.00%	46.67%	

Vehicle type	Gasoline			Diesel			CNG			Electricity		
	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	mpg	Gallons	VMT	m/kWh	kWh
LDA	143,723,525	36.77	3,908,269	83,264	56.41	1,476	0	0	0	25,570,302	2.68	9,534,762
LDT1	17,434,273	31.84	547,619	206	30.34	7	0	0	0	859,541	2.76	310,876
LDT2	151,556,981	30.60	4,953,519	574,168	40.92	14,032	0	0	0	7,153,473	2.80	2,555,956
MDV	88,252,781	25.31	3,486,849	940,761	31.49	29,877	0	0	0	5,846,654	2.75	2,125,569
LHD1	2,779,499	11.25	247,171	1,741,594	16.80	103,662	0	0	0	3,715,581	1.53	2,434,536
LHD2	314,512	10.01	31,424	802,176	14.39	55,758	0	0	0	894,640	1.55	576,807
MHD	286,627	5.48	52,275	1,291,779	9.47	136,438	23,545	7.29	3,229	1,554,610	0.92	1,694,851
HHD	1,044	4.68	223	1,231,824	7.04	174,875	124,939	5.57	22,432	417,282	0.54	772,135
OBUS	13,843	5.57	2,484	225,936	9.43	23,950	3,785	0	0	16,289	0.00	0
UBUS	97,659	10.09	9,675	0	0.00	0	0	0.00	0	759,814	0.57	1,324,541
MCY	2,310,343	42.34	54,568	0	0.00	0	0	0	0	0	0.00	0
SBUS	94,864	11.14	8,515	53,045	8.91	5,951	3,313	5.98	554	105,830	0.95	111,487
MH	252,917	4.42	57,187	136,792	9.33	14,663	0	0	0	0	0.00	0
All Other Buses	0	0	0	1,690,635	9.90	170,724	32,644	8.56	3,812	0	0.00	0
Motor Coach	0	0	0	257,774	6.36	40,542	0	0	0	0	0.00	0
PTO	0	0	0	37,102	5.73	6,476	0	0	0	32,470	0.48	67,263
	407,118,868		**13,359,778**	**9,067,057**		**778,429**	**188,226**		**30,027**	**46,926,487**		**21,508,783**

EMFAC Fuel Usage: Year 2024

Vehicle type	GAS			DSL			NG			ELEC		
	VMT/day	Gallons/day	Miles/gallon	VMT/day	Gallons/day	Miles/gallon	VMT/day	Gallons/day	Miles/gallon	VMT/day	kWh/day	Miles/kWh
All other buses	0	0	0.00	65,588	7,589	8.64	493	65	7.61	0	0	0.00
LDA	7,587,857	248,219	30.57	17,557	401	43.73	0	0	0.00	830,766	308,861	2.69
LDT1	729,680	28,033	26.03	88	4	24.33	0	0	0.00	4,482	1,629	2.75
LDT2	4,944,105	194,366	25.44	18,954	566	33.48	0	0	0.00	71,120	24,641	2.89
LHD1	401,258	39,698	10.11	191,551	11,855	16.16	0	0	0.00	3,531	2,311	1.53
LHD2	44,552	4,968	8.97	83,732	6,135	13.65	0	0	0.00	866	558	1.55
MCY	76,675	1,808	42.41	0	0	0.00	0	0	0.00	0	0	0.00
MDV	2,839,650	134,410	21.13	38,157	1,496	25.50	0	0	0.00	59,096	21,257	2.78
MH	7,786	1,762	4.42	3,694	395	9.35	0	0	0.00	0	0	0.00
Motor coach	0	0	0.00	9,414	1,712	5.50	0	0	0.00	0	0	0.00
OBUS	14,439	2,921	4.94	0	0	0.00	0	0	0.00	80	88	0.90
PTO	0	0	0.00	5,213	1,071	4.87	0	0	0.00	16	34	0.48
SBUS	3,562	348	10.23	3,777	463	8.16	159	28	5.57	37	39	0.95
T6	46,997	9,629	4.88	177,028	21,007	8.43	1,936	276	7.02	871	980	0.89
T7	570	149	3.82	114,276	21,358	5.35	11,188	2,317	4.83	348	647	0.54
UBUS	4,178	488	8.56	21,478	2,588	8.30	4,515	726	6.22	3,851	6,714	0.57
Total	**16,701,310**	**666,800**	**25.05**	**750,508**	**76,641**	**9.79**	**18,289**	**3,413**	**5.36**	**975,063**	**367,759**	**2.65**

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: San Mateo (SF)
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Fuel Consumption	Energy Consumption
San Mateo (SF)	2024	All Other Buses	Aggregate	Aggregate	Diesel	1010.019767	65588.4382	65588.4382	0	8989.17593	7.589183563	0
San Mateo (SF)	2024	All Other Buses	Aggregate	Aggregate	Natural Gas	7.797527652	492.558504	492.558504	0	69.3979961	0.06472126	0
San Mateo (SF)	2024	LDA	Aggregate	Aggregate	Gasoline	239419.6914	7453999.531	7453999.531	0	1124271.39	243.7886349	0
San Mateo (SF)	2024	LDA	Aggregate	Aggregate	Diesel	770.4429717	17557.02655	17557.02655	0	3247.13815	0.401479569	0
San Mateo (SF)	2024	LDA	Aggregate	Aggregate	Electricity	17934.85844	689392.1346	0	689392.1346	89072.0548	0	266162.2626
San Mateo (SF)	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	7500.935942	275231.0752	133857.39	141373.6851	31016.3701	4.430624723	42699.06652
San Mateo (SF)	2024	LDT1	Aggregate	Aggregate	Gasoline	25010.0531	728708.633	728708.633	0	114230.104	28.00023957	0
San Mateo (SF)	2024	LDT1	Aggregate	Aggregate	Diesel	6.907673926	87.50596908	87.50596908	0	19.6986772	0.003596625	0
San Mateo (SF)	2024	LDT1	Aggregate	Aggregate	Electricity	91.59653564	3278.131471	0	3278.131471	443.544237	0	1265.629307
San Mateo (SF)	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	54.25068822	2174.892913	971.290704	1203.60221	224.326596	0.032283034	363.5237404
San Mateo (SF)	2024	LDT2	Aggregate	Aggregate	Gasoline	149535.9991	4914901.344	4914901.344	0	718035.565	193.3912128	0
San Mateo (SF)	2024	LDT2	Aggregate	Aggregate	Diesel	582.174762	18954.01783	18954.01783	0	2798.23277	0.566142562	0
San Mateo (SF)	2024	LDT2	Aggregate	Aggregate	Electricity	1250.956924	37598.8884	0	37598.8884	6394.24522	0	14516.27413
San Mateo (SF)	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	1631.39119	62724.84772	29203.50056	33521.34716	6745.80257	0.975280835	10124.44594
San Mateo (SF)	2024	LHD1	Aggregate	Aggregate	Gasoline	11110.29193	401258.44	401258.44	0	165526.795	39.69788678	0
San Mateo (SF)	2024	LHD1	Aggregate	Aggregate	Diesel	4996.691619	191551.3871	191551.3871	0	62852.0947	11.8545718	0
San Mateo (SF)	2024	LHD1	Aggregate	Aggregate	Electricity	56.88551675	3530.641734	0	3530.641734	794.654645	0	2311.167208
San Mateo (SF)	2024	LHD2	Aggregate	Aggregate	Gasoline	1289.384979	44551.75855	44551.75855	0	19209.915	4.968155251	0
San Mateo (SF)	2024	LHD2	Aggregate	Aggregate	Diesel	2173.661875	83732.4448	83732.4448	0	27341.9319	6.135398203	0
San Mateo (SF)	2024	LHD2	Aggregate	Aggregate	Electricity	14.7237506	865.83827	0	865.83827	194.897859	0	558.211816
San Mateo (SF)	2024	MCY	Aggregate	Aggregate	Gasoline	13263.89041	76675.37497	76675.37497	0	26527.7808	1.808115529	0
San Mateo (SF)	2024	MDV	Aggregate	Aggregate	Gasoline	84173.19233	2823183.304	2823183.304	0	402441.599	133.8538352	0
San Mateo (SF)	2024	MDV	Aggregate	Aggregate	Diesel	1163.666539	38157.49894	38157.49894	0	5552.1003	1.496437119	0
San Mateo (SF)	2024	MDV	Aggregate	Aggregate	Electricity	1347.217163	40547.65645	0	40547.65645	6889.41548	0	15654.74197
San Mateo (SF)	2024	MDV	Aggregate	Aggregate	Plug-in Hybrid	894.3671937	35015.16888	16467.10766	18548.06122	3698.20835	0.55655051	5602.06731
San Mateo (SF)	2024	MH	Aggregate	Aggregate	Gasoline	801.8478893	7786.339137	7786.339137	0	80.2168629	1.762048879	0
San Mateo (SF)	2024	MH	Aggregate	Aggregate	Diesel	356.6508886	3693.518062	3693.518062	0	35.6650889	0.394900465	0
San Mateo (SF)	2024	Motor Coach	Aggregate	Aggregate	Diesel	67.4728227	9413.923513	9413.923513	0	1550.52547	1.711867015	0
San Mateo (SF)	2024	OBUS	Aggregate	Aggregate	Gasoline	254.1966634	14438.68385	14438.68385	0	5085.96684	2.92058158	0
San Mateo (SF)	2024	OBUS	Aggregate	Aggregate	Electricity	0.873406414	79.58076023	0	79.58076023	17.4751155	0	88.16330587
San Mateo (SF)	2024	PTO	Aggregate	Aggregate	Diesel	0	5213.191697	5213.191697	0	0	1.071032644	0
San Mateo (SF)	2024	PTO	Aggregate	Aggregate	Electricity	0	16.32243227	0	16.32243227	0	0	33.81222478
San Mateo (SF)	2024	SBUS	Aggregate	Aggregate	Gasoline	66.88140617	3561.549238	3561.549238	0	267.525625	0.348304009	0
San Mateo (SF)	2024	SBUS	Aggregate	Aggregate	Diesel	168.9599856	3777.201946	3777.201946	0	2446.54059	0.462822866	0
San Mateo (SF)	2024	SBUS	Aggregate	Aggregate	Electricity	0.908830063	36.62057063	0	36.62057063	8.14021738	0	38.57814485
San Mateo (SF)	2024	SBUS	Aggregate	Aggregate	Natural Gas	6.288614207	158.6097198	158.6097198	0	91.0591337	0.028483159	0
San Mateo (SF)	2024	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1.983513681	130.4020515	130.4020515	0	45.5811444	0.014621724	0
San Mateo (SF)	2024	T6 CAIRP Class 4	Aggregate	Aggregate	Electricity	0.010349368	0.742575428	0	0.742575428	0.23782848	0	0.806647452
San Mateo (SF)	2024	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	2.646243289	179.0178477	179.0178477	0	60.8106708	0.020068539	0
San Mateo (SF)	2024	T6 CAIRP Class 5	Aggregate	Aggregate	Electricity	0.011838264	0.888997547	0	0.888997547	0.2720433	0	0.965703388
San Mateo (SF)	2024	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	8.646825221	466.3157103	466.3157103	0	198.704044	0.051484703	0
San Mateo (SF)	2024	T6 CAIRP Class 6	Aggregate	Aggregate	Electricity	0.069996419	3.786023693	0	3.786023693	1.60851772	0	4.112695159
San Mateo (SF)	2024	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	14.56016987	2937.850251	2937.850251	0	334.592704	0.303274632	0
San Mateo (SF)	2024	T6 CAIRP Class 7	Aggregate	Aggregate	Electricity	0.056100538	10.86543909	0	10.86543909	1.28919037	0	11.80294746
San Mateo (SF)	2024	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	366.2833441	12333.87447	12333.87447	0	5226.86332	1.508506872	0
San Mateo (SF)	2024	T6 Instate Delivery Class 4	Aggregate	Aggregate	Electricity	1.106257593	43.65736255	0	43.65736255	15.7862959	0	46.63824705
San Mateo (SF)	2024	T6 Instate Delivery Class 4	Aggregate	Aggregate	Natural Gas	1.404307203	54.10822375	54.10822375	0	20.0394638	0.00802232	0
San Mateo (SF)	2024	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	293.8153679	10074.01127	10074.01127	0	4192.7453	1.227014671	0
San Mateo (SF)	2024	T6 Instate Delivery Class 5	Aggregate	Aggregate	Electricity	0.616970787	24.30357372	0	24.30357372	8.80417313	0	25.96299935
San Mateo (SF)	2024	T6 Instate Delivery Class 5	Aggregate	Aggregate	Natural Gas	0.943607872	35.43158414	35.43158414	0	13.4652843	0.005216791	0
San Mateo (SF)	2024	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	614.8350364	20894.67489	20894.67489	0	8773.69597	2.539887401	0
San Mateo (SF)	2024	T6 Instate Delivery Class 6	Aggregate	Aggregate	Electricity	1.548728889	60.49169567	0	60.49169567	22.1003612	0	64.62201294
San Mateo (SF)	2024	T6 Instate Delivery Class 6	Aggregate	Aggregate	Natural Gas	1.950903473	74.71166879	74.71166879	0	27.8393926	0.011019471	0
San Mateo (SF)	2024	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	148.2960561	8198.497371	8198.497371	0	2116.18472	0.968884451	0
San Mateo (SF)	2024	T6 Instate Delivery Class 7	Aggregate	Aggregate	Electricity	0.185788329	8.385499202	0	8.385499202	2.65119945	0	8.958053364
San Mateo (SF)	2024	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	3.655196841	206.4111391	206.4111391	0	52.1596589	0.030190225	0
San Mateo (SF)	2024	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	415.5835033	16931.77251	16931.77251	0	4804.1453	1.983456033	0
San Mateo (SF)	2024	T6 Instate Other Class 4	Aggregate	Aggregate	Electricity	0.992766553	44.34149507	0	44.34149507	11.4763813	0	47.00558028
San Mateo (SF)	2024	T6 Instate Other Class 4	Aggregate	Aggregate	Natural Gas	1.299589409	60.77961234	60.77961234	0	15.0232536	0.008046765	0
San Mateo (SF)	2024	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	999.352634	43641.98074	43641.98074	0	11552.5164	5.140992134	0
San Mateo (SF)	2024	T6 Instate Other Class 5	Aggregate	Aggregate	Electricity	1.383953572	62.738618	0	62.738618	15.9985033	0	66.50802234
San Mateo (SF)	2024	T6 Instate Other Class 5	Aggregate	Aggregate	Natural Gas	2.665543721	121.4962044	121.4962044	0	30.8136854	0.015792543	0
San Mateo (SF)	2024	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	644.9267498	27528.84395	27528.84395	0	7455.35323	3.226104653	0
San Mateo (SF)	2024	T6 Instate Other Class 6	Aggregate	Aggregate	Electricity	1.520465658	68.33436926	0	68.33436926	17.576583	0	72.43997242
San Mateo (SF)	2024	T6 Instate Other Class 6	Aggregate	Aggregate	Natural Gas	1.728483917	78.15716702	78.15716702	0	19.9812741	0.010194293	0
San Mateo (SF)	2024	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	272.5670106	12873.6112	12873.6112	0	3150.87464	1.477380532	0
San Mateo (SF)	2024	T6 Instate Other Class 7	Aggregate	Aggregate	Electricity	0.384250638	26.00897323	0	26.00897323	4.44193737	0	27.57162061
San Mateo (SF)	2024	T6 Instate Other Class 7	Aggregate	Aggregate	Natural Gas	6.430505099	329.8437934	329.8437934	0	74.3366389	0.042543623	0
San Mateo (SF)	2024	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	9.851995087	539.3079959	539.3079959	0	113.889063	0.064482435	0
San Mateo (SF)	2024	T6 Instate Tractor Class 6	Aggregate	Aggregate	Electricity	0.008442585	0.541719277	0	0.541719277	0.09759628	0	0.57426636
San Mateo (SF)	2024	T6 Instate Tractor Class 6	Aggregate	Aggregate	Natural Gas	0.020352052	1.197239749	1.197239749	0	0.23526973	0.0001485	0
San Mateo (SF)	2024	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	63.41012483	3772.491416	3772.491416	0	733.021043	0.410140477	0
San Mateo (SF)	2024	T6 Instate Tractor Class 7	Aggregate	Aggregate	Electricity	0.064626863	4.540616084	0	4.540616084	0.74708654	0	4.813421232

San Mateo (SF)	2024 T6 Instate Tractor Class 7	Aggregate	Aggregate	Natural Gas	1.1120648	71.92311018	71.92311018	0	12.8554691	0.009102086	0
San Mateo (SF)	2024 T6 OOS Class 4	Aggregate	Aggregate	Diesel	1.123788222	73.34403377	73.34403377	0	25.8246533	0.008182281	0
San Mateo (SF)	2024 T6 OOS Class 5	Aggregate	Aggregate	Diesel	1.492532866	100.6148253	100.6148253	0	34.2984053	0.011231279	0
San Mateo (SF)	2024 T6 OOS Class 6	Aggregate	Aggregate	Diesel	4.898813631	262.9094172	262.9094172	0	112.574737	0.028829474	0
San Mateo (SF)	2024 T6 OOS Class 7	Aggregate	Aggregate	Diesel	7.68570669	1911.678388	1911.678388	0	176.61754	0.195918438	0
San Mateo (SF)	2024 T6 Public Class 4	Aggregate	Aggregate	Diesel	34.20999397	1162.950929	1162.950929	0	175.497269	0.153603171	0
San Mateo (SF)	2024 T6 Public Class 4	Aggregate	Aggregate	Electricity	0.160369606	6.87740272	0	6.87740272	0.82269608	0	8.121528704
San Mateo (SF)	2024 T6 Public Class 4	Aggregate	Aggregate	Natural Gas	1.217342352	51.22595697	51.22595697	0	6.24496627	0.00775953	0
San Mateo (SF)	2024 T6 Public Class 5	Aggregate	Aggregate	Diesel	104.9502653	3865.304928	3865.304928	0	538.394861	0.494415674	0
San Mateo (SF)	2024 T6 Public Class 5	Aggregate	Aggregate	Electricity	0.391950434	16.70415981	0	16.70415981	2.01070572	0	19.72595162
San Mateo (SF)	2024 T6 Public Class 5	Aggregate	Aggregate	Natural Gas	8.287784814	341.5227447	341.5227447	0	42.5163361	0.052109302	0
San Mateo (SF)	2024 T6 Public Class 6	Aggregate	Aggregate	Diesel	66.92224605	2330.283246	2330.283246	0	343.311122	0.303570875	0
San Mateo (SF)	2024 T6 Public Class 6	Aggregate	Aggregate	Electricity	0.308873066	12.10297475	0	12.10297475	1.58451883	0	14.29240963
San Mateo (SF)	2024 T6 Public Class 6	Aggregate	Aggregate	Natural Gas	2.686862032	112.0688131	112.0688131	0	13.7836022	0.016885504	0
San Mateo (SF)	2024 T6 Public Class 7	Aggregate	Aggregate	Diesel	143.5330908	6329.543625	6329.543625	0	736.324756	0.820016689	0
San Mateo (SF)	2024 T6 Public Class 7	Aggregate	Aggregate	Electricity	0.659246533	42.31276549	0	42.31276549	3.38193471	0	49.96716835
San Mateo (SF)	2024 T6 Public Class 7	Aggregate	Aggregate	Natural Gas	7.376587145	390.2663914	390.2663914	0	37.8418921	0.057968499	0
San Mateo (SF)	2024 T6 Utility Class 5	Aggregate	Aggregate	Diesel	8.29809359	337.0120214	337.0120214	0	106.215598	0.038117309	0
San Mateo (SF)	2024 T6 Utility Class 5	Aggregate	Aggregate	Electricity	0.063066278	2.74370955	0	2.74370955	0.80724836	0	3.073128614
San Mateo (SF)	2024 T6 Utility Class 5	Aggregate	Aggregate	Natural Gas	0.110344035	4.323833815	4.323833815	0	1.41240364	0.000590809	0
San Mateo (SF)	2024 T6 Utility Class 6	Aggregate	Aggregate	Diesel	1.575007959	63.65109565	63.65109565	0	20.1601019	0.007173849	0
San Mateo (SF)	2024 T6 Utility Class 6	Aggregate	Aggregate	Electricity	0.011765013	0.51183897	0	0.51183897	0.15059217	0	0.573292091
San Mateo (SF)	2024 T6 Utility Class 6	Aggregate	Aggregate	Natural Gas	0.021890003	0.861137985	0.861137985	0	0.28019203	0.000116913	0
San Mateo (SF)	2024 T6 Utility Class 7	Aggregate	Aggregate	Diesel	1.784439681	88.10009957	88.10009957	0	22.8408279	0.009873541	0
San Mateo (SF)	2024 T6 Utility Class 7	Aggregate	Aggregate	Electricity	0.014117152	0.83513856	0	0.83513856	0.18069954	0	0.935408125
San Mateo (SF)	2024 T6 Utility Class 7	Aggregate	Aggregate	Natural Gas	0.03545986	1.534846409	1.534846409	0	0.45388621	0.00020776	0
San Mateo (SF)	2024 T6TS	Aggregate	Aggregate	Gasoline	803.5706606	46997.13647	46997.13647	0	16077.8418	9.629176874	0
San Mateo (SF)	2024 T6TS	Aggregate	Aggregate	Electricity	4.712404135	429.3725092	0	429.3725092	94.2857819	0	500.8372762
San Mateo (SF)	2024 T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	84.84073748	17133.70801	17133.70801	0	1949.64015	2.803922103	0
San Mateo (SF)	2024 T7 CAIRP Class 8	Aggregate	Aggregate	Electricity	0.518432836	92.356237	0	92.356237	11.9135866	0	168.6356614
San Mateo (SF)	2024 T7 CAIRP Class 8	Aggregate	Aggregate	Natural Gas	0.192916589	39.36784357	39.36784357	0	4.43322321	0.006981924	0
San Mateo (SF)	2024 T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	76.40814562	20499.40957	20499.40957	0	1755.85919	3.29663371	0
San Mateo (SF)	2024 T7 NOOS Class 8	Aggregate	Aggregate	Diesel	32.17354332	7448.809261	7448.809261	0	739.348026	1.217759609	0
San Mateo (SF)	2024 T7 Other Port Class 8	Aggregate	Aggregate	Diesel	8.837314454	1626.469854	1626.469854	0	144.578464	0.273643721	0
San Mateo (SF)	2024 T7 Other Port Class 8	Aggregate	Aggregate	Electricity	0.015367303	3.26505997	0	3.26505997	0.25140908	0	5.942302173
San Mateo (SF)	2024 T7 POAK Class 8	Aggregate	Aggregate	Diesel	56.8181039	5636.396346	5636.396346	0	929.54418	0.966024078	0
San Mateo (SF)	2024 T7 POAK Class 8	Aggregate	Aggregate	Electricity	0.131851273	10.43004771	0	10.43004771	2.15708682	0	18.98234511
San Mateo (SF)	2024 T7 POAK Class 8	Aggregate	Aggregate	Natural Gas	0.028205543	2.725407467	2.725407467	0	0.46144268	0.000480064	0
San Mateo (SF)	2024 T7 Public Class 8	Aggregate	Aggregate	Diesel	332.3453533	14458.55637	14458.55637	0	1704.93166	2.762333038	0
San Mateo (SF)	2024 T7 Public Class 8	Aggregate	Aggregate	Electricity	1.134930373	70.76402518	0	70.76402518	5.82219281	0	138.8802418
San Mateo (SF)	2024 T7 Public Class 8	Aggregate	Aggregate	Natural Gas	1.60266138	78.39394478	78.39394478	0	8.22165288	0.017020398	0
San Mateo (SF)	2024 T7 Single Concrete/Transit	Aggregate	Aggregate	Diesel	48.33256085	3435.825693	3435.825693	0	455.292723	0.579451144	0
San Mateo (SF)	2024 T7 Single Concrete/Transit	Aggregate	Aggregate	Electricity	0.397952369	28.87532303	0	28.87532303	3.74871131	0	52.64416571
San Mateo (SF)	2024 T7 Single Concrete/Transit	Aggregate	Aggregate	Natural Gas	2.859845123	207.3550381	207.3550381	0	26.9397411	0.035364148	0
San Mateo (SF)	2024 T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	174.077676	10437.83978	10437.83978	0	1639.81171	1.806073866	0
San Mateo (SF)	2024 T7 Single Dump Class 8	Aggregate	Aggregate	Electricity	0.348387641	25.93609401	0	25.93609401	3.28181158	0	47.28549805
San Mateo (SF)	2024 T7 Single Dump Class 8	Aggregate	Aggregate	Natural Gas	9.113712089	572.3361799	572.3361799	0	85.8511679	0.105335289	0
San Mateo (SF)	2024 T7 Single Other Class 8	Aggregate	Aggregate	Diesel	180.5433499	10863.95625	10863.95625	0	1700.71836	1.863044516	0
San Mateo (SF)	2024 T7 Single Other Class 8	Aggregate	Aggregate	Electricity	0.376763203	27.39161443	0	27.39161443	3.54910937	0	49.93913617
San Mateo (SF)	2024 T7 Single Other Class 8	Aggregate	Aggregate	Natural Gas	11.58787791	737.3624714	737.3624714	0	109.15781	0.132640751	0
San Mateo (SF)	2024 T7 SWCV Class 8	Aggregate	Aggregate	Diesel	131.2263109	8511.736571	8511.736571	0	603.64103	3.459575938	0
San Mateo (SF)	2024 T7 SWCV Class 8	Aggregate	Aggregate	Electricity	0.782742032	49.03923842	0	49.03923842	3.60061335	0	91.23998962
San Mateo (SF)	2024 T7 SWCV Class 8	Aggregate	Aggregate	Natural Gas	119.1407726	7712.027968	7712.027968	0	548.047554	1.691284196	0
San Mateo (SF)	2024 T7 Tractor Class 8	Aggregate	Aggregate	Diesel	183.0109509	13952.32317	13952.32317	0	2659.14912	2.283276047	0
San Mateo (SF)	2024 T7 Tractor Class 8	Aggregate	Aggregate	Electricity	0.499999036	37.82532684	0	37.82532684	7.26498599	0	68.86894326
San Mateo (SF)	2024 T7 Tractor Class 8	Aggregate	Aggregate	Natural Gas	24.02355135	1838.262606	1838.262606	0	349.062201	0.32812323	0
San Mateo (SF)	2024 T7 Utility Class 8	Aggregate	Aggregate	Diesel	6.010973441	270.9164503	270.9164503	0	76.9404601	0.046685062	0
San Mateo (SF)	2024 T7 Utility Class 8	Aggregate	Aggregate	Electricity	0.012198141	0.773029309	0	0.773029309	0.1561362	0	1.455458256
San Mateo (SF)	2024 T7IS	Aggregate	Aggregate	Gasoline	4.384109781	570.1519189	570.1519189	0	87.7172685	0.149160189	0
San Mateo (SF)	2024 T7IS	Aggregate	Aggregate	Electricity	0.004426254	1.309490543	0	1.309490543	0.08856049	0	2.63120371
San Mateo (SF)	2024 UBUS	Aggregate	Aggregate	Gasoline	61.44417623	4178.009813	4178.009813	0	245.776705	0.487916261	0
San Mateo (SF)	2024 UBUS	Aggregate	Aggregate	Diesel	277.5892805	21477.77652	21477.77652	0	1110.35712	2.588054266	0
San Mateo (SF)	2024 UBUS	Aggregate	Aggregate	Electricity	37.07940274	3851.303292	0	3851.303292	148.317611	0	6713.761815
San Mateo (SF)	2024 UBUS	Aggregate	Aggregate	Natural Gas	65.26113973	4514.572673	4514.572673	0	261.044559	0.726284068	0

EMFAC Fuel Usage: Year 2045

Vehicle type	GAS			DSL			NG			ELEC		
	VMT/day	Gallons/day	Miles/gallon	VMT/day	Gallons/day	Miles/gallon	VMT/day	Gallons/day	Miles/gallon	VMT/day	kWh/day	Miles/kWh
All other buses	0	0	0.00	69,257	6,994	9.90	1,337	156	8.56	0	0	0.00
LDA	5,887,652	160,103	36.77	3,411	60	56.41	0	0	0.00	1,047,491	390,593	2.68
LDT1	714,197	22,433	31.84	8	0	30.34	0	0	0.00	35,211	12,735	2.76
LDT2	6,208,551	202,922	30.60	23,521	575	40.92	0	0	0.00	293,043	104,705	2.80
LHD1	272,268	24,212	11.25	170,599	10,154	16.80	0	0	0.00	363,963	238,477	1.53
LHD2	30,808	3,078	10.01	78,578	5,462	14.39	0	0	0.00	87,635	56,502	1.55
MCY	94,644	2,235	42.34	0	0	0.00	0	0	0.00	0	0	0.00
MDV	3,615,286	142,839	25.31	38,538	1,224	31.49	0	0	0.00	239,509	87,074	2.75
MH	10,361	2,343	4.42	5,604	601	9.33	0	0	0.00	0	0	0.00
Motor coach	0	0	0.00	10,560	1,661	6.36	0	0	0.00	0	0	0.00
OBUS	4,890	878	5.57	0	0	0.00	0	0	0.00	5,755	6,375	0.90
PTO	0	0	0.00	3,634	634	5.73	0	0	0.00	3,181	6,589	0.48
SBUS	3,886	349	11.14	2,173	244	8.91	136	23	5.98	4,335	4,567	0.95
T6	28,077	5,121	5.48	126,537	13,365	9.47	2,306	316	7.29	152,283	166,020	0.92
T7	102	22	4.68	120,664	17,130	7.04	12,238	2,197	5.57	40,875	75,635	0.54
UBUS	4,001	396	10.09	0	0	0.00	0	0	0.00	31,126	54,260	0.57
Total	**16,874,724**	**566,930**	**29.77**	**653,085**	**58,104**	**11.24**	**16,018**	**2,692**	**5.95**	**2,304,407**	**1,203,532**	**1.91**

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Sub-Area
Region: San Mateo (SF)
Calendar Year: 2045
Season: Annual
Vehicle Classification: EMFAC202x Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Fuel Consumption	Energy Consumption
San Mateo (SF)	2045	All Other Buses	Aggregate	Aggregate	Diesel	1340.09721	69257.08708	69257.08708	0	11926.8652	6.99373494	0
San Mateo (SF)	2045	All Other Buses	Aggregate	Aggregate	Natural Gas	24.36419826	1337.25222	1337.25222	0	216.841365	0.156155385	0
San Mateo (SF)	2045	LDA	Aggregate	Aggregate	Gasoline	241546.7287	5774157.802	5774157.802	0	1135479.97	156.2111025	0
San Mateo (SF)	2045	LDA	Aggregate	Aggregate	Diesel	159.995748	3410.921204	3410.921204	0	719.953947	0.060469203	0
San Mateo (SF)	2045	LDA	Aggregate	Aggregate	Electricity	33287.8523	883009.3787	0	883009.3787	157816.147	0	340914.4989
San Mateo (SF)	2045	LDA	Aggregate	Aggregate	Plug-in Hybrid	11366.29417	277975.8346	113494.5661	164481.2685	46999.6264	3.891648389	49678.24542
San Mateo (SF)	2045	LDT1	Aggregate	Aggregate	Gasoline	32033.3468	707176.6423	707176.6423	0	146969.2	22.18886898	0
San Mateo (SF)	2045	LDT1	Aggregate	Aggregate	Diesel	0.372594954	8.429698245	8.429698245	0	1.73296889	0.000277884	0
San Mateo (SF)	2045	LDT1	Aggregate	Aggregate	Electricity	960.9380954	24986.87947	0	24986.87947	4532.30129	0	9646.997756
San Mateo (SF)	2045	LDT1	Aggregate	Aggregate	Plug-in Hybrid	735.6158659	17244.91005	7020.566118	10224.34393	3041.77161	0.244425207	3088.056601
San Mateo (SF)	2045	LDT2	Aggregate	Aggregate	Gasoline	270934.7147	6139422.567	6139422.567	0	1257668.65	200.4989241	0
San Mateo (SF)	2045	LDT2	Aggregate	Aggregate	Diesel	1035.670912	23520.88392	23520.88392	0	4812.72498	0.574810196	0
San Mateo (SF)	2045	LDT2	Aggregate	Aggregate	Electricity	10719.99382	192704.9604	0	192704.9604	50549.6946	0	74400.0195
San Mateo (SF)	2045	LDT2	Aggregate	Aggregate	Plug-in Hybrid	7382.073596	169466.3075	69128.34732	100337.9601	30524.8743	2.422610595	30305.05451
San Mateo (SF)	2045	LHD1	Aggregate	Aggregate	Gasoline	11718.77322	272268.1519	272268.1519	0	174592.26	24.21180232	0
San Mateo (SF)	2045	LHD1	Aggregate	Aggregate	Diesel	7326.965544	170599.3232	170599.3232	0	92164.0092	10.15428541	0
San Mateo (SF)	2045	LHD1	Aggregate	Aggregate	Electricity	12774.32542	363962.8551	0	363962.8551	179038.681	0	238477.0333
San Mateo (SF)	2045	LHD2	Aggregate	Aggregate	Gasoline	1351.214651	30808.25966	30808.25966	0	20131.085	3.078152775	0
San Mateo (SF)	2045	LHD2	Aggregate	Aggregate	Diesel	3483.022905	78577.83275	78577.83275	0	43812.0465	5.461775665	0
San Mateo (SF)	2045	LHD2	Aggregate	Aggregate	Electricity	3176.288334	87635.17535	0	87635.17535	42035.6051	0	56501.63863
San Mateo (SF)	2045	MCY	Aggregate	Aggregate	Gasoline	24094.30711	94643.50883	94643.50883	0	48188.6142	2.235372905	0
San Mateo (SF)	2045	MDV	Aggregate	Aggregate	Gasoline	156889.7854	3571071.767	3571071.767	0	724321.129	141.2585089	0
San Mateo (SF)	2045	MDV	Aggregate	Aggregate	Diesel	1704.599064	38538.37851	38538.37851	0	7850.09012	1.223931952	0
San Mateo (SF)	2045	MDV	Aggregate	Aggregate	Electricity	9891.1744	175311.0037	0	175311.0037	46408.5766	0	67684.51664
San Mateo (SF)	2045	MDV	Aggregate	Aggregate	Plug-in Hybrid	4678.466632	108412.5036	44214.59057	64197.91304	19345.4595	1.580717441	19389.68314
San Mateo (SF)	2045	MH	Aggregate	Aggregate	Gasoline	1413.70414	10360.77764	10360.77764	0	141.426962	2.34267516	0
San Mateo (SF)	2045	MH	Aggregate	Aggregate	Diesel	845.3667201	5603.696616	5603.696616	0	84.536672	0.600672662	0
San Mateo (SF)	2045	Motor Coach	Aggregate	Aggregate	Diesel	83.1480347	10559.74816	10559.74816	0	1910.74184	1.660796314	0
San Mateo (SF)	2045	OBUS	Aggregate	Aggregate	Gasoline	156.0235743	4890.338281	4890.338281	0	3121.71967	0.877658787	0
San Mateo (SF)	2045	OBUS	Aggregate	Aggregate	Electricity	109.1189369	5754.598667	0	5754.598667	2183.25169	0	6375.214826
San Mateo (SF)	2045	PTO	Aggregate	Aggregate	Diesel	0	3634.352249	3634.352249	0	0	0.634330593	0
San Mateo (SF)	2045	PTO	Aggregate	Aggregate	Electricity	0	3180.672569	0	3180.672569	0	0	6588.822922
San Mateo (SF)	2045	SBUS	Aggregate	Aggregate	Gasoline	95.72406159	3886.107611	3886.107611	0	382.896246	0.34880947	0
San Mateo (SF)	2045	SBUS	Aggregate	Aggregate	Diesel	106.7412803	2173.011216	2173.011216	0	1545.61374	0.243790116	0
San Mateo (SF)	2045	SBUS	Aggregate	Aggregate	Electricity	131.7955741	4335.348793	0	4335.348793	1212.13677	0	4567.097421
San Mateo (SF)	2045	SBUS	Aggregate	Aggregate	Natural Gas	6.700428774	135.7205961	135.7205961	0	97.0222086	0.022710022	0
San Mateo (SF)	2045	T6 CAIRP Class 4	Aggregate	Aggregate	Diesel	1.107064782	77.70120848	77.70120848	0	25.4403487	0.007827094	0
San Mateo (SF)	2045	T6 CAIRP Class 4	Aggregate	Aggregate	Electricity	1.439108172	108.1701657	0	108.1701657	33.0707058	0	117.5034687
San Mateo (SF)	2045	T6 CAIRP Class 5	Aggregate	Aggregate	Diesel	1.362110819	106.8021147	106.8021147	0	31.3013066	0.010754986	0
San Mateo (SF)	2045	T6 CAIRP Class 5	Aggregate	Aggregate	Electricity	1.762618302	148.1799865	0	148.1799865	40.5049686	0	160.9654779
San Mateo (SF)	2045	T6 CAIRP Class 6	Aggregate	Aggregate	Diesel	6.162065606	277.5288439	277.5288439	0	141.604268	0.02803683	0
San Mateo (SF)	2045	T6 CAIRP Class 6	Aggregate	Aggregate	Electricity	8.081871279	388.7466818	0	388.7466818	185.721402	0	422.2891154
San Mateo (SF)	2045	T6 CAIRP Class 7	Aggregate	Aggregate	Diesel	15.98300316	3181.470521	3181.470521	0	367.289413	0.281548313	0
San Mateo (SF)	2045	T6 CAIRP Class 7	Aggregate	Aggregate	Electricity	4.809575908	997.7463473	0	997.7463473	110.524054	0	1083.835418
San Mateo (SF)	2045	T6 Instate Delivery Class 4	Aggregate	Aggregate	Diesel	258.4947015	8460.912602	8460.912602	0	3688.71939	0.919301939	0
San Mateo (SF)	2045	T6 Instate Delivery Class 4	Aggregate	Aggregate	Electricity	255.3735396	9044.108866	0	9044.108866	3644.18041	0	9661.632289
San Mateo (SF)	2045	T6 Instate Delivery Class 4	Aggregate	Aggregate	Natural Gas	3.462944357	114.3509205	114.3509205	0	49.416216	0.016558392	0
San Mateo (SF)	2045	T6 Instate Delivery Class 5	Aggregate	Aggregate	Diesel	210.4040925	6890.732113	6890.732113	0	3002.4664	0.74998053	0
San Mateo (SF)	2045	T6 Instate Delivery Class 5	Aggregate	Aggregate	Electricity	208.3469776	7381.224706	0	7381.224706	2973.11137	0	7885.207931
San Mateo (SF)	2045	T6 Instate Delivery Class 5	Aggregate	Aggregate	Natural Gas	2.730470458	90.60927916	90.60927916	0	38.9638134	0.013096363	0
San Mateo (SF)	2045	T6 Instate Delivery Class 6	Aggregate	Aggregate	Diesel	436.4885181	14293.88254	14293.88254	0	6228.69115	1.554302064	0
San Mateo (SF)	2045	T6 Instate Delivery Class 6	Aggregate	Aggregate	Electricity	432.7553576	15322.01532	0	15322.01532	6175.41895	0	16368.18841
San Mateo (SF)	2045	T6 Instate Delivery Class 6	Aggregate	Aggregate	Natural Gas	5.727749349	189.763721	189.763721	0	81.7349832	0.027446994	0
San Mateo (SF)	2045	T6 Instate Delivery Class 7	Aggregate	Aggregate	Diesel	147.5426908	7442.124613	7442.124613	0	2105.4342	0.817452742	0
San Mateo (SF)	2045	T6 Instate Delivery Class 7	Aggregate	Aggregate	Electricity	79.72210704	4315.367428	0	4315.367428	1137.63447	0	4610.016741
San Mateo (SF)	2045	T6 Instate Delivery Class 7	Aggregate	Aggregate	Natural Gas	3.34541917	166.6756095	166.6756095	0	47.7391316	0.023839747	0
San Mateo (SF)	2045	T6 Instate Other Class 4	Aggregate	Aggregate	Diesel	293.4096178	11238.97095	11238.97095	0	3391.81518	1.178379739	0
San Mateo (SF)	2045	T6 Instate Other Class 4	Aggregate	Aggregate	Electricity	289.5698489	12753.5735	0	12753.5735	3347.42745	0	13519.82205
San Mateo (SF)	2045	T6 Instate Other Class 4	Aggregate	Aggregate	Natural Gas	3.922088279	153.8571176	153.8571176	0	45.3393405	0.019518373	0
San Mateo (SF)	2045	T6 Instate Other Class 5	Aggregate	Aggregate	Diesel	754.4339512	28910.07705	28910.07705	0	8721.25648	3.035397144	0
San Mateo (SF)	2045	T6 Instate Other Class 5	Aggregate	Aggregate	Electricity	744.5378552	32816.07028	0	32816.07028	8606.85761	0	34787.69544
San Mateo (SF)	2045	T6 Instate Other Class 5	Aggregate	Aggregate	Natural Gas	9.811091236	388.7795123	388.7795123	0	113.416215	0.049194305	0
San Mateo (SF)	2045	T6 Instate Other Class 6	Aggregate	Aggregate	Diesel	476.6235602	18259.07222	18259.07222	0	5509.76836	1.915799668	0
San Mateo (SF)	2045	T6 Instate Other Class 6	Aggregate	Aggregate	Electricity	470.2581655	20718.97198	0	20718.97198	5436.18439	0	21963.79033
San Mateo (SF)	2045	T6 Instate Other Class 6	Aggregate	Aggregate	Natural Gas	6.22522301	246.2286959	246.2286959	0	71.963578	0.031165569	0
San Mateo (SF)	2045	T6 Instate Other Class 7	Aggregate	Aggregate	Diesel	279.8510123	10797.97397	10797.97397	0	3235.0777	1.147975504	0
San Mateo (SF)	2045	T6 Instate Other Class 7	Aggregate	Aggregate	Electricity	141.0484702	7722.452927	0	7722.452927	1630.52032	0	8186.42629
San Mateo (SF)	2045	T6 Instate Other Class 7	Aggregate	Aggregate	Natural Gas	6.246351222	229.7019038	229.7019038	0	72.2078201	0.029726991	0
San Mateo (SF)	2045	T6 Instate Tractor Class 6	Aggregate	Aggregate	Diesel	7.546738773	348.9845649	348.9845649	0	87.2403002	0.03640662	0
San Mateo (SF)	2045	T6 Instate Tractor Class 6	Aggregate	Aggregate	Electricity	7.36422967	413.1953847	0	413.1953847	85.130495	0	438.0206124
San Mateo (SF)	2045	T6 Instate Tractor Class 6	Aggregate	Aggregate	Natural Gas	0.096371972	4.646288657	4.646288657	0	1.11406	0.000575318	0
San Mateo (SF)	2045	T6 Instate Tractor Class 7	Aggregate	Aggregate	Diesel	80.09688223	4392.935567	4392.935567	0	925.919959	0.420614267	0
San Mateo (SF)	2045	T6 Instate Tractor Class 7	Aggregate	Aggregate	Electricity	14.80288391	977.0409073	0	977.0409073	171.121338	0	1035.742587
San Mateo (SF)	2045	T6 Instate Tractor Class 7	Aggregate	Aggregate	Natural Gas	1.558923808	85.1504179	85.1504179	0	18.0211592	0.010354915	0

San Mateo (SF)	2045	T6 OOS Class 4	Aggregate	Aggregate	Diesel	1.448137015	103.9505518	103.9505518	0	33.2781886	0.009826262	0
San Mateo (SF)	2045	T6 OOS Class 5	Aggregate	Aggregate	Diesel	1.781937022	142.6014643	142.6014643	0	40.9489128	0.013480645	0
San Mateo (SF)	2045	T6 OOS Class 6	Aggregate	Aggregate	Diesel	8.058750551	372.6217061	372.6217061	0	185.190088	0.03528562	0
San Mateo (SF)	2045	T6 OOS Class 7	Aggregate	Aggregate	Diesel	9.900584051	2709.423155	2709.423155	0	227.515421	0.229196789	0
San Mateo (SF)	2045	T6 Public Class 4	Aggregate	Aggregate	Diesel	19.52345536	663.9233041	663.9233041	0	100.155326	0.076961591	0
San Mateo (SF)	2045	T6 Public Class 4	Aggregate	Aggregate	Electricity	14.99182115	593.0482548	0	593.0482548	76.9080425	0	700.3310146
San Mateo (SF)	2045	T6 Public Class 4	Aggregate	Aggregate	Natural Gas	1.395734417	47.48093238	47.48093238	0	7.16011756	0.007139035	0
San Mateo (SF)	2045	T6 Public Class 5	Aggregate	Aggregate	Diesel	67.26735203	2287.699914	2287.699914	0	345.081516	0.265597964	0
San Mateo (SF)	2045	T6 Public Class 5	Aggregate	Aggregate	Electricity	51.66253244	2040.540595	0	2040.540595	265.028791	0	2409.675525
San Mateo (SF)	2045	T6 Public Class 5	Aggregate	Aggregate	Natural Gas	5.521256511	183.75922	183.75922	0	28.3240459	0.027893106	0
San Mateo (SF)	2045	T6 Public Class 6	Aggregate	Aggregate	Diesel	39.52544327	1341.125002	1341.125002	0	202.765524	0.155152287	0
San Mateo (SF)	2045	T6 Public Class 6	Aggregate	Aggregate	Electricity	30.08588062	1184.191282	0	1184.191282	154.340568	0	1398.412145
San Mateo (SF)	2045	T6 Public Class 6	Aggregate	Aggregate	Natural Gas	2.856290326	96.77841841	96.77841841	0	14.6527694	0.014543142	0
San Mateo (SF)	2045	T6 Public Class 7	Aggregate	Aggregate	Diesel	96.97436282	4018.013682	4018.013682	0	497.478481	0.452923995	0
San Mateo (SF)	2045	T6 Public Class 7	Aggregate	Aggregate	Electricity	59.95005172	2899.241616	0	2899.241616	307.543765	0	3423.71604
San Mateo (SF)	2045	T6 Public Class 7	Aggregate	Aggregate	Natural Gas	7.480223702	306.7215458	306.7215458	0	38.3735476	0.045000393	0
San Mateo (SF)	2045	T6 Utility Class 5	Aggregate	Aggregate	Diesel	3.817160292	151.0488509	151.0488509	0	48.8596517	0.015659236	0
San Mateo (SF)	2045	T6 Utility Class 5	Aggregate	Aggregate	Electricity	5.226867042	215.2468453	0	215.2468453	66.9038981	0	241.0901108
San Mateo (SF)	2045	T6 Utility Class 5	Aggregate	Aggregate	Natural Gas	0.032462094	1.284557511	1.284557511	0	0.4155148	0.000164248	0
San Mateo (SF)	2045	T6 Utility Class 6	Aggregate	Aggregate	Diesel	0.721896198	28.5569782	28.5569782	0	9.24027134	0.00296069	0
San Mateo (SF)	2045	T6 Utility Class 6	Aggregate	Aggregate	Electricity	0.987468401	40.66539317	0	40.66539317	12.6395955	0	45.54781804
San Mateo (SF)	2045	T6 Utility Class 6	Aggregate	Aggregate	Natural Gas	0.006139187	0.242855743	0.242855743	0	0.0785816	3.10539E-05	0
San Mateo (SF)	2045	T6 Utility Class 7	Aggregate	Aggregate	Diesel	0.803201021	39.10854578	39.10854578	0	10.2809731	0.004031368	0
San Mateo (SF)	2045	T6 Utility Class 7	Aggregate	Aggregate	Electricity	1.100753337	57.208071	0	57.208071	14.0896427	0	64.07666581
San Mateo (SF)	2045	T6 Utility Class 7	Aggregate	Aggregate	Natural Gas	0.006830624	0.332588934	0.332588934	0	0.08743199	4.18293E-05	0
San Mateo (SF)	2045	T6TS	Aggregate	Aggregate	Gasoline	717.6896566	28076.75885	28076.75885	0	14359.5346	5.120602879	0
San Mateo (SF)	2045	T6TS	Aggregate	Aggregate	Electricity	622.2080137	32146.10298	0	32146.10298	12449.1379	0	37496.50086
San Mateo (SF)	2045	T7 CAIRP Class 8	Aggregate	Aggregate	Diesel	100.6441732	20863.16683	20863.16683	0	2312.8031	2.825789922	0
San Mateo (SF)	2045	T7 CAIRP Class 8	Aggregate	Aggregate	Electricity	27.81755751	5987.151099	0	5987.151099	639.247472	0	10932.09531
San Mateo (SF)	2045	T7 CAIRP Class 8	Aggregate	Aggregate	Natural Gas	0.184419292	38.22248517	38.22248517	0	4.23795534	0.006108563	0
San Mateo (SF)	2045	T7 NNOOS Class 8	Aggregate	Aggregate	Diesel	111.9165516	31925.01641	31925.01641	0	2571.84236	4.11241605	0
San Mateo (SF)	2045	T7 NOOS Class 8	Aggregate	Aggregate	Diesel	48.10846972	11600.49791	11600.49791	0	1105.53263	1.510876195	0
San Mateo (SF)	2045	T7 Other Port Class 8	Aggregate	Aggregate	Diesel	8.22566319	1987.571462	1987.571462	0	134.57185	0.273694486	0
San Mateo (SF)	2045	T7 Other Port Class 8	Aggregate	Aggregate	Electricity	1.893952606	502.4997648	0	502.4997648	30.9850646	0	914.5331086
San Mateo (SF)	2045	T7 POAK Class 8	Aggregate	Aggregate	Diesel	59.60331954	6917.380246	6917.380246	0	975.110308	0.969364719	0
San Mateo (SF)	2045	T7 POAK Class 8	Aggregate	Aggregate	Electricity	13.81986798	1585.523519	0	1585.523519	226.09304	0	2885.600858
San Mateo (SF)	2045	T7 POAK Class 8	Aggregate	Aggregate	Natural Gas	0.134544739	15.61485383	15.61485383	0	2.20115194	0.002560664	0
San Mateo (SF)	2045	T7 Public Class 8	Aggregate	Aggregate	Diesel	238.6562844	9494.881852	9494.881852	0	1224.30674	1.583104393	0
San Mateo (SF)	2045	T7 Public Class 8	Aggregate	Aggregate	Electricity	126.8078751	6036.078631	0	6036.078631	650.524399	0	11846.30266
San Mateo (SF)	2045	T7 Public Class 8	Aggregate	Aggregate	Natural Gas	1.860433161	74.46306751	74.46306751	0	9.54402212	0.015285056	0
San Mateo (SF)	2045	T7 Single Concrete/Transit M	Aggregate	Aggregate	Diesel	25.24786853	1653.395896	1653.395896	0	237.834922	0.24487097	0
San Mateo (SF)	2045	T7 Single Concrete/Transit M	Aggregate	Aggregate	Electricity	32.09855696	2292.304289	0	2292.304289	302.368407	0	4179.224132
San Mateo (SF)	2045	T7 Single Concrete/Transit M	Aggregate	Aggregate	Natural Gas	1.553634593	101.7309383	101.7309383	0	14.6352379	0.016320015	0
San Mateo (SF)	2045	T7 Single Dump Class 8	Aggregate	Aggregate	Diesel	129.1717914	6233.168372	6233.168372	0	1216.79827	0.965773716	0
San Mateo (SF)	2045	T7 Single Dump Class 8	Aggregate	Aggregate	Electricity	86.50576842	5553.112824	0	5553.112824	814.884338	0	10124.18082
San Mateo (SF)	2045	T7 Single Dump Class 8	Aggregate	Aggregate	Natural Gas	7.780535514	377.9948308	377.9948308	0	73.2926445	0.064216602	0
San Mateo (SF)	2045	T7 Single Other Class 8	Aggregate	Aggregate	Diesel	146.720538	9341.97414	9341.97414	0	1382.10747	1.437447458	0
San Mateo (SF)	2045	T7 Single Other Class 8	Aggregate	Aggregate	Electricity	93.80750776	8173.085711	0	8173.085711	883.666723	0	14900.79533
San Mateo (SF)	2045	T7 Single Other Class 8	Aggregate	Aggregate	Natural Gas	9.481515832	595.0601982	595.0601982	0	89.3158791	0.098592416	0
San Mateo (SF)	2045	T7 SWCV Class 8	Aggregate	Aggregate	Diesel	22.47137709	1457.418555	1457.418555	0	103.368335	0.58673597	0
San Mateo (SF)	2045	T7 SWCV Class 8	Aggregate	Aggregate	Electricity	101.1221797	6548.134381	0	6548.134381	465.162027	0	12183.13604
San Mateo (SF)	2045	T7 SWCV Class 8	Aggregate	Aggregate	Natural Gas	144.6834959	9378.68593	9378.68593	0	665.544081	1.71325287	0
San Mateo (SF)	2045	T7 Tractor Class 8	Aggregate	Aggregate	Diesel	299.1915566	19023.22943	19023.22943	0	4347.25332	2.593941903	0
San Mateo (SF)	2045	T7 Tractor Class 8	Aggregate	Aggregate	Electricity	55.94249212	3970.641522	0	3970.641522	812.84441	0	7229.385932
San Mateo (SF)	2045	T7 Tractor Class 8	Aggregate	Aggregate	Natural Gas	26.23072433	1656.706532	1656.706532	0	381.132425	0.280985336	0
San Mateo (SF)	2045	T7 Utility Class 8	Aggregate	Aggregate	Diesel	4.089904555	166.6815224	166.6815224	0	52.3507783	0.02600444	0
San Mateo (SF)	2045	T7 Utility Class 8	Aggregate	Aggregate	Electricity	2.592295859	123.564392	0	123.564392	33.181387	0	232.6468251
San Mateo (SF)	2045	T7IS	Aggregate	Aggregate	Gasoline	1.263756702	102.237959	102.237959	0	25.2852441	0.021854943	0
San Mateo (SF)	2045	T7IS	Aggregate	Aggregate	Electricity	0.827541227	103.1176931	0	103.1176931	16.5574449	0	207.1978741
San Mateo (SF)	2045	UBUS	Aggregate	Aggregate	Gasoline	61.32483934	4000.606693	4000.606693	0	245.299357	0.396322218	0
San Mateo (SF)	2045	UBUS	Aggregate	Aggregate	Electricity	394.3821564	31125.86098	0	31125.86098	1577.52863	0	54259.9741

We Can Model Regional Emissions, But Are the Results Meaningful for CEQA?

Authors: AEP Climate Change Committee (Michael Hendrix, Dave Mitchell, Haseeb Qureshi, Jennifer Reed, Brian Schuster, Nicole Vermilion, and Rich Walters)

On December 24, 2018, the California Supreme Court, *Sierra Club v. County of Fresno (Friant Ranch, L.P.] (2018) 6 Cal.5th 502, Case No. S219783 (Friant Ranch*), held that simply identifying that a project exceeds an emissions threshold is not sufficient to identify a project's significant effect on the environment relative to the health effects of project emissions. The Court found that an EIR should make a reasonable effort to substantively connect a project's criteria pollutant emissions to likely health consequences, or explain why it is not currently feasible to provide such an analysis. In 2019, there were several CEQA documents that included health effects modeling to provide additional analysis for projects with criteria air pollutant emissions that exceed a significance threshold. While it is technically possible to conduct this modeling, we argue that this additional layer of quantitative analysis may not always provide decision-makers and the public with additional meaningful information. It is the air districts that are best suited to provide frameworks for how to identify health effects of regional criteria pollutant emissions under CEQA.

Introduction

Significance thresholds for regional criteria pollutants used by California air districts and lead agencies represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable national or state ambient air quality standard (AAQS). By analyzing the project's emissions against these thresholds, the CEQA document assesses whether these emissions directly contribute to any regional or local exceedances of the applicable AAQS and exposure levels. The basis of the ruling in Friant Ranch was that the EIR did not provide a meaningful analysis of the adverse health effects that would be associated with the project's criteria pollutant emissions, which were identified as being far above the relevant thresholds. The discussion of the adverse health effects in the EIR was general in nature and did not connect the levels of the pollutants that would be emitted by the project to adverse health effects.

The process of correlating project-related criteria pollutant emissions to health-based consequences is called a health impact assessment (HIA). An HIA involves two steps: 1) running a regional photochemical grid model (PGM) to estimate the small increases in concentrations of ozone and particulate matter (PM) in the region as a result of a project's emissions of criteria and precursor pollutants; and 2) running the U.S. EPA Benefits Mapping and Analysis Program (BenMAP) to estimate the resulting health impacts from these increases in concentrations of ozone and PM.

Limitations of Regional-Scale Dispersion Models

It is technically feasible to conduct regional-scale criteria pollutant modeling for a development project. Particulate matter (PM) can be divided into two categories: directly emitted PM and secondary PM. Secondary PM, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur oxides (SO_x) and NO_x, Ozone (O_3) is a secondary pollutant formed from the oxidation of reactive organic gases (ROGs) and nitrogen oxides (NOx) in the presence of sunlight. Rates of ozone formation are a function of a variety of complex physical factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns.. Secondary formation of PM and ozone can occur far from the original emissions source from regional transport due to wind and topography (e.g. low-level jet stream). As such, modeling concentrations of secondary PM and ozone require photochemical grid models (PGMs), such as CMAQ and CAMx. These models have a much larger "grid" system and much lower resolution than localized dispersion modeling (e.g., AERMOD). For example, common grid cells in PGMs are 4x4 kilometers, while AERMOD can identify concentrations at the meter-level.

Photochemical modeling also depends on all emission sources in the entire domain. Low resolution and spatial averaging produces "noise" and model uncertainty that can exceed a project's specific emissions. Additionally, regional-scale models are highly contingent upon background concentrations. Factors such as meteorology and topography greatly affect the certainty levels of predicted concentrations at receptor points. As a result, there are statistical ranges of uncertainty through all the modeling steps. Due to these factors, it is difficult to predict ground-level secondary PM and ozone concentrations associated with relatively small emission sources with a high degree of certainty. While it is possible to use a regional-scale model to predict these regional concentrations, when a project's emissions are less than the regional model's resolution, the resultant ambient air quality concentrations will be within the margin of uncertainty. In CEQA terms, this would fit the definition of "speculative". Only when the scale of emissions would result in changes in ambient air quality beyond the model margin of uncertainty would the results not be "speculative" as defined by CEQA.

Identifying Health Effects due to Ambient Air Quality Changes

BenMap is a model developed by the USEPA to understand the health effects from changes in ozone and PM concentrations. If there is an acceptable level of confidence that the results provided by the regional dispersion modeling are valid, then these concentrations can be translated into health outcomes using BenMap. The health outcomes in BenMap are based on changes in ambient air concentrations and the population exposed to these changes. Data provided by this analysis may indicate increased number of workdays lost to illness, hospital admissions (respiratory), emergency room visits (asthma), or mortality, among other health effects. These are called "health incidences."

Translating the incremental increase in PM and ozone concentrations to specific health effects is also subject to uncertainty. For example, regional models assign the same toxicity to PM regardless of the source of PM (such as road dust as exhaust), and thus potentially overpredict adverse health effects of PM. BenMap also assumes that health effects can occur at any concentration, including small incremental concentrations, and assumes that impacts seen at large concentration differences can be linearly scaled down to small increases in concentration, with no consideration of potential thresholds below which health impacts may not occur. Additionally, BenMap is used for assessing impacts over large areas and populations and was not intended to be used for individual projects. For health incidences, the number of hospitalizations or increase in morbidity predicted by BenMap is greatly affected by the population characteristics.[1] Small increases in emissions in an area with a high population have a much greater affect than large increases in emissions over an area with a small population. As a result, the same amount of emissions generated in an urban area could result in greater health consequences than if the same emissions occurred on the urban periphery, where fewer people may be affected. This will also depend on other factors including meteorology and photochemistry, as discussed above. Emissions in areas with conditions that favor high air dispersion or unfavorable ozone formation will likely have relatively lower effects on ambient air quality and health outcomes.

While BenMap provides additional statistical information about health consequences requested by the Court in the Friant Ranch decision, this information is only meaningful when presented with the full health context of the region or locality at hand. For example, if the BenMap analysis says that the project would result in two additional hospital admissions, this result alone is not useful unless one identifies how many hospital admissions are caused by poor air quality now (without the project) and how many hospital admissions occur

[1] BenMap assigns prevalence rate for asthma and other health effects based on indicators such as gender, race, age, ethnicity, etc. The BenMap user manual specifically states that there are a wide range of variables that can be included in the health effect function. The health effect function was developed based on epidemiological studies, and specifically states that "there are a number of issues that arise when deriving and choosing between health effect functions that go well beyond this user manual. Hence, it is important to have a trained health researcher assist in developing the impact function data file."

overall (due to air quality and other causes). Because health is not solely influenced by ambient air quality, and has many factors that are highly variable across geographies and populations, there is an added level of uncertainty in using a generalized identification of health effects due to air quality conditions overlaid onto a specific diverse set of health conditions and other factors. Regardless of the uncertainty levels, if regional health effects are identified for a project, then the CEQA analysis needs to provide a full health baseline for decision-makers and the public to be able to understand the marginal change due to project criteria pollutant emissions. Given the margin of uncertainty at each step in the process (regional scale modeling, existing ambient air quality effects on health, population health conditions vulnerability, and marginal health effects of air pollution), the identification of marginal health effects due to individual projects using regional air quality modelling and tools such as BenMap are likely to be within the level of uncertainty and thus defined as "speculative" per CEQA.

The Role of Air Districts

Regional, community, multiscale air quality modeling conducted by the air districts for each individual air basin or locality within the air basin would be the most appropriate indictor of health effects for projects. The AQMPs provide a forecast of regional emissions based on regional dispersion modeling for all sources within the air basin. Regional-scale models attempt to account for all emissions sources within an air basin.

The regional scale model requires inputs such as existing and future regional sources of pollutants and global meteorological data, which are generally not accessible by CEQA practitioners. Modeling of future years should consider future concentrations of air pollutants based on regional growth projections and existing programs, rules, and regulations adopted by Federal, State, and local air districts. In general, air pollution in California is decreasing as a result of Federal and State laws. Based on the air quality management plans (AQMPs) required for air districts in a nonattainment area, air quality in the air basins are anticipated to improve despite an increase in population and employment growth. Air districts are charged with assessing programs, rules, and regulations so that the increase in population and employment does not conflict with the mandate to achieve the AAQS. Because emissions forecasting and health outcomes based on the regional growth projections to achieve the AAQS is under the purview of the air districts, it should also fall on the air districts to identify the potential health outcomes associated with individual project's criteria pollutant emissions.

The South Coast Air Quality Management District (South Coast AQMD) and the Sacramento Metropolitan Air Quality Management District (Sacramento Metropolitan AQMD) are exploring concepts for project-level analysis in light of Friant Ranch to assist local lead agencies.

» South Coast AQMD is looking at the largest land use development project they have had in the air basin and doing a sensitivity analysis (using CAMx for photochemical grid modeling and BenMap for health outcomes) to see how locating a very large project in different parts of the air basin (Los Angeles, Inland Empire, v. Orange County) would affect the health incidence.

» Sacramento Metropolitan AQMD is also looking at a screening process. Rather than looking at the upper end (i.e., largest project in the air basin), Sacramento Metropolitan AQMD is starting at the smallest project that exceeds the regional significance threshold and running CAMx and BenMap at different locations in the air basin to see how it affects regional health incidences.

Guidance from Air Districts would be the most effective way to incorporate meaningful information concerning regional health effects of project criteria pollutants in CEQA analyses, including guidance as to when modelling is and is not useful and meaningful, how modelling should be conducted, and how to best present additional information to inform decision-makers and the public about a project's impacts.

So…until air districts do their part, what should we do?

PROJECTS WITH CRITERIA POLLUTANT EMISSIONS BELOW AIR DISTRICT THRESHOLDS

The Friant Ranch ruling was about providing disclosure of health effects of project emissions that were well over the significance thresholds. Since the air district thresholds are tied to a level the air districts find to not have a significant effect on ambient air quality, there should be no need to discuss the health effects of criteria pollutant emissions that are less than the significance thresholds.

PROJECTS WITH CRITERIA POLLUTANT EMISSIONS ABOVE AIR DISTRICT THRESHOLDS

Pursuant to Section 15125 of the CEQA Guidelines, the environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. For CEQA, the health effects associated with buildout of a project would occur at the project's horizon year. Because CEQA requires an analysis of the change from existing conditions, the change in effects would be associated with changes in ambient air quality and associated health outcomes between existing conditions and the project's horizon year. Therefore, in order to show how a project affects health outcomes in an air basin, the CEQA documents will need to qualitatively or quantitatively address: (1) existing ambient criteria pollutant concentrations, health incidences due to existing air quality, and health incidences overall; 2) future (without project) ambient criteria pollutant concentrations and health incidences, and 3) future (with project) ambient criteria pollutant concentrations and health incidences.

Projects with significant criteria pollutant emissions could use regional modelling and BenMap to identify health effects of project emissions, but it is likely that many (or most) projects that are not regionally substantial in scale will be shown to have minimal regional changes in PM and ozone concentrations and therefore minimal changes in associated health effects. In addition, many projects may have emissions that are less than the uncertainty level of regional air quality models and BenMap health effects modeling; in these cases, quantitative results will not be meaningful. Thus, absent better direction from air districts, CEQA lead agencies will have to determine on a case by case basis whether a qualitative discussion of health effects will suffice, or whether regional modeling, despite its limitations, should be conducted for the project.

Where a project has substantial criteria pollutant emissions when considered on a regional scale, and there is reason to believe that the modeling of ambient air quality and regional health effects would produce non-speculative results when considering modeling uncertainties, then CEQA lead agencies should use regional modelling.

Conclusion

The purpose of CEQA is to inform the public as to the potential for a project to result in one or more significant adverse effects on the environment (including health effects). A CEQA document must provide an understandable and clear environmental analysis and provide an adequate basis for decision making and public disclosure. Regional dispersion modeling of criteria pollutants and secondary pollutants like PM and ozone can provide additional information, but that information may be within the margin of modelling uncertainty and/or may not be meaningful for the public and decision-makers unless a full health context is presented in the CEQA document. Simply providing health outcomes based on use of a regional-scale model and BenMap may not satisfy the goal to provide decision-makers and the public with information that would assist in weighting the environmental consequences of a project. A CEQA document must provide an analysis that is understandable for decision making and public disclosure. Regional scale modeling may provide a technical method for this type of analysis, but it does not necessarily provide a meaningful way to connect the magnitude of a project's criteria pollutant emissions to health effects without speculation.

In order to accurately connect the dots, we urge California air districts to provide more guidance on how to identify and describe the health effects of exceeding regional criteria pollutant thresholds. The air districts are the primary agency responsible for ensuring that the air basins attain the AAQS and ensure the health and welfare of its residents relative to air quality. Because emissions forecasting and health outcomes are based on the regional growth projections to achieve the AAQS is under the purview of the air districts, it should fall on the air districts to identify the potential health outcomes associated with exceeding the CEQA thresholds for projects. The air districts should provide lead agencies with a consistent, reliable, and meaningful analytical approach to correlate specific health effects that may result from a project's criteria pollutant emissions.

Glossary

AAQS – Ambient Air Quality Standards

BenMap – Benefits Mapping and Analysis Program

CAMx – Comprehensive Air Quality Model with extensions

CMAQ – Community Multiscale Air Quality

NOx – Nitrogen Oxides

PM – Particulate Matter

SOx – Sulfur Oxides

State – California

USEPA – United States Environmental Protection Agency

S219783

IN THE SUPREME COURT OF C ALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,

Plaintiffs and Appellants,

v.

COUNTY OF FRESNO,

Defendant and Respondent,

and,

FRIANT RANCH, L.P.,

Real Party in Interest and Respondent.

After a Published Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726
Honorable Rosendo A. Pena, Jr.

APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*

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TO THE HONORABLE CHIEF JUSTICE AND JUSTICES OF THE SUPREME COURT:

APPLICATION FOR LEAVE TO FILE *AMICUS CURIAE* BRIEF

Pursuant to Rule 8.520(f) of the California Rules of Court, the South Coast Air Quality Management District (SCAQMD) respectfully requests leave to file the attached *amicus curiae* brief. Because SCAQMD's position differs from that of either party, we request leave to submit this amicus brief in support of neither party.

HOW THIS BRIEF WILL ASSIST THE COURT

SCAQMD's proposed amicus brief takes a position on two of the issues in this case. In both instances, its position differs from that of either party. The issues are:

1) Does the California Environmental Quality Act (CEQA) require an environmental impact report (EIR) to correlate a project's air pollution emissions with specific levels of health impacts?
2) What is the proper standard of review for determining whether an EIR provides sufficient information on the health impacts caused by a project's emission of air pollutants?

This brief will assist the Court by discussing the practical realities of correlating identified air quality impacts with specific health outcomes. In short, CEQA requires agencies to provide detailed information about a project's air quality impacts that is sufficient for the public and decisionmakers to adequately evaluate the project and meaningfully understand its impacts. However, the level of analysis is governed by a rule of reason; CEQA only requires agencies to conduct analysis if it is reasonably feasible to do so.

With regard to health-related air quality impacts, an analysis that correlates a project's air pollution emissions with specific levels of health impacts will be feasible in some cases but not others. Whether it is feasible depends on a variety of factors, including the nature of the project and the nature of the analysis under consideration. The feasibility of analysis may also change over time as air districts and others develop new tools for measuring projects' air quality related health impacts. Because SCAQMD has among the most sophisticated air quality modeling and health impact evaluation capability of any of the air districts in the State, it is uniquely situated to express an opinion on the extent to which the Court should hold that CEQA requires lead agencies to correlate air quality impacts with specific health outcomes.

SCAQMD can also offer a unique perspective on the question of the appropriate standard of review. SCAQMD submits that the proper standard of review for determining whether an EIR is sufficient as an informational document is more nuanced than argued by either party. In our view, this is a mixed question of fact and law. It includes determining whether additional analysis is feasible, which is primarily a factual question that should be reviewed under the substantial evidence standard. However, it also involves determining whether the omission of a particular analysis renders an EIR insufficient to serve CEQA's purpose as a meaningful, informational document. If a lead agency has not determined that a requested analysis is infeasible, it is the court's role to determine whether the EIR nevertheless meets CEQA's purposes, and courts should not defer to the lead agency's conclusions regarding the legal sufficiency of an EIR's analysis. The ultimate question of whether an EIR's analysis is "sufficient" to serve CEQA's informational purposes is predominately a question of law that courts should review de novo.

This brief will explain the rationale for these arguments and may assist the Court in reaching a conclusion that accords proper respect to a lead agency's factual conclusions while maintaining judicial authority over the ultimate question of what level of analysis CEQA requires.

STATEMENT OF INTEREST OF *AMICUS CURIAE*

The SCAQMD is the regional agency primarily responsible for air pollution control in the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of the Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410; Cal. Code Regs., tit. 17, § 60104.) The SCAQMD participates in the CEQA process in several ways. Sometimes it acts as a lead agency that prepares CEQA documents for projects. Other times it acts as a responsible agency when it has permit authority over some part of a project that is undergoing CEQA review by a different lead agency. Finally, SCAQMD also acts as a commenting agency for CEQA documents that it receives because it is a public agency with jurisdiction by law over natural resources affected by the project.

In all of these capacities, SCAQMD will be affected by the decision in this case. SCAQMD sometimes submits comments requesting that a lead agency perform an additional type of air quality or health impacts analysis. On the other hand, SCAQMD sometimes determines that a particular type of health impact analysis is not feasible or would not produce reliable and informative results. Thus, SCAQMD will be affected by the Court's resolution of the extent to which CEQA requires EIRs to correlate emissions and health impacts, and its resolution of the proper standard of review.

CERTIFICATION REGARDING AUTHORSHIP AND FUNDING

No party or counsel in the pending case authored the proposed amicus curiae brief in whole or in part, or made any monetary contribution intended to fund the preparation or submission of the brief. No person or entity other than the proposed *Amicus Curiae* made any monetary contribution intended to fund the preparation or submission of the brief.

Respectfully submitted,

DATED: April 3, 2015

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BRIEF OF AMICUS CURIAE

SUMMARY OF ARGUMENT

The South Coast Air Quality Management District (SCAQMD) submits that this Court should not try to establish a hard-and-fast rule concerning whether lead agencies are required to correlate emissions of air pollutants with specific health consequences in their environmental impact reports (EIR). The level of detail required in EIRs is governed by a few, core CEQA (California Environmental Quality Act) principles. As this Court has stated, "[a]n EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Assn. v. Regents of the Univ of Cal.* (1988) 47 Cal.3d 376, 405 ["*Laurel Heights I*"]) Accordingly, "an agency must use its best efforts to find out and disclose all that it reasonably can." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (quoting CEQA Guidelines § 15144)[1].). However, "[a]nalysis of environmental effects need not be exhaustive, but will be judged in light of what is reasonably feasible." (*Association of Irritated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1390; CEQA Guidelines §§ 15151, 15204(a).)

With regard to analysis of air quality related health impacts, EIRs must generally quantify a project's pollutant emissions, but in some cases it is not feasible to correlate these emissions to specific, quantifiable health impacts (e.g., premature mortality; hospital admissions). In such cases, a general description of the adverse health impacts resulting from the pollutants at issue may be sufficient. In other cases, due to the magnitude

[1] The CEQA Guidelines are found at Cal. Code Regs., tit. 14 §§ 15000, *et seq.*

or nature of the pollution emissions, as well as the specificity of the project involved, it may be feasible to quantify health impacts. Or there may be a less exacting, but still meaningful analysis of health impacts that can feasibly be performed. In these instances, agencies should disclose those impacts.

SCAQMD also submits that whether or not an EIR complies with CEQA's informational mandates by providing sufficient, feasible analysis is a mixed question of fact and law. Pertinent here, the question of whether an EIR's discussion of health impacts from air pollution is sufficient to allow the public to understand and consider meaningfully the issues involves two inquiries: (1) Is it feasible to provide the information or analysis that a commenter is requesting or a petitioner is arguing should be required?; and (2) Even if it is feasible, is the agency relying on other policy or legal considerations to justify not preparing the requested analysis? The first question of whether an analysis is feasible is primarily a question of fact that should be judged by the substantial evidence standard. The second inquiry involves evaluating CEQA's information disclosure purposes against the asserted reasons to not perform the requested analysis. For example, an agency might believe that its EIR meets CEQA's informational disclosure standards even without a particular analysis, and therefore choose not to conduct that analysis. SCAQMD submits that this is more of a legal question, which should be reviewed de novo as a question of law.

ARGUMENT

I. RELEVANT FACTUAL AND LEGAL FRAMEWORK.

A. Air Quality Regulatory Background

The South Coast Air Quality Management District (SCAQMD) is one of the local and regional air pollution control districts and air quality

management districts in California. The SCAQMD is the regional air pollution agency for the South Coast Air Basin, which consists of all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. (Health & Saf. Code § 40410, 17 Cal. Code Reg. § 60104.) The SCAQMD also includes the Coachella Valley in Riverside County (Palm Springs area to the Salton Sea). (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "chapter 7" hyperlink; pp 7-1, 7-3 (last visited Apr. 1, 2015).) The SCAQMD's jurisdiction includes over 16 million residents and has the worst or nearly the worst air pollution levels in the country for ozone and fine particulate matter. (SCAQMD, *Final 2012 AQMP (Feb. 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Executive Summary" hyperlink p. ES-1 (last visited Apr. 1, 2015).)

Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. (Health & Saf. Code § 40000.) The California Air Resources Board (CARB), part of the California Environmental Protection Agency, is primarily responsible for controlling pollution from motor vehicles. (*Id.*) The air districts must adopt rules to achieve and maintain the state and federal ambient air quality standards within their jurisdictions. (Health & Saf. Code § 40001.)

The federal Clean Air Act (CAA) requires the United States Environmental Protection Agency (EPA) to identify pollutants that are widely distributed and pose a threat to human health, developing a so-called "criteria" document. (42 U.S.C. § 7408; CAA § 108.) These pollutants are frequently called "criteria pollutants." EPA must then establish "national ambient air quality standards" at levels "requisite to protect public health",

allowing "an adequate margin of safety." (42 U.S.C. § 7409; CAA § 109.) EPA has set standards for six identified pollutants: ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter (PM), and lead. (U.S. EPA, National Ambient Air Quality Standards (NAAQS), http://www.epa.gov/air/criteria.html (last updated Oct. 21, 2014).)[2]

Under the Clean Air Act, EPA sets emission standards for motor vehicles and "nonroad engines" (mobile farm and construction equipment, marine vessels, locomotives, aircraft, etc.). (42 U.S.C. §§ 7521, 7547; CAA §§ 202, 213.) California is the only state allowed to establish emission standards for motor vehicles and most nonroad sources; however, it may only do so with EPA's approval. (42 U.S.C. §§ 7543(b), 7543(e); CAA §§ 209(b), 209(c).) Sources such as manufacturing facilities, power plants and refineries that are not mobile are often referred to as "stationary sources." The Clean Air Act charges state and local agencies with the primary responsibility to attain the national ambient air quality standards. (42 U.S.C. § 7401(a)(3); CAA § 101(a)(3).) Each state must adopt and implement a plan including enforceable measures to achieve and maintain the national ambient air quality standards. (42 U.S.C. § 7410; CAA § 110.) The SCAQMD and CARB jointly prepare portion of the plan for the South Coast Air Basin and submit it for approval by EPA. (Health & Saf. Code §§ 40460, et seq.)

The Clean Air Act also requires state and local agencies to adopt a permit program requiring, among other things, that new or modified "major" stationary sources use technology to achieve the "lowest achievable emission rate," and to control minor stationary sources as

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[2] Particulate matter (PM) is further divided into two categories: fine particulate or $PM_{2.5}$ (particles with a diameter of less than or equal to 2.5 microns) and coarse particulate (PM_{10}) (particles with a diameter of 10 microns or less). (U.S. EPA, Particulate Matter (PM), http://www.epa.gov/airquality/particlepollution/ (last visited Apr. 1, 2015).)

needed to help attain the standards. (42 U.S.C. §§ 7502(c)(5), 7503(a)(2), 7410(a)(2)(C); CAA §§ 172(c)(5), 173(a)(2), 110(a)(2)(C).) The air districts implement these permit programs in California. (Health & Saf. Code §§ 42300, et seq.)

The Clean Air Act also sets out a regulatory structure for over 100 so-called "hazardous air pollutants" calling for EPA to establish "maximum achievable control technology" (MACT) for sources of these pollutants. (42 U.S.C. § 7412(d)(2); CAA § 112(d)(2).) California refers to these pollutants as "toxic air contaminants" (TACs) which are subject to two state-required programs. The first program requires "air toxics control measures" for specific categories of sources. (Health & Saf. Code § 39666.) The other program requires larger stationary sources and sources identified by air districts to prepare "health risk assessments" for impacts of toxic air contaminants. (Health & Saf. Code §§ 44320(b), 44322, 44360.) If the health risk exceeds levels identified by the district as "significant," the facility must implement a "risk reduction plan" to bring its risk levels below "significant" levels. Air districts may adopt additional more stringent requirements than those required by state law, including requirements for toxic air contaminants. (Health & Saf. Code § 41508; *Western Oil & Gas Assn. v. Monterey Bay Unified APCD* (1989) 49 Cal.3d 408, 414.) For example, SCAQMD has adopted a rule requiring new or modified sources to keep their risks below specified levels and use best available control technology (BACT) for toxics. (SCAQMD, *Rule 1401-New Source Review of Toxic Air Contaminants*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiv; then follow "Rule 1401" hyperlink (last visited Apr. 1, 2015).)

B. The SCAQMD's Role Under CEQA

The California Environmental Quality Act (CEQA) requires public agencies to perform an environmental review and appropriate analysis for projects that they implement or approve. (Pub. Resources Code § 21080(a).) The agency with primary approval authority for a particular project is generally the "lead agency" that prepares the appropriate CEQA document. (CEQA Guidelines §§ 15050, 15051.) Other agencies having a subsequent approval authority over all or part of a project are called "responsible" agencies that must determine whether the CEQA document is adequate for their use. (CEQA Guidelines §§ 15096(c), 15381.) Lead agencies must also consult with and circulate their environmental impact reports to "trustee agencies" and agencies "with jurisdiction by law" including "authority over resources which may be affected by the project." (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines §§ 15086(a)(3), 15073(c).) The SCAQMD has a role in all these aspects of CEQA.

Fulfilling its responsibilities to implement its air quality plan and adopt rules to attain the national ambient air quality standards, SCAQMD adopts a dozen or more rules each year to require pollution reductions from a wide variety of sources. The SCAQMD staff evaluates each rule for any adverse environmental impact and prepares the appropriate CEQA document. Although most rules reduce air emissions, they may have secondary environmental impacts such as use of water or energy or disposal of waste—e.g., spent catalyst from control equipment.[3]

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[3] The SCAQMD's CEQA program for its rules is a "Certified Regulatory Program" under which it prepares a "functionally equivalent" document in lieu of a negative declaration or EIR. (Pub. Resources Code § 21080.5, CEQA Guidelines § 15251(l).)

The SCAQMD also approves a large number of permits every year to construct new, modified, or replacement facilities that emit regulated air pollutants. The majority of these air pollutant sources have already been included in an earlier CEQA evaluation for a larger project, are currently being evaluated by a local government as lead agency, or qualify for an exemption. However, the SCAQMD sometimes acts as lead agency for major projects where the local government does not have a discretionary approval. In such cases, SCAQMD prepares and certifies a negative declaration or environmental impact report (EIR) as appropriate.[4] SCAQMD evaluates perhaps a dozen such permit projects under CEQA each year. SCAQMD is often also a "responsible agency" for many projects since it must issue a permit for part of the projects (e.g., a boiler used to provide heat in a commercial building). For permit projects evaluated by another lead agency under CEQA, SCAQMD has the right to determine that the CEQA document is inadequate for its purposes as a responsible agency, but it may not do so because its permit program already requires all permitted sources to use the best available air pollution control technology. (SCAQMD, *Rule 1303(a)(1) – Requirements*, http://www.aqmd.gov/home/regulations/rules/scaqmd-rule-book/regulation-xiii; then follow "Rule 1303" hyperlink (last visited Apr. 1, 2015).)

Finally, SCAQMD receives as many as 60 or more CEQA documents each month (around 500 per year) in its role as commenting agency or an agency with "jurisdiction by law" over air quality—a natural resource affected by the project. (Pub. Resources Code §§ 21104(a), 21153; CEQA Guidelines § 15366(a)(3).) The SCAQMD staff provides comments on as many as 25 or 30 such documents each month.

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[4] The SCAQMD's permit projects are not included in its Certified Regulatory Program, and are evaluated under the traditional local government CEQA analysis. (Pub. Resources Code §§ 21150-21154.)

(SCAQMD Governing Board Agenda, Apr. 3, 2015, Agenda Item 16, Attachment A, http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-april-3-2015; then follow "16. Lead Agency Projects and Environmental Documents Received by SCAQMD" hyperlink (last visited Apr. 1, 2015).) Of course, SCAQMD focuses its commenting efforts on the more significant projects.

Typically, SCAQMD comments on the adequacy of air quality analysis, appropriateness of assumptions and methodology, and completeness of the recommended air quality mitigation measures. Staff may comment on the need to prepare a health risk assessment detailing the projected cancer and noncancer risks from toxic air contaminants resulting from the project, particularly the impacts of diesel particulate matter, which CARB has identified as a toxic air contaminant based on its carcinogenic effects. (California Air Resources Board, Resolution 98-35, Aug. 27, 1998, http://www.arb.ca.gov/regact/diesltac/diesltac.htm; then follow Resolution 98-35 hyperlink (last visited Apr. 1, 2015).) Because SCAQMD already requires new or modified stationary sources of toxic air contaminants to use the best available control technology for toxics and to keep their risks below specified levels, (SCAQMD Rule 1401, supra, note 15), the greatest opportunity to further mitigate toxic impacts through the CEQA process is by reducing emissions—particularly diesel emissions—from vehicles.

II. THIS COURT SHOULD NOT SET A HARD-AND-FAST RULE CONCERNING THE EXTENT TO WHICH AN EIR MUST CORRELATE A PROJECT'S EMISSION OF POLLUTANTS WITH RESULTING HEALTH IMPACTS.

Numerous cases hold that courts do not review the correctness of an EIR's conclusions but rather its sufficiency as an informative document. (*Laurel Heights 1, supra*, 47 Cal.3d at p. 392; *Citizens of Goleta Valley v.*

Bd. of Supervisors (1990) 52 Cal.3d 553, 569; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1197.)

As stated by the Court of Appeal in this case, where an EIR has addressed a topic, but the petitioner claims that the information provided about that topic is insufficient, courts must "draw[] a line that divides *sufficient* discussions from those that are *insufficient*." (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) The Court of Appeal readily admitted that "[t]he terms themselves – sufficient and insufficient – provide little, if any, guidance as to where the line should be drawn. They are simply labels applied once the court has completed its analysis." (*Id.*)

The CEQA Guidelines, however, provide guidance regarding what constitutes a sufficient discussion of impacts. Section 15151 states that "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." Case law reflects this: "Analysis of environmental effects need not be exhaustive, but will be judged in light of what was reasonably feasible." (*Association of Irritated Residents v. County of Madera, supra,* 107 Cal.App.4th at p. 1390; see also CEQA Guidelines § 15204(a).)

Applying this test, this Court cannot realistically establish a hard-and-fast rule that an analysis correlating air pollution impacts of a project to quantified resulting health impacts is always required, or indeed that it is never required. Simply put, in some cases such an analysis will be "feasible"; in some cases it will not.

For example, air pollution control districts often require a proposed new source of toxic air contaminants to prepare a "health risk assessment" before issuing a permit to construct. District rules often limit the allowable cancer risk the new source may cause to the "maximally exposed individual" (worker and residence exposures). (*See, e.g.*, SCAQMD Rule 1401(c)(8); 1401(d)(1), *supra* note 15.) In order to perform this analysis, it

is necessary to have data regarding the sources and types of air toxic contaminants, location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors (worker and residence). (SCAQMD, *Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB2588), pp. 11-16*; (last visited Apr. 1, 2015) http://www.aqmd.gov/home/library/documents-support-material; "Guidelines" hyperlink; AB2588; then follow AB2588 Risk Assessment Guidelines hyperlink.)

Thus, it is feasible to determine the health risk posed by a new gas station locating at an intersection in a mixed use area, where receptor locations are known. On the other hand, it may not be feasible to perform a health risk assessment for airborne toxics that will be emitted by a generic industrial building that was built on "speculation" (i.e., without knowing the future tenant(s)). Even where a health risk assessment can be prepared, however, the resulting maximum health risk value is only a calculation of risk—it does not necessarily mean anyone will contract cancer as a result of the project.

In order to find the "cancer burden" or expected additional cases of cancer resulting from the project, it is also necessary to know the numbers and location of individuals living within the "zone of impact" of the project: i.e., those living in areas where the projected cancer risk from the project exceeds one in a million. (SCAQMD, Health Risk Assessment Summary form, http://www.aqmd.gov/home/forms ; filter by "AB2588" category; then "Health Risk Assessment" hyperlink (last visited Apr. 1, 2015).) The affected population is divided into bands of those exposed to at least 1 in a million risk, those exposed to at least 10 in a million risk, etc. up to those exposed at the highest levels. (*Id.*) This data allows agencies to calculate an approximate number of additional cancer cases expected from

the project. However, it is not possible to predict which particular individuals will be affected.

For the so-called criteria pollutants[5], such as ozone, it may be more difficult to quantify health impacts. Ozone is formed in the atmosphere from the chemical reaction of the nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. (U.S. EPA, Ground Level Ozone, http://www.epa.gov/airquality/ozonepollution/ (last updated Mar. 25, 2015).) It takes time and the influence of meteorological conditions for these reactions to occur, so ozone may be formed at a distance downwind from the sources. (U.S. EPA, *Guideline on Ozone Monitoring Site Selection* (Aug. 1998) EPA-454/R-98-002 § 5.1.2, http://www.epa.gov/ttnamti1/archive/cpreldoc.html (last visited Apr. 1, 2015).) NO_x and VOC are known as "precursors" of ozone.

Scientifically, health effects from ozone are correlated with increases in the ambient level of ozone in the air a person breathes. (U.S. EPA, *Health Effects of Ozone in the General Population,* Figure 9, http://www.epa.gov/apti/ozonehealth/population.html#levels (last visited Apr. 1, 2015).) However, it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels over an entire region. For example, the SCAQMD's 2012 AQMP showed that reducing NO_x by 432 tons per day (157,680 tons/year) and reducing VOC by 187 tons per day (68,255 tons/year) would reduce ozone levels at the SCAQMD's monitor site with the highest levels by only 9 parts per billion. (South Coast Air Quality Management District, *Final 2012 AQMP (February 2013)*, http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan; then follow "Appendix V: Modeling & Attainment Demonstrations" hyperlink,

[5] See discussion of types of pollutants, supra, Part I.A.

pp. v-4-2, v-7-4, v-7-24.) SCAQMD staff does not currently know of a way to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects.

On the other hand, this type of analysis may be feasible for projects on a regional scale with very high emissions of NO_x and VOCs, where impacts are regional. For example, in 2011 the SCAQMD performed a health impact analysis in its CEQA document for proposed Rule 1315, which authorized various newly-permitted sources to use offsets from the districts "internal bank" of emission reductions. This CEQA analysis accounted for essentially *all* the increases in emissions due to new or modified sources in the District between 2010 and 2030.[6] The SCAQMD was able to correlate this very large emissions increase (e.g., 6,620 pounds per day NO_x (1,208 tons per year), 89,180 pounds per day VOC (16,275 tons per year)) to expected health outcomes from ozone and particulate matter (e.g., 20 premature deaths per year and 89,947 school absences in the year 2030 due to ozone).[7] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System* (see hyperlink in fn 6*)* at p. 4.1-35, Table 4.1-29.)

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[6] (SCAQMD Governing Board Agenda, February 4, 2011, Agenda Item 26, Attachment G, *Assessment for: Re-adoption of Proposed Rule 1315 – Federal New Source Review Tracking System, Vol. 1, p.4.0-6,* http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=governing-board-meeting-agenda-february-4-2011; the follow "26. Adopt Proposed Rule 1315 – Federal New Source Review Tracking System" (last visited April 1, 2015).)

[7] The SCAQMD was able to establish the location of future NO_x and VOC emissions by assuming that new projects would be built in the same locations and proportions as existing stationary sources. This CEQA document was upheld by the Los Angeles County Superior Court in *Natural Res. Def. Council v SCAQMD*, Los Angeles Superior Court No. BS110792).

However, a project emitting only 10 tons per year of NO_x or VOC is small enough that its regional impact on ambient ozone levels may not be detected in the regional air quality models that are currently used to determine ozone levels. Thus, in this case it would not be feasible to directly correlate project emissions of VOC or NO_x with specific health impacts from ozone. This is in part because ozone formation is not linearly related to emissions. Ozone impacts vary depending on the location of the emissions, the location of other precursor emissions, meteorology and seasonal impacts, and because ozone is formed some time later and downwind from the actual emission. (EPA Guideline on Ozone Monitoring Site Selection (Aug. 1998) EPA-454/R-98-002, § 5.1.2; https://www.epa.gov/ttnamti1/archive/cpreldoc.html; then search "Guideline on Ozone Monitoring Site Selection" click on pdf) (last viewed Apr. 1, 2015).)

SCAQMD has set its CEQA "significance" threshold for NO_x and VOC at 10 tons per year (expressed as 55 lb/day). (SCAQMD, *Air Quality Analysis Handbook*, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook; then follow "SCAQMD Air Quality Significance Thresholds" hyperlink (last visited Apr. 1, 2015).) This is because the federal Clean Air Act defines a "major" stationary source for "extreme" ozone nonattainment areas such as SCAQMD as one emitting 10 tons/year. (42 U.S.C. §§ 7511a(e), 7511a(f); CAA §§ 182(e), 182(f).) Under the Clean Air Act, such sources are subject to enhanced control requirements (42 U.S.C. §§ 7502(c)(5), 7503; CAA §§ 172(c)(5), 173), so SCAQMD decided this was an appropriate threshold for making a CEQA "significance" finding and requiring feasible mitigation. Essentially, SCAQMD takes the position that a source that emits 10 tons/year of NO_x or VOC would contribute cumulatively to ozone formation. Therefore, lead agencies that use SCAQMD's thresholds of significance may determine

that many projects have "significant" air quality impacts and must apply all feasible mitigation measures, yet will not be able to precisely correlate the project to quantifiable health impacts, unless the emissions are sufficiently high to use a regional modeling program.

In the case of particulate matter ($PM_{2.5}$)[8], another "criteria" pollutant, SCAQMD staff is aware of two possible methods of analysis. SCAQMD used regional modeling to predict expected health impacts from its proposed Rule 1315, as mentioned above. Also, the California Air Resources Board (CARB) has developed a methodology that can predict expected mortality (premature deaths) from large amounts of $PM_{2.5}$. (California Air Resources Board, *Health Impacts Analysis: PM Premature Death Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort_arch.htm (last reviewed Jan. 19, 2012).) SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1837 lbs/day). (Final Environmental Assessment for Rule 1315, *supra*, pp 4.0-12, 4.1-13, 4.1-37 (e.g., 125 premature deaths in the entire SCAQMD in 2030), 4.1-39 (0.05 to 1.77 annual premature deaths from power plants.) Again, this project involved large amounts of additional $PM_{2.5}$ in the District, up to 2.82 tons/day (5,650 lbs/day of $PM_{2.5}$, or, or 1029 tons/year. (*Id.* at table 4.1-4, p. 4.1-10.)

However, the primary author of the CARB methodology has reported that this $PM_{2.5}$ health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties. [9] (SCAQMD, *Final Subsequent Mitigated Negative Declaration for: Warren*

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[8] SCAQMD has not attained the latest annual or 24-hour national ambient air quality standards for "$PM_{2.5}$" or particulate matter less than 2.5 microns in diameter.

[9] Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts. (*Id.* at p. 2-24.)

E&P, Inc. WTU Central Facility, New Equipment Project (certified July 19, 2011), http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2011; then follow "Final Subsequent Mitigated Negative Declaration for Warren E&P Inc. WTU Central Facility, New Equipment Project" hyperlink, pp. 2-22, 2-23 (last visited Apr. 1, 2015).) Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small $PM_{2.5}$ increases (3.8 lb/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated $PM_{2.5}$ emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so. (*Id.* at pp 2-22 to 2-24.) SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information. (*Id.* at pp. 2-23, 2-25.) This CEQA document was not challenged in court.

In the above case, while it may have been technically possible to plug the data into the methodology, the results would not have been reliable or meaningful. SCAQMD believes that an agency should not be required to perform analyses that do not produce reliable or meaningful results. This Court has already held that an agency may decline to use even the "normal" "existing conditions" CEQA baseline where to do so would be misleading or without informational value. (*Neighbors for Smart Rail v. Exposition Metro Line* (2013) 57 Cal.4th 439, 448, 457.) The same should be true for a decision that a particular study or analysis would not provide reliable or meaningful results.[10]

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[10] Whether a particular study would result in "informational value" is a part of deciding whether it is "feasible." CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and

Therefore, it is not possible to set a hard-and-fast rule on whether a correlation of air quality impacts with specific quantifiable health impacts is required in all cases. Instead, the result turns on whether such an analysis is reasonably feasible in the particular case.[11] Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths. (California Air Resources Board, *Health Impacts Analysis: PM Mortality Relationship*, http://www.arb.ca.gov/research/health/pm-mort/pm-mort.htm (last reviewed Dec. 29, 2010).) This factor also counsels against setting any hard-and-fast rule in this case.

III. THE QUESTION OF WHETHER AN EIR CONTAINS SUFFICIENT ANALYSIS TO MEET CEQA'S REQUIREMENTS IS A MIXED QUESTION OF FACT AND LAW GOVERNED BY TWO DIFFERENT STANDARDS OF REVIEW.

A. Standard of Review for Feasibility Determination and Sufficiency as an Informative Document

A second issue in this case is whether courts should review an EIR's informational sufficiency under the "substantial evidence" test as argued by Friant Ranch or the "independent judgment" test as argued by Sierra Club.

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technological factors." (Pub. Resources Code § 21061.1.) A study cannot be "accomplished in a *successful* manner" if it produces unreliable or misleading results.

[11] In this case, the lead agency did not have an opportunity to determine whether the requested analysis was feasible because the comment was non-specific. Therefore, SCAQMD suggests that this Court, after resolving the legal issues in the case, direct the Court of Appeal to remand the case to the lead agency for a determination of whether the requested analysis is feasible. Because Fresno County, the lead agency, did not seek review in this Court, it seems likely that the County has concluded that at least some level of correlation of air pollution with health impacts is feasible.

As this Court has explained, "a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 435.) For questions regarding compliance with proper procedure or other legal questions, courts review an agency's action de novo under the "independent judgment" test. (*Id.*) On the other hand, courts review factual disputes only for substantial evidence, thereby "accord[ing] greater deference to the agency's substantive factual conclusions." (*Id.*)

Here, Friant Ranch and Sierra Club agree that the case involves the question of whether an EIR includes sufficient information regarding a project's impacts. However, they disagree on the proper standard of review for answering this question: Sierra Club contends that courts use the independent judgment standard to determine whether an EIR's analysis is sufficient to meet CEQA's informational purposes,[12] while Friant Ranch contends that the substantial evidence standard applies to this question.

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[12] Sierra Club acknowledges that courts use the substantial evidence standard when reviewing predicate factual issues, but argues that courts ultimately decide as a matter of law what CEQA requires. (Answering Brief, pp. 14, 23.)

SCAQMD submits that the issue is more nuanced than either party contends. We submit that, whether a CEQA document includes sufficient analysis to satisfy CEQA's informational mandates is a mixed question of fact and law,[13] containing two levels of inquiry that should be judged by different standards.[14]

The state CEQA Guidelines set forth standards for the adequacy of environmental analysis. Guidelines Section 15151 states:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection, but for adequacy, completeness, and a good-faith effort at full disclosure.

In this case, the basic question is whether the underlying analysis of air quality impacts made the EIR "sufficient" as an informative document. However, whether the EIR's analysis was sufficient is judged in light of what was reasonably feasible. This represents a mixed question of fact and law that is governed by two different standards of review.

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[13] Friant Ranch actually states that the claim that an EIR lacks sufficient relevant information is, "most properly thought of as raising mixed questions of fact and law." (Opening Brief, p. 27.) However, the remainder of its argument claims that the court should apply the substantial evidence standard of review to all aspects of the issue.

[14] Mixed questions of fact and law issues may implicate predominantly factual subordinate questions that are reviewed under the substantial evidence test even though the ultimate question may be reviewed by the independent judgment test. *Crocker National Bank v. City and County of San Francisco* (1989) 49 Cal.3d 881, 888-889.

SCAQMD submits that an EIR's sufficiency as an informational document is ultimately a legal question that courts should determine using their independent judgment. This Court's language in *Laurel Heights I* supports this position. As this Court explained: "The court does not pass upon the correctness of the EIR's environmental conclusions, but only upon its *sufficiency as an informative document.*" (*Laurel Heights I, supra,* 47 Cal.3d at 392-393) (emphasis added.) As described above, the Court in *Vineyard Area Citizens v. City of Rancho Cordova, supra,* 40 Cal.4th at 431, also used its independent judgment to determine what level of analysis CEQA requires for water supply impacts. The Court did not defer to the lead agency's opinion regarding the law's requirements; rather, it determined for itself what level of analysis was necessary to meet "[t]he law's informational demands." (*Id.* at p. 432.) Further, existing case law also holds that where an agency fails to comply with CEQA's information disclosure requirements, the agency has "failed to proceed in the manner required by law." (*Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 118.)

However, whether an EIR satisfies CEQA's requirements depends in part on whether it was reasonably feasible for an agency to conduct additional or more thorough analysis. EIRs must contain "a detailed statement" of a project's impacts (Pub. Res. Code § 21061), and an agency must "use its best efforts to find out and disclose all that it reasonably can." (CEQA Guidelines § 15144.) Nevertheless, "the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." (CEQA Guidelines § 15151.)

SCAQMD submits that the question of whether additional analysis or a particular study suggested by a commenter is "feasible" is generally a question of fact. Courts have already held that whether a particular alternative is "feasible" is reviewed by the substantial evidence test.

(*Uphold Our Heritage v. Town of Woodside* (2007) 147 Cal.App.4th 587, 598-99; *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, 883.) Thus, if a lead agency determines that a particular study or analysis is infeasible, that decision should generally be judged by the substantial evidence standard. However, SCAQMD urges this Court to hold that lead agencies must explain the basis of any determination that a particular analysis is infeasible in the EIR itself. An EIR must discuss information, including issues related to the feasibility of particular analyses "in sufficient detail to enable meaningful participation and criticism by the public. '[W]hatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.'" (*Laurel Heights I, supra*, 47 Cal.3d at p. 405 (quoting *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 831) (discussing analysis of alternatives).) The evidence on which the determination is based should also be summarized in the EIR itself, with appropriate citations to reference materials if necessary. Otherwise commenting agencies such as SCAQMD would be forced to guess where the lead agency's evidence might be located, thus thwarting effective public participation.

Moreover, if a lead agency determines that a particular study or analysis would not result in reliable or useful information and for that reason is not feasible, that determination should be judged by the substantial evidence test. (See *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, *supra*, 57 Cal.4th 439, 448, 457:

whether "existing conditions" baseline would be misleading or uninformative judged by substantial evidence standard.[15])

If the lead agency's determination that a particular analysis or study is not feasible is supported by substantial evidence, then the agency has not violated CEQA's information disclosure provisions, since it would be infeasible to provide additional information. This Court's decisions provide precedent for such a result. For example, this Court determined that the issue of whether the EIR should have included a more detailed discussion of future herbicide use was resolved because substantial evidence supported the agency's finding that "the precise parameters of future herbicide use could not be predicted." *Ebbetts Pass Forest Watch v. California Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 955.

Of course, SCAQMD expects that courts will continue to hold lead agencies to their obligations to consult with, and not to ignore or misrepresent, the views of sister agencies having special expertise in the area of air quality. (*Berkeley Keep Jets Over the Bay v. Board of Port Commissioners* (2007) 91 Cal.App.4th 1344, 1364 n.11.) In some cases, information provided by such expert agencies may establish that the purported evidence relied on by the lead agency is not in fact "substantial". (*Id.* at pp. 1369-1371.)

In sum, courts retain ultimate responsibility to determine what CEQA requires. However, the law does not require exhaustive analysis, but only what is reasonably feasible. Agencies deserve deference for their factual determinations regarding what type of analysis is reasonably feasible. On the other hand, if a commenter requests more information, and the lead agency declines to provide it but does *not* determine that the

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[15] The substantial evidence standard recognizes that the courts "have neither the resources nor the scientific expertise" to weigh conflicting evidence on technical issues. (*Laurel Heights I, supra,* 47 Cal.3d 376, 393.)

requested study or analysis would be infeasible, misleading or uninformative, the question becomes whether the omission of that analysis renders the EIR inadequate to satisfy CEQA's informational purposes. (*Id.* at pp. 1370-71.) Again, this is predominantly a question of law and should be judged by the de novo or independent judgment standard of review. Of course, this Court has recognized that a "project opponent or reviewing court can always imagine some additional study or analysis that might provide helpful information. It is not for them to design the EIR. That further study...might be helpful does not make it necessary." (*Laurel Heights I, supra,* 47 Cal.3d 376, 415 – see also CEQA Guidelines § 15204(a) [CEQA "does not require a lead agency to conduct every test. . . recommended or demanded by commenters."].) Courts, then, must adjudicate whether an omission of particular information renders an EIR inadequate to serve CEQA's informational purposes.[16]

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[16] We recognize that there is case law stating that the substantial evidence standard applies to "challenges to the scope of an EIR's analysis of a topic" as well as the methodology used and the accuracy of the data relied on in the document "because these types of challenges involve factual questions." (*Bakersfield Citizens for Local Control v. City of Bakersfield, supra,* 124 Cal.App.4th 1184, 1198, and cases relied on therein.) However, we interpret this language to refer to situations where the question of the scope of the analysis really is factual—that is, where it involves whether further analysis is feasible, as discussed above. This interpretation is supported by the fact that the *Bakersfield* court expressly rejected an argument that a claimed "omission of information from the EIR should be treated as inquiries whether there is substantial evidence supporting the decision approving the project. " *Bakersfield, supra,* 124 Cal.App.4th at p. 1208. And the *Bakersfield* court ultimately decided that the lead agency must analyze the connection between the identified air pollution impacts and resulting health impacts, even though the EIR already included some discussion of air-pollution-related respiratory illnesses. *Bakersfield, supra,* 124 Cal.App.4th at p. 1220. Therefore, the court must not have interpreted this question as one of the "scope of the analysis" to be judged by the substantial evidence standard.

B. Friant Ranch's Rationale for Rejecting the Independent Judgment Standard of Review is Unsupported by Case Law.

In its brief, Friant Ranch makes a distinction between cases where a required CEQA topic is not discussed at all (to be reviewed by independent judgment as a failure to proceed in the manner required by law) and cases where a topic is discussed, but the commenter claims the information provided is insufficient (to be judged by the substantial evidence test). (Opening Brief, pp. 13-17.) The Court of Appeal recognized these two types of cases, but concluded that both raised questions of law. (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 (superseded by grant of review) 172 Cal.Rptr.3d 271, 290.) We believe the distinction drawn by Friant Ranch is unduly narrow, and inconsistent with cases which have concluded that CEQA documents are insufficient. In many instances, CEQA's requirements are stated broadly, and the courts must interpret the law to determine what level of analysis satisfies CEQA's mandate for providing meaningful information, even though the EIR discusses the issue to some extent.

For example, the CEQA Guidelines require discussion of the existing environmental baseline. In *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 954-955, the lead agency had discussed the environmental baseline by describing historic month-end water levels in the affected lakes. However, the court held that this was not an adequate baseline discussion because it failed to discuss the timing and amounts of past actual water releases, to allow comparison with the proposed project. The court evidently applied the independent judgment test to its decision, even though the agency discussed the issue to some extent.

Likewise, in *Vineyard Area Citizens* (2007) 40 Cal.4th 412, this Court addressed the question of whether an EIR's analysis of water supply impacts complied with CEQA. The parties agreed that the EIR was required to analyze the effects of providing water to the development project, "and that in order to do so the EIR had, in some manner, to identify the planned sources of that water." (*Vineyard Area Citizens, supra,* at p. 428.) However, the parties disagreed as to the level of detail required for this analysis and "what level of uncertainty regarding the availability of water supplies can be tolerated in an EIR . . . ." (*Id.*) In other words, the EIR had analyzed water supply impacts for the project, but the petitioner claimed that the analysis was insufficient.

This Court noted that neither CEQA's statutory language or the CEQA Guidelines specifically addressed the question of how precisely an EIR must discuss water supply impacts. (*Id.*) However, it explained that CEQA "states that '[w]hile foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can.'" (*Id.*, [Guidelines § 15144].) The Court used this general principle, along with prior precedent, to elucidate four "principles for analytical adequacy" that are necessary in order to satisfy "CEQA's informational purposes." (*Vineyard Area Citizens, supra,* at p. 430.) The Court did not defer to the agency's determination that the EIR's analysis of water supply impacts was sufficient. Rather, this Court used its independent judgment to determine for itself the level of analysis required to satisfy CEQA's fundamental purposes. (*Vineyard Area Citizens, supra*, at p. 441: an EIR does not serve its purposes where it neglects to explain likely sources of water and "... leaves long term water supply considerations to later stages of the project.")

Similarly, the CEQA Guidelines require an analysis of noise impacts of the project. (Appendix G, "Environmental Checklist Form."[17]) In *Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1123, the court held that the lead agency's noise impact analysis was inadequate even though it had addressed the issue and concluded that the increase would not be noticeable. If the court had been using the substantial evidence standard, it likely would have upheld this discussion.

Therefore, we do not agree that the issue can be resolved on the basis suggested by Friant Ranch, which would apply the substantial evidence standard to *every* challenge to an analysis that addresses a required CEQA topic. This interpretation would subvert the courts' proper role in interpreting CEQA and determining what the law requires.

Nor do we agree that the Court of Appeal in this case violated CEQA's prohibition on courts interpreting its provisions "in a manner which imposes procedural or substantive requirements beyond those explicitly stated in this division or in the state guidelines." (Pub. Resources Code § 21083.1.) CEQA requires an EIR to describe *all* significant impacts of the project on the environment. (Pub. Resources Code § 21100(b)(2); *Vineyard Area Citizens, supra,* at p. 428.) Human beings are part of the environment, so CEQA requires EIRs to discuss a project's significant impacts on human health. However, except in certain particular circumstances,[18] neither the CEQA statute nor Guidelines specify the precise level of analysis that agencies must undertake to satisfy the law's requirements. (see, e.g., CEQA Guidelines § 15126.2(a) [EIRs must describe "health and safety problems caused by {a project's} physical changes"].) Accordingly, courts must interpret CEQA as a whole to

[17] Association of Environmental Professionals, 2015 CEQA Statute and Guidelines (2015) p.287.

[18] E.g., Pub. Resources Code § 21151.8(C)(3)(B)(iii) (requiring specific type of health risk analysis for siting schools).

determine whether a particular EIR is sufficient as an informational document. A court determining whether an EIR's discussion of human health impacts is legally sufficient does not constitute imposing a new substantive requirement.[19] Under Friant Ranch's theory, the above-referenced cases holding a CEQA analysis inadequate would have violated the law. This is not a reasonable interpretation.

IV. COURTS MUST SCRUPULOUSLY ENFORCE THE REQUIREMENTS THAT LEAD AGENCIES CONSULT WITH AND OBTAIN COMMENTS FROM AIR DISTRICTS

Courts must "scrupulously enforce" CEQA's legislatively mandated requirements. (*Vineyard Area Citizens, supra*, 40 Cal.4th 412, 435.) Case law has firmly established that lead agencies must consult with the relevant air pollution control district before conducting an initial study, and must provide the districts with notice of the intention to adopt a negative declaration (or EIR). (*Schenck v. County of Sonoma* (2011) 198 Cal.App.4th 949, 958.) As *Schenck* held, neither publishing the notice nor providing it to the State Clearinghouse was a sufficient substitute for sending notice directly to the air district. (*Id.*) Rather, courts "must be satisfied that [administrative] agencies have fully complied with the procedural requirements of CEQA, since only in this way can the important public purposes of CEQA be protected from subversion." *Schenck,* 198 Cal.App.4th at p. 959 (citations omitted).[20]

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[19] We submit that Public Resources Code Section 21083.1 was intended to prevent courts from, for example, holding that an agency must analyze economic impacts of a project where there are no resulting environmental impacts (see CEQA Guidelines § 15131) , or imposing new procedural requirements, such as imposing additional public notice requirements not set forth in CEQA or the Guidelines.

[20] Lead agencies must consult air districts, as public agencies with jurisdiction by law over resources affected by the project, *before* releasing an EIR. (Pub. Resources Code §§ 21104(a); 21153.) Moreover, air

Lead agencies should be aware, therefore, that failure to properly seek and consider input from the relevant air district constitutes legal error which may jeopardize their project approvals. For example, the court in *Fall River Wild Trout Foundation v. County of Shasta,* (1999) 70 Cal.App.4th 482, 492 held that the failure to give notice to a trustee agency (Department of Fish and Game) was prejudicial error requiring reversal. The court explained that the lack of notice prevented the Department from providing any response to the CEQA document. (*Id.* at p. 492.) It therefore prevented relevant information from being presented to the lead agency, which was prejudicial error because it precluded informed decision-making. (*Id.*)[21]

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districts should be considered "state agencies" for purposes of the requirement to consult with "trustee agencies" as set forth in Public Resources Code § 20180.3(a). This Court has long ago held that the districts are not mere "local agencies" whose regulations are superseded by those of a state agency regarding matters of statewide concern, but rather have concurrent jurisdiction over such issues. (*Orange County Air Pollution Control District v. Public Util. Com.* (1971) 4 Cal.3d 945, 951, 954.) Since air pollution is a matter of statewide concern, *Id* at 952, air districts should be entitled to trustee agency status in order to ensure that this vital concern is adequately protected during the CEQA process.

[21] In *Schenck,* the court concluded that failure to give notice to the air district was not prejudicial, but this was partly because the trial court had already corrected the error before the case arrived at the Court of Appeal. The trial court issued a writ of mandate requiring the lead agency to give notice to the air district. The air district responded by concurring with the lead agency that air impacts were not significant. (*Schenck,* 198 Cal.App.4th 949, 960.) We disagree with the *Schenck* court that the failure to give notice to the air district would not have been prejudicial (even in the absence of the trial court writ) merely because the lead agency purported to follow the air district's published CEQA guidelines for significance. (*Id.*, 198 Cal.App.4th at p. 960.) In the first place, absent notice to the air district, it is uncertain whether the lead agency properly followed those guidelines. Moreover, it is not realistic to expect that an air district's published guidelines would necessarily fully address all possible air-quality related issues that can arise with a CEQA project, or that those

Similarly, lead agencies must obtain additional information requested by expert agencies, including those with jurisdiction by law, if that information is necessary to determine a project's impacts. (*Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236-37.) Approving a project without obtaining that information constitutes a failure to proceed in the manner prescribed by CEQA. (*Id.* at p. 1236.)

Moreover, a lead agency can save significant time and money by consulting with the air district early in the process. For example, the lead agency can learn what the air district recommends as an appropriate analysis on the facts of its case, including what kinds of health impacts analysis may be available, and what models are appropriate for use. This saves the lead agency from the need to do its analysis all over again and possibly needing to recirculate the document after errors are corrected, if new significant impacts are identified. (CEQA Guidelines § 15088.5(a).) At the same time, the air district's expert input can help the lead agency properly determine whether another commenter's request for additional analysis or studies is reasonable or feasible. Finally, the air district can provide input on what mitigation measures would be feasible and effective.

Therefore, we suggest that this Court provide guidance to lead agencies reminding them of the importance of consulting with the relevant air districts regarding these issues. Otherwise, their feasibility decisions may be vulnerable to air district evidence that establishes that there is no substantial evidence to support the lead agency decision not to provide specific analysis. (*See Berkeley Keep Jets Over the Bay, supra,* 91 Cal.App.4th 1344, 1369-1371.)

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guidelines would necessarily be continually modified to reflect new developments. Therefore we believe that, had the trial court not already ordered the lead agency to obtain the air district's views, the failure to give notice would have been prejudicial, as in *Fall River, supra,* 70 Cal.App.4th 482, 492.

CONCLUSION

The SCAQMD respectfully requests this Court *not* to establish a hard-and-fast rule concerning whether CEQA requires a lead agency to correlate identified air quality impacts of a project with resulting health outcomes. Moreover, the question of whether an EIR is "sufficient as an informational document" is a mixed question of fact and law containing two levels of inquiry. Whether a particular proposed analysis is feasible is predominantly a question of fact to be judged by the substantial evidence standard of review. Where the requested analysis is feasible, but the lead agency relies on legal or policy reasons not to provide it, the question of whether the EIR is nevertheless sufficient as an informational document is predominantly a question of law to be judged by the independent judgment standard of review.

Respectfully submitted,

DATED: April 3, 2015

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.520(c)(1) of the California Rules of Court, I hereby certify that this brief contains 8,476 words, including footnotes, but excluding the Application, Table of Contents, Table of Authorities, Certificate of Service, this Certificate of Word Count, and signature blocks. I have relied on the word count of the Microsoft Word Vista program used to prepare this Certificate.

DATED: April 3, 2015 Respectfully submitted,

Barbara Baird

Barbara Baird

PROOF OF SERVICE

I am employed in the County of Los Angeles, California. I am over the age of 18 years and not a party to the within action. My business address is 21865 Copley Drive, Diamond Bar, California 91765.

On April 3, 2015 I served true copies of the following document(s) described as **APPLICATION OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT FOR LEAVE TO FILE BRIEF OF *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY AND *[PROPOSED]* BRIEF OF *AMICUS CURIAE*** by placing a true copy of the foregoing document(s) in a sealed envelope addressed as set forth on the attached service list as follows:

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing following our ordinary business practices. I am readily familiar with this District's practice for collection and processing of correspondence for mailing. Under that practice, the correspondence would be deposited with the United States Postal Service, with postage thereon fully prepaid at Diamond Bar, California, in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on April 3, 2015 at Diamond Bar, California.

Patricia Anderson

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CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent cfforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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[2] *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

[3] Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

[4] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

[5] See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

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[6] CEQA does not require speculation. *See, e.g., Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

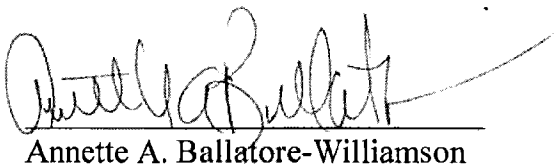
Rule 8.520 Disclosure

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

CONCLUSION

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015



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SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CASE NO. S219783

IN THE SUPREME COURT OF CALIFORNIA

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
LEAGUE OF WOMEN VOTERS OF FRESNO,
Plaintiffs and Appellants

v.

COUNTY OF FRESNO,
Defendant and Respondent

FRIANT RANCH, L.P.,
Real Party in Interest and Respondent

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

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[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf (visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041l.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015

Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY
UNIFIED
AIR POLLUTION CONTROL
DISTRICT

CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel (SBN 192176)

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO

On all parties to this action at the following addresses and in the following manner:

PLEASE SEE ATTACHED SERVICE LIST

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

SERVICE LIST

Sierra Club et al, v. County of Fresno, et al
Supreme Court of California Case No.: S219783
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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APPENDIX C:
NOISE DATA

Traffic Noise Calculator: FHWA 77-108 — **City of San Carlos General Plan Update EIR (COSC-11.0) Existing 2023 Traffic Noise**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour				Segment														
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	From - To		ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	65.4	69.1	69	44	140	442	El Camino Real	the North	Holly St	18,510	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
2	65.5	69.2	70	45	144	454	El Camino Real	Holly St	San Carlos Ave	19,025	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
3	65.7	69.4	70	48	152	480	El Camino Real	San Carlos Ave	Brittan Ave	19,815	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	5	Hard	50	0	56
4	65.4	69.1	69	44	139	440	El Camino Real	Brittan Ave	Howard Ave	18,170	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	5	Hard	50	0	56
5	65.4	69.1	70	45	142	448	El Camino Real	Howard Ave	the South	18,465	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	5	Hard	50	0	56
6	61.7	65.4	66	19	59	188	Old Country Road	the North	Holly St	11,095	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
7	59.0	62.7	63	10	32	102	Old Country Road	Holly St	Brittan Ave	6,045	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
8	62.8	66.5	67	25	78	245	Old Country Road	Brittan Ave	Howard Ave	10,480	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
9	60.9	64.6	65	16	50	158	Old Country Road	Howard Ave	the South	6,745	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
10	62.9	66.6	67	25	79	251	Industrial Road	the North	Holly St	10,500	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
11	62.5	66.2	67	23	73	229	Industrial Road	Holly St	Brittan Ave	9,615	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
12	63.0	66.8	67	26	82	259	Industrial Road	Brittan Ave	the South	10,855	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
13	58.1	61.8	62	8	26	83	Club Drive	San Carlos Ave	the South	10,530	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
14	59.5	63.2	64	11	36	115	Alameda de Las Pulgas	San Carlos Ave	Brittan Ave	9,465	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
15	59.8	63.5	64	12	38	121	Alameda de Las Pulgas	Brittan Ave	the South	9,980	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
16	60.3	64.1	64	14	44	139	Holly Street	the West	El Camino Real	17,705	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
17	56.5	60.2	61	6	18	57	Holly Street	El Camino Real	Old Country Rd	7,170	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
18	62.1	65.8	66	21	66	209	Holly Street	Old Country Rd	Industrial Rd	17,310	25	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
19	55.2	59.0	59	4	14	43	San Carlos Avenue	Club Dr	Alameda de Las Pulgas	3,535	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
20	59.5	63.2	64	11	36	113	San Carlos Avenue	Alameda de Las Pulgas	El Camino Real	14,130	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
21	59.0	62.7	63	10	32	101	Brittan Avenue	the West	Alameda de Las Pulgas	8,310	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
22	58.3	62.0	62	9	28	87	Brittan Avenue	Alameda de Las Pulgas	El Camino Real	7,165	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
23	59.2	62.9	63	11	34	107	Brittan Avenue	Old Country Rd	Industrial Rd	6,205	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
24	58.6	62.3	63	9	29	92	Howard Avenue	the West	El Camino Real	9,350	25	0.0%	97.5%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Hard	50	0	20
25	58.2	61.9	62	8	27	84	Howard Avenue	Old Country Rd	the East	4,870	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44

Traffic Noise Calculator: FHWA 77-108 — **City of San Carlos General Plan Update EIR (COSC-11.0) 2045 No Project Traffic Noise**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour				Segment From - To														
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway			ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	64.9	68.6	69.0	40	125	396	El Camino Real	the North	Holly St	19,815	35	0.0%	97.3%	2.1%	0.6%	75.0%	10.0%	15.0%	4	Hard	50	0	44
2	65.1	68.8	69.1	41	130	411	El Camino Real	Holly St	San Carlos Ave	20,545	35	0.0%	97.3%	2.1%	0.6%	75.0%	10.0%	15.0%	4	Hard	50	0	44
3	65.7	69.4	69.8	48	152	480	El Camino Real	San Carlos Ave	Brittan Ave	23,615	35	0.0%	97.3%	2.1%	0.6%	75.0%	10.0%	15.0%	5	Hard	50	0	56
4	64.9	68.6	68.9	39	124	392	El Camino Real	Brittan Ave	Howard Ave	19,315	35	0.0%	97.3%	2.1%	0.6%	75.0%	10.0%	15.0%	5	Hard	50	0	56
5	65.1	68.8	69.2	42	132	419	El Camino Real	Howard Ave	the South	20,625	35	0.0%	97.3%	2.1%	0.6%	75.0%	10.0%	15.0%	5	Hard	50	0	56
6	63.8	67.5	67.9	31	97	306	Old Country Road	the North	Holly St	18,075	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
7	61.4	65.1	65.5	18	56	176	Old Country Road	Holly St	Brittan Ave	10,390	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
8	64.9	68.6	69.0	40	126	398	Old Country Road	Brittan Ave	Howard Ave	17,000	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
9	63.4	67.1	67.5	28	88	278	Old Country Road	Howard Ave	the South	11,895	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
10	65.3	69.0	69.4	43	137	434	Industrial Road	the North	Holly St	18,195	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
11	66.3	70.0	70.4	55	174	549	Industrial Road	Holly St	Brittan Ave	23,030	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
12	65.1	68.8	69.2	41	130	413	Industrial Road	Brittan Ave	the South	17,295	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
13	59.2	63.0	63.3	11	34	108	Club Drive	San Carlos Ave	the South	13,745	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
14	60.7	64.4	64.8	15	48	152	Alameda de Las Pulgas	San Carlos Ave	Brittan Ave	12,490	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
15	61.0	64.8	65.1	16	52	163	Alameda de Las Pulgas	Brittan Ave	the South	13,445	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
16	61.2	64.9	65.3	17	53	169	Holly Street	the West	El Camino Real	21,490	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
17	58.1	61.9	62.2	8	26	84	Holly Street	El Camino Real	Old Country Rd	10,460	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
18	63.0	66.7	67.1	25	81	255	Holly Street	Old Country Rd	Industrial Rd	21,100	25	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
19	57.0	60.7	61.1	6	20	64	San Carlos Avenue	Club dr	Alameda de Las Pulgas	5,270	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
20	59.9	63.6	64.0	12	39	125	San Carlos Avenue	Alameda de Las Pulgas	El Camino Real	15,575	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
21	59.6	63.3	63.7	12	37	118	Brittan Avenue	the West	Alameda de Las Pulgas	9,685	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
22	59.6	63.3	63.7	12	37	117	Brittan Avenue	Alameda de Las Pulgas	El Camino Real	9,670	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
23	60.2	63.9	64.3	13	42	134	Brittan Avenue	Old Country Rd	Industrial Rd	7,785	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
24	58.8	62.5	62.9	10	31	98	Howard Avenue	the West	El Camino Real	9,935	25	0.0%	97.5%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Hard	50	0	20
25	58.7	62.4	62.8	9	30	95	Howard Avenue	Old Country Rd	the East	5,490	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44

Traffic Noise Calculator: FHWA 77-108 — **City of San Carlos General Plan Update EIR (COSC-11.0) 2045 With Project Traffic Noise**

	Output						Inputs														Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																		
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From	Segment To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	65.7	69.4	69.8	48	150	475	El Camino Real	the North	Holly St	19,920	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
2	65.9	69.6	70.0	50	158	499	El Camino Real	Holly St	San Carlos Ave	20,905	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
3	66.7	70.4	70.8	60	189	597	El Camino Real	San Carlos Ave	Brittan Ave	24,620	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	5	Hard	50	0	56
4	65.7	69.4	69.8	47	150	474	El Camino Real	Brittan Ave	Howard Ave	19,540	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	5	Hard	50	0	56
5	66.0	69.7	70.1	51	160	506	El Camino Real	Howard Ave	the South	20,865	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	5	Hard	50	0	56
6	63.8	67.5	67.9	31	98	309	Old Country Road	the North	Holly St	18,260	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
7	61.3	65.0	65.4	17	55	174	Old Country Road	Holly St	Brittan Ave	10,300	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
8	65.1	68.8	69.2	41	130	412	Old Country Road	Brittan Ave	Howard Ave	17,605	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
9	63.3	67.0	67.4	27	86	273	Old Country Road	Howard Ave	the South	11,690	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
10	65.8	69.5	69.9	48	153	483	Industrial Road	the North	Holly St	20,250	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
11	66.3	70.0	70.4	54	172	542	Industrial Road	Holly St	Brittan Ave	22,735	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
12	65.2	69.0	69.3	43	136	429	Industrial Road	Brittan Ave	the South	18,000	35	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
13	59.7	63.4	63.7	12	37	119	Club Drive	San Carlos Ave	the South	15,105	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
14	60.9	64.7	65.0	16	50	159	Alameda de Las Pulgas	San Carlos Ave	Brittan Ave	13,130	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
15	61.3	65.0	65.4	17	55	174	Alameda de Las Pulgas	Brittan Ave	the South	14,320	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
16	61.5	65.2	65.6	18	57	180	Holly Street	the West	El Camino Real	22,955	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
17	58.2	61.9	62.3	9	27	85	Holly Street	El Camino Real	Old Country Rd	10,680	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
18	63.3	67.0	67.4	28	87	276	Holly Street	Old Country Rd	Industrial Rd	22,820	25	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
19	56.6	60.3	60.7	6	19	59	San Carlos Avenue	Club dr	Alameda de Las Pulgas	4,840	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
20	60.1	63.8	64.2	13	42	132	San Carlos Avenue	Alameda de Las Pulgas	El Camino Real	16,430	25	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
21	59.7	63.4	63.8	12	38	120	Brittan Avenue	the West	Alameda de Las Pulgas	9,865	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
22	59.7	63.4	63.8	12	38	120	Brittan Avenue	Alameda de Las Pulgas	El Camino Real	9,895	30	0.0%	98.5%	1.0%	0.5%	75.0%	10.0%	15.0%	2	Hard	50	0	20
23	60.6	64.3	64.6	15	46	146	Brittan Avenue	Old Country Rd	Industrial Rd	8,450	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44
24	58.9	62.6	63.0	10	32	100	Howard Avenue	the West	El Camino Real	10,205	25	0.0%	97.5%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Hard	50	0	20
25	58.9	62.6	63.0	10	31	100	Howard Avenue	Old Country Rd	the East	5,770	30	0.0%	96.5%	2.0%	1.5%	75.0%	10.0%	15.0%	4	Hard	50	0	44

APPENDIX D:
TRANSPORTATION DATA

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

November 8, 2024 Project# 29177

To: Alexis Mena, Placeworks
Cc: Mark Spencer, Kenny Jeong, W-Trans.
From: Damian Stefanakis, Anusha Musunuru, Kittelson & Associates, Inc.
RE: **San Carlos General Plan Reset EIR – VMT Assessment Memorandum**

INTRODUCTION

Kittelson and Associates (Kittelson) has provided this vehicle miles traveled (VMT) impact assessment for the San Carlos General Plan Reset EIR. This assessment is based on the travel modeling conducted by Kittelson using the San Carlos version of the C/CAG-VTA Countywide Model. This version of the model includes updates to a 2024 existing year and other planned projects within San Carlos.

The VMT assessment is based on the most recent City of San Carlos SB 743 VMT Guidelines that are currently in draft form. The modeling included an assessment of three scenarios, existing 2024 baseline, 2045 No-Build and 2045 General Plan Reset Build.

Land uses were compiled for all three scenarios at the traffic analysis zone (TAZ) level and included conversion of various land use types into model inputs. Model inputs include households, population, and employment for six different categories. The project's land use characteristics were entered into the model in the appropriate location at the TAZ level, model runs were completed, and relevant VMT results were extracted. Buildout land uses used in the forecast modeling are summarized in Appendix A. VMT metrics were assessed for the GP Build scenario compared to the baseline regional average.

CEQA VMT SCREENING

The VMT Guidelines for CEQA state that Projects that meet certain screening criteria are not required to prepare a VMT assessment for CEQA transportation assessment purposes. However, even if a project is presumed to have a less than significant VMT impact, it may still be required to evaluate the following CEQA requirements listed in Appendix G of the *CEQA Statute & Guidelines* based on the site access and plan review:

A. Conflicts with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities.
B. Conflict or be inconsistent with CEQA Statute & Guidelines section 15064.3, subdivision.
C. Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
D. Results in inadequate emergency access.

This analysis focuses on how VMT impacts are identified for the Plan under the Checklist item B.

CEQA screening criteria for land use projects in San Carlos are listed below:

- Small Projects
- Low VMT Areas (per City VMT maps)

- Transit priority areas (TPA) – usually within ½ mile around an existing major transit corridor with frequencies of 15 minutes or better.
- Affordable Housing – 100% restricted affordable residential project in infill locations.
- Neighborhood-serving Retail/ Public Facility

VMT THRESHOLDS

VMT thresholds are defined using the most recent SB 743 VMT Guidelines prepared for the City of San Carlos that are currently in draft form. These were developed based on recommendations from the California Office of Planning and Research (OPR), dated December 2018. Cities and counties were allowed to develop their own methods, but CEQA impact criteria are mostly consistent with OPR recommendations. The City Council will be adopting these revised VMT guidelines soon.

The City of San Carlos has opted to compare VMT results to a regional baseline average threshold. Based on City guidelines, any development that does not screen out (described above) for a VMT assessment should generate a VMT per service, per capita, or per employee VMT of 15% less than the regional average in order to not incur impacts under CEQA and SB 743.

While some projects may screen out based on proximity to transit or other criteria, this general plan reset buildout is assessed at a programmatic level. In future, more detailed project level VMT analysis may be required to screen out or evaluate individual project applications.

VMT RESULTS

VMT metrics for San Carlos are compared to the regionwide average and an impact is identified if the total project VMT per service population, per capita and per employee, is higher than the established 15% (0.85) below the county average threshold.

VMT PER SERVICE POPULATION

At the aggregate level, **Table 1** indicates that the General Plan Reset's overall VMT results generate higher total VMT with the project compared to the 2024 existing baseline. This is to be expected considering the increase in citywide buildout land uses by 2045.

Table 1 also indicates the 2045 project will result in VMT/service population that is higher than 15% below the existing baseline regionwide average (26.51 compared to 23.20), and in aggregate this may likely be considered an impact for CEQA under VMT City Guidelines.

While this result may be considered conservative at the programmatic level, it should be noted the VMT modeling analysis does include VMT associated with existing land uses, which are not easily separated from future land use VMT. Invariably, areawide plans may not be able to achieve baseline targets because of the existing land use VMT. However, if the 2045 citywide project VMT is compared to the 2024 existing baseline VMT for the City, there is a citywide decrease in VMT/Service Population (from 26.82 to 26.51). This suggests the buildout land uses are performing better than existing land uses by shortening average trip lengths' and generally reducing overall VMT.

Also note, while the general plan reset buildout land uses are modeled citywide, many development sites will be strategically concentrated in key development areas within 0.5 miles of high quality transit and therefore per City VMT guidelines they could screen out when assessed at the project level for VMT.

VMT PER CAPITA

Table 2 indicates that the 2045 General Plan Reset home-based work VMT per capita is higher than 15% below existing regional baseline (15.84 versus 13.71), and in aggregate may likely be considered an impact for CEQA under VMT City Guidelines.

VMT PER EMPLOYEE

Similarly**, Table 3** indicates that the 2045 General Plan Reset home-based work VMT per employee is higher than 15% below existing regional baseline (18.55 versus 14.8), and in aggregate may likely be considered an impact for CEQA under VMT City Guidelines.

CUMULATIVE CONDITIONS

The City VMT Guidelines also recommend computing VMT using the boundary method for cumulative conditions. As stated in the Guidelines, Cumulative Conditions provide a long-range view of future travel patterns based on the region's land use and transportation system projections. Because VMT may fluctuate with population and employment growth, or changes in travel modes, the City Guidelines recommend that any impact analysis should consider the cumulative effects of the proposed project, including other changes, and all other projects. An evaluation of the project's effect on VMT is a comparison of the total boundary VMT within San Mateo County between Cumulative without Project Conditions and Cumulative with Project Conditions. **Table 4** indicates that the 2045 General Plan Reset increases countywide boundary VMT by 159,008, or 0.7%, compared to 2045 No-Build.

Table 1. VMT per Service Population

Scenario	Households	Population	Employee	Service VMT	VMT/ Service	15% Below
2024 No-Project						
City	13,253	43,164	20,787	1,714,960	26.82	
County	272,149	792,983	385,023	34,364,121	29.17	
Region	2,767,453	7,750,809	3,850,038	316,943,247	27.32	**23.20**
2045 No-Project						
City	21,554	64,780	29,311	2,384,653	25.34	
County	332,206	963,941	496,472	42,784,063	29.30	
Region	3,432,942	9,697,102	4,735,624	392,787,195	27.22	
2045 Plus Project						
City	21,554	64,781	47,326	2,972,085	**26.51**	
County	332,206	963,942	514,487	43,445,984	29.39	
Region	3,432,942	9,697,103	4,753,639	393,579,002	27.24	

SOURCE: KITTELSON & ASSOCIATES, INC., 2024

NOTE: CITY, COUNTY AND REGION ARE SUMMARIZED.
CITY INCLUDES THE PROPOSED GP PROJECT LAND USES
SERVICE POPULATION IS HOUSEHOLD POPULATION + EMPLOYMENT
2045 PLUS PROJECT REDUCES VMT/ SERVICE COMPARED TO EXISTING BUT IS HIGHER THAN 15% BELOW REGION AVERAGE

Table 2. VMT per Capita

Scenario	Households	Population	Residential VMT	VMT/capita	15% Below
2024 No-Project					
City	13,253	43,164	735,863	17.05	
County	272,149	792,983	12,743,901	16.07	
Region	2,767,453	7,750,809	124,999,697	16.13	**13.71**
2045 No-Project					
City	21,554	64,780	1,080,957	16.69	
County	332,206	963,941	14,600,408	15.15	
Region	3,432,942	9,697,102	156,670,594	16.16	
2045 Plus Project					
City	21,554	64,781	1,026,010	**15.84**	
County	332,206	963,942	14,492,305	15.03	
Region	3,432,942	9,697,103	156,876,303	16.18	

SOURCE: KITTELSON & ASSOCIATES, INC., 2024

NOTE: CITY, COUNTY AND REGION ARE SUMMARIZED.
CITY INCLUDES THE PROPOSED GP PROJECT LAND USES
NET CHANGE IN CITY METRICS IS ASSOCIATED WITH THE GENERAL PLAN RESET
2045 PLUS PROJECT REDUCES VMT/ CAPITA COMPARED TO EXISTING BUT IS HIGHER THAN 15% BELOW REGION AVERAGE

Table 3. VMT per Employee

Scenario	Households	Employees	Employee VMT	VMT/ Employee	15% Below
2024 No-Project					
City	13,253	20,787	387,047	18.62	
County	272,149	385,023	7,376,675	19.16	
Region	2,767,453	3,850,038	66,840,112	17.36	**14.8**
2045 No-Project					
City	21,554	29,311	538,680	18.38	
County	332,206	496,472	9,935,101	20.01	
Region	3,432,942	4,735,624	83,806,389	17.70	
2045 Plus Project					
City	21,554	47,326	877,892	**18.55**	
County	332,206	514,487	10,356,566	20.13	
Region	3,432,942	4,753,639	84,048,418	17.68	

SOURCE: KITTELSON & ASSOCIATES, INC., 2024

NOTE: CITY, COUNTY AND REGION ARE SUMMARIZED.
CITY INCLUDES THE PROPOSED GP PROJECT LAND USES
NET CHANGE IN CITY METRICS IS ASSOCIATED WITH THE GENERAL PLAN RESET
2045 PLUS PROJECT REDUCES VMT/ EMPLOYEE COMPARED TO EXISTING BUT IS HIGHER THAN 15% BELOW REGION AVERAGE

Table 4. Total Boundary Countywide VMT

Scenario	Boundary VMT	Net Change
2024 No-Project		
City		
County	17,852,477	
2040 No-Project		
City		
County	22,070,724	
2040 Plus Project		
City		
County	22,229,732	159,008 (0.7%)

SOURCE: KITTELSON & ASSOCIATES, INC., 2024
NOTE: ONLY COUNTY BOUNDARY LEVEL VMT IS SUMMARIZED.
NET CHANGE IN METRICS IS ASSOCIATED WITH 2045 PLUS PROJECT VMT COMPARED TO 2045 NO-PROJECT

CEQA THRESHOLDS OF SIGNIFICANCE

This analysis focuses on how VMT impacts are identified for the Plan under CEQA Checklist item B.

Based on Appendix G: Environmental Checklist Form in the CEQA Statute & Guidelines, a significant transportation-related impact could occur if a project would:

B. Conflict or be inconsistent with CEQA Statute & Guidelines section 15064.3, subdivision (b)

The following summarizes the land use project or land use plan VMT thresholds per the Senate Bill 743 Implementation - VMT Metrics, Thresholds, Screening Criteria, Calculation Methods, and Implementation for Adoption memorandum and the San Carlos City Council Resolution No. 2020-066.

Impacts for the 2045 General Plan Reset project were only assessed under Cumulative Conditions, and are identified for each criterion in **Bold.**

The VMT significance thresholds for land use projects and plans compared to Cumulative conditions are:

1. Project Impact: A significant impact would occur if the total project generated VMT per service population for the project would exceed a level of 15% below the regionwide baseline VMT rate. **IMPACT? Yes.**
2. Project Impact: A significant impact would occur if the home-based project generated VMT per resident for the project would exceed a level of 15% below the regionwide baseline VMT rate. **IMPACT? Yes.**
3. Project Impact: A significant impact would occur if the home-based work project generated VMT per employee for the project would exceed a level of 15% below the regionwide baseline VMT rate. **IMPACT? Yes.**
4. Project Effect: A significant impact would occur if the project increases total (boundary) countywide VMT compared to Cumulative No-Project conditions. **IMPACT? Yes.**

The result indicate, at the programmatic level without further mitigation, the proposed project would be impacted for all VMT criteria under cumulative conditions.

FINDINGS

The VMT assessment for the San Carlos General Plan Reset was conducted using the C/CAG-VTA countywide model. Land uses were compiled for all three scenarios at the traffic analysis zone (TAZ) level and included conversion of various land use types into model inputs. Model inputs include households, population, and employment for six different categories. The project's land use characteristics were entered into the model in the appropriate location at the TAZ level, model runs were completed, and relevant VMT results were extracted. VMT metrics were assessed for the No Build and GP Build scenario compared to the baseline regional average.

Based on the VMT results, it appears the 2045 General Plan Reset, when assessed at the aggregate programmatic level, would incur VMT impacts under CEQA and would therefore be **significant and unavoidable without further mitigation.**

While this result may be considered conservative at the programmatic level, it should be noted the VMT modeling analysis also includes VMT associated with existing land use VMT, which are not easily separated from future land use VMT. Invariably, areawide plans may not be able to achieve baseline targets because of the existing land use VMT. However, if the 2045 citywide project VMT is compared to the 2024 existing baseline VMT for the City, there is a citywide decrease in VMT/Service Population (from 26.82 to 26.51). This suggests the buildout land uses are performing better than existing land uses by shortening average trip lengths' and generally reducing overall VMT per service population.

Also note, while the general plan reset buildout land uses are modeled citywide, many development sites would be strategically concentrated in key development areas within 0.5 miles of high quality transit, and therefore per City VMT guidelines, they could potentially screen out for VMT when assessed at the project specific level.

TDM TRIP REDUCTION MITIGATION

This VMT analysis does not account for City TDM ordinances that could contribute to reducing trip making and resulting VMT. A calculation of how much trip reduction is needed indicated that 30% TDM would be required to reduce the VMT/Service Population below the 15% below existing baseline level, from 23.2 to 23.15, to be able to mitigate the Plan at the programmatic level to **Less than Significant**.

APPENDIX

Table A1: 2024 Existing Model Land Use Demographics

ZONE	Total Housing Units	Single-Fam Units	Multi-Fam Units	Total Jobs	Retail Jobs	Service Jobs	Other Jobs	Ag Jobs	Manufacturing Jobs	Wholesale Jobs
1564	**1,367**	1,335	32	**52**	-	2	50	-	-	-
1565	**890**	867	23	**2**	-	2	1	-	-	-
1566	**609**	539	70	**35**	12	15	6	-	-	1
1567	**292**	222	70	**700**	-	152	38	-	510	-
1601	**-**	-	-	**4,621**	1,567	1,749	1,140	-	34	131
1602	**292**	222	70	**292**	20	131	135	-	4	2
1623	**1,241**	574	667	**150**	30	98	20	-	-	3
1624	**-**	-	-	**1,927**	110	898	875	-	34	9
1669	**-**	-	-	**233**	49	61	119	-	-	4
1670	**-**	-	-	**2,374**	345	1,036	930	-	34	29
2004	**645**	215	430	**326**	-	247	51	-	27	-
2005	**858**	845	13	**2**	-	2	1	-	-	-
2006	**1,322**	1,119	203	**2**	-	2	1	-	-	-
2007	**902**	902	-	**2**	-	2	1	-	-	-
2008	**1,519**	1,383	136	**2**	-	2	1	-	-	-
2009	**2,057**	583	1,474	**2,120**	282	949	866	-	-	24
2010	**-**	-	-	**7,910**	30	2,369	86	-	5,423	3
2018	**1,259**	867	392	**35**	12	15	6	-	-	1
TOTAL	**13,253**	9,673	3,580	**20,787**	2,458	7,729	4,328	-	6,068	205

Table A2: 2045 No Build Model Land Use Demographics

ZONE	Total Housing Units	Single-Fam Units	Multi-Fam Units	Total Jobs	Retail Jobs	Service Jobs	Other Jobs	Ag Jobs	Manufacturing Jobs	Wholesale Jobs
1564	**1,676**	1,344	332	**52**	-	2	50	-	-	-
1565	**1,399**	876	523	**2**	-	2	1	-	-	-
1566	**1,409**	539	870	**35**	12	15	6	-	-	1
1567	**592**	222	370	**700**	-	152	38	-	510	-
1601	**-**	-	-	**10,503**	1,201	7,379	1,140	-	684	100
1602	**592**	222	370	**292**	20	131	135	-	4	2
1623	**2,483**	574	1,909	**121**	13	87	20	-	-	1
1624	**-**	-	-	**2,406**	84	1,353	875	-	87	7
1669	**-**	-	-	**233**	49	61	119	-	-	4
1670	**-**	-	-	**3,250**	333	1,925	930	-	35	28
2004	**645**	215	430	**326**	-	247	51	-	27	-
2005	**867**	854	13	**2**	-	2	1	-	-	-
2006	**2,532**	1,129	1,403	**2**	-	2	1	-	-	-
2007	**1,402**	902	500	**2**	-	2	1	-	-	-
2008	**2,219**	1,383	836	**2**	-	2	1	-	-	-
2009	**3,679**	583	3,096	**2,120**	282	949	866	-	-	24
2010	**-**	-	-	**9,226**	30	3,885	86	-	5,223	3
2018	**2,059**	867	1,192	**35**	12	15	6	-	-	1
TOTAL	**21,554**	9,710	11,844	**29,311**	2,035	16,209	4,328	-	6,570	170

Table A3: 2045 General Plan Reset Buildout Model Land Use Demographics

ZONE	Total Housing Units	Single-Fam Units	Multi-Fam Units	Total Jobs	Retail Jobs	Service Jobs	Other Jobs	Ag Jobs	Manufacturing Jobs	Wholesale Jobs
1564	**1,461**	1,344	117	**52**	-	2	50	-	-	-
1565	**1,127**	876	251	**2**	-	2	1	-	-	-
1566	**1,116**	539	577	**36**	18	12	5	-	-	2
1567	**1,222**	222	1,000	**960**	6	356	88	-	510	1
1601	**-**	-	-	**12,177**	1,148	9,626	1,140	-	168	96
1602	**327**	222	105	**292**	20	131	135	-	4	2
1623	**2,665**	574	2,091	**460**	42	337	78	-	-	4
1624	**-**	-	-	**4,399**	47	3,354	875	-	119	4
1669	**-**	-	-	**233**	49	61	119	-	-	4
1670	**-**	-	-	**5,266**	296	3,947	930	-	69	25
2004	**645**	215	430	**326**	-	247	51	-	27	-
2005	**867**	854	13	**2**	-	2	1	-	-	-
2006	**2,246**	1,129	1,117	**2**	-	2	1	-	-	-
2007	**1,130**	902	228	**2**	-	2	1	-	-	-
2008	**1,976**	1,383	593	**2**	-	2	1	-	-	-
2009	**4,016**	583	3,433	**2,740**	426	1,337	942	-	-	36
2010	**990**	-	990	**20,337**	72	10,075	184	-	10,000	6
2018	**1,766**	867	899	**36**	18	12	5	-	-	2
TOTAL	**21,554**	9,710	11,844	**47,326**	2,142	29,503	4,606	-	10,897	179

APPENDIX E:
PROPOSED GENERAL PLAN AMENDMENTS

Appendix E: Proposed General Plan Amendments

This document presents proposed amendments to the San Carlos 2030 General Plan. Underlined text represents language that has been added to the General Plan; text with ~~strikethrough~~ has been deleted from the General Plan. This document focuses on non-formatting changes to the policies and actions of the General Plan and does not include changes to the General Plan format, background information, or narrative language.

Front Matter

Land Acknowledgement: The City of San Carlos acknowledges that our lands are located on the ancestral homeland of the Ramaytush Ohlone peoples, and that, as the original stewards of this land, the Ramaytush Ohlone understood the interconnectedness of all things and maintained harmony with nature for millennia.

Chapter 3 – Land Use Element

- **Action LU-1.1:** Continue to evaluate the Transportation Demand Management Ordinance to encourage mode shift ~~Amend the Zoning Ordinance to create a Transportation Demand Management Ordinance that contains strategies to enhance travel patterns and~~ to reduce vehicular trip generation from new development ~~by 20 percent~~.
- **Policy LU-4.3:** Annexation of undeveloped parcels shall be in substantial compliance with the following criteria:
  a. The parcels are contiguous to parcels located in the City of San Carlos and contiguous or provisions have been made to become contiguous to city streets.
  b. Require minimum lot size in hillside areas considered for subdivision or annexation to be larger than lots on flat areas to minimize slope instability, erosion and drainage impacts. Lots shall meet, or shall be merged to meet, the minimum lot size established in the subdivision ordinance.
  c. Parcels with development potential of five or more lots shall cluster single-family detached homes ~~utilizing the Planned Community PC zone~~ to the degree feasible. In such cases the density may not exceed the density permitted by the lot size standards of the San Carlos Subdivision Ordinance. Further, the provisions related to portions of the development which must remain ungraded shall apply. Only the lot size requirements may vary. In such cases, the minimum lot size shall be 10,000 square feet.
- **Policy LU-4.6** Parcels proposed for annexation to the City shall be prezoned.
  a. Undeveloped Residential Parcels. Parcels with development potential of five or more lots shall be zoned to Planned ~~Community (with minimum R-1-LD Development Standards)~~ Development with minimum RS-3 development standards prior to approval of a Tentative Subdivision Map. Parcels with development potential of less than five lots shall be prezoned RS-3.
  b. ~~Other parcels proposed for annexation shall be prezoned R-1-LD Low- Density, Single-Family Residential District.~~ Developed residential parcels and parcels with development potential for

nonresidential use shall be prezoned consistent with surrounding and/or like zoning district classifications which represent uses intended for the property.

- **Policy LU-5.16:** Identify, develop and implement ~~Redevelopment Agency sponsored~~ programs and other public/private partnership developments to help facilitate economic development.
- **Policy LU-5.17:** Encourage the development as well as improvements to the ingress and egress on the following public parking lots ~~plazas~~: South Plaza, Williams Plaza, Wheeler Plaza and Clark Plaza. Encourage the consolidation and acquisition of parcels when opportunities become available to expand the public parking lots ~~plazas~~, provide improved ingress and egress and improve the efficiency of design.
- **Action LU-7.1:** Continue to implement the City's adopted Bicycle and Pedestrian Master Plan adopted on June 9th, 2020 and update the Master Plan as needed. ~~Prepare a community study to seek new ways to enhance walkability and connect all areas of the community. The current Bicycle Transportation Plan could be expanded to be a Bicycle and Pedestrian Transportation Plan.~~
- **Policy LU-8.19:** Residential structures shall be de- signed to be compatible with existing structures in the vicinity, avoid obstructing views from adjacent structures or views of community importance, avoid interference with the right or ability to use solar energy and be consistent with the Objective Design Standards ~~community design principles~~.
- **Policy LU-12.1:** Evaluate historical, cultural, and tribal cultural resources early in the development review process through consultation with interested parties.
- **Action LU-12.1:** Ensure thorough compliance with the provisions of the California Environmental Quality Act (CEQA) relating to potential impacts to cultural, ~~and~~ historical, and tribal cultural resources.
- **Action LU-12.6:** The City of San Carlos shall develop mapping to indicate areas in the City with archaeological sensitivity and guidance documentation for public and private construction projects that involve ground disturbance activities in areas with archaeological sensitivity. The requirements may include 1) an archeological records search, 2) construction training for cultural sensitivity, and 3) procedures if archaeologic resources are discovered.

Chapter 5 – Circulation and Scenic Highways Element

- **Policy CSH-3.1:** Strive to reduce baseline and development-related traffic by implementing and enforcing the Transportation Demand Management Ordinance ~~20 percent through public-private partnership efforts~~.
- **Policy CSH-3.3:** Support the incorporation of Transportation Demand Management measures in new development to reduce traffic impacts.
- **Policy CSH-3.7:** Public sidewalks and walkways shall be designed to accommodate access in accordance with the Americans with Disabilities Act, and including any other applicable State and federal laws, regulations and guidelines, and shall be kept clear of obstruction.

- **Policy CSH-3.8** The City shall ~~strive to maintain intersection~~ continue to evaluate service level~~s above the mid- range of level D (not to exceed a Volume- to-Capacity Ratio (V/C) of .85 or a total average delay time at intersections of 45 seconds whenever V/C Ratio is not available)~~ metrics as provided by the City's ~~Transportation Impact Analysis (or~~ Transportation Study~~)~~ Guidelines as adopted November 12, 2024, Resolution 2024-118. The City recognizes that certain development project(s) may cause ~~this level of service goal~~ these thresholds to be exceeded. The City may approve such development project(s) if specific economic, legal, social, technological, or other benefits outweigh the ~~adverse~~ effects of exceeding the ~~mid-range level D goal~~ thresholds as set forth in the Transportation Study Guidelines.
- **Action CSH-3.2:** The City shall consider adoption of a Transportation Impact Fee for new development to support city-wide Transportation Demand Management measures.
- **Policy CSH-4.2:** Reduce potential conflicts, safety hazards and physical obstacles between bicyclists, automobiles and pedestrians and ensure compliance with the Americans with Disabilities Act, and including any other applicable State and federal laws, regulations and guidelines.

Chapter 6 – Environmental Management

- **Action EM-1.5:** Require that major new buildings and taller structures that extend above the existing surrounding urban fabric and height of the tree canopy be designed to minimize the potential risk of bird collisions using input from the latest bird-safe design guidelines and best management practice strategies to reduce bird strikes.

Chapter 7 – Parks and Recreation

- **Policy PR-2.3:** Continue to support implementation of trail connections as identified in the City's ~~Master Plan for Parks, Open Space, Buildings and other Recreation Facilities~~ Potential Trail Connections Plan.
- **Policy PR-3.7:** Protect the Youth Center as a valuable venue ~~exclusively for~~ giving priority to youth activities and programs as subject to the terms in the Youth Center Use Policy adopted by City Council.

Chapter 9 – Noise

- **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~~ All construction activities shall comply with the City's noise ordinance. Development projects that require an acoustical study shall incorporate reasonable noise and vibration reduction measures and best management practices to minimize excessive noise levels during all phases of construction activity. Reduction measures and best management practices may include, but are not limited to, noise control techniques for construction tools and equipment, construction site management techniques, temporary noise barriers, noise monitoring and reporting, and/or construction traffic management.

- **Policy NOI-1.12:** Ensure consistency with the noise compatibility policies and criteria contained in the ~~San Carlos Airport Land Use Plan~~ Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport.