APPENDIX A

NOTICE OF PREPARATION (NOP) AND COMMENTS ON THE NOP

Appendix A1: Notice of Preparation

Notice of Preparation
Environmental Impact Report
City of San Mateo

Date: January 12, 2022

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations

From: Zachary Dahl, Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, CA 94403

Subject: Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR)
Lead Agency: City of San Mateo Community Development Department
Project Title: San Mateo General Plan Update

Notice is hereby given that the City of San Mateo (City) will prepare an EIR for the San Mateo General Plan Update (proposed project). Pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15206, the proposed project is considered a project of statewide, regional, or areawide significance. The City, acting as the Lead Agency, will prepare an EIR to address the potential environmental impacts associated with the project at a programmatic level consistent with CEQA Guidelines Section 15168. The program-level EIR will evaluate the environmental impacts associated with the broad policies of the General Plan Update and the likely type and amount of development allowed within the General Plan horizon of 2040. This EIR will not evaluate detailed, site-specific projects under the General Plan. An evaluation of project alternatives that could reduce significant impacts will be included in the EIR. The proposed project, its location, and potential environmental effects are described below. Additional information on the General Plan Update is available at www.StriveSanMateo.org.

Members of the public and public agencies are invited to provide comments in writing as to the scope and content of the EIR. The City needs to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but no later than the close of the 30-day Notice of Preparation (NOP) review period on Friday, February 11, 2022. If you submit comments on the scope of the EIR, you will automatically be added to the City's distribution list for future notices and information about the environmental review process for proposed project. If you do not wish to submit comments on the scope of the EIR, but would like to be added to the City's mailing list, you can submit your contact information, including email address with a request to be added to the mailing list.

Please send your written comments to Zachary Dahl, Deputy Director of Community Development, at the address shown above or email to zdahl@cityofsanmateo.org with "*General Plan Update EIR*" as the subject. Public agencies providing comments are asked to include a contact person for the agency.

1. Project Location:

San Mateo is located in the San Francisco Bay Area in Northern California. It is bordered by the San Francisco Bay and City of Foster City to the east, the City of Burlingame and Town of Hillsborough to the north, the City of Belmont to the south, and the Town of Hillsborough and unincorporated San Mateo County to the west. Major interstates and State routes include Highway 101 and California State Routes 92 and 82. Figure 1 shows the regional setting of the City of San Mateo and the EIR Study Area.

2. Lead Agency Contact:

Zachary Dahl, Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, CA 94403
(650) 522-7207
zdahl@cityofsanmateo.org

3. Project Sponsor:

City of San Mateo

4. Project Description:

The City of San Mateo is preparing comprehensive updates to its existing General Plan. The update is expected to be completed in 2023 and will guide the City's development and conservation through 2040.

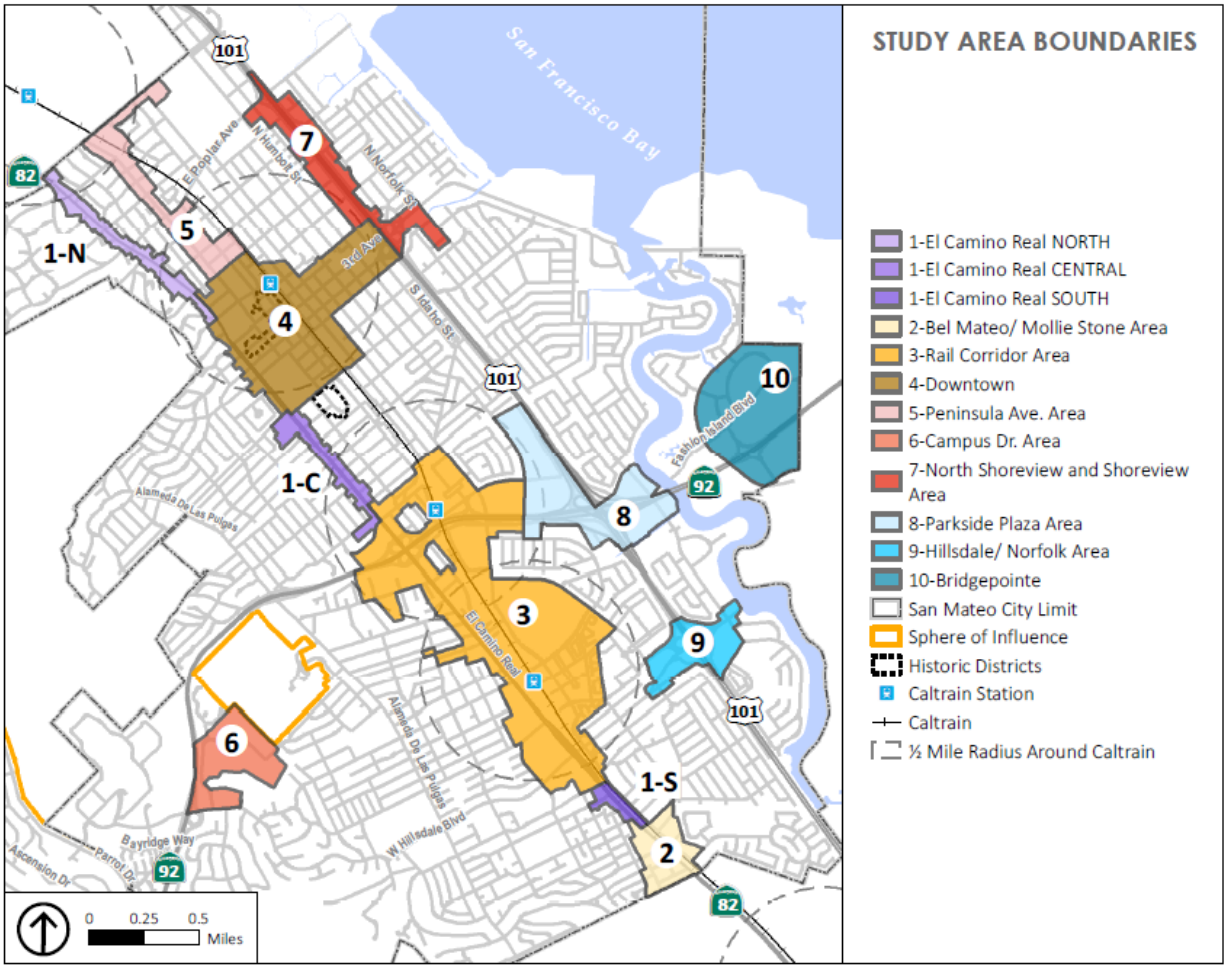
State law requires that the General Plan contain eight elements: Land Use, Circulation, Housing, Open Space, Noise, Safety, Conservation, and Environmental Justice. The content of these elements is outlined in State law. The General Plan Update will include revisions to the policies and land use map of the existing General Plan. The updated General Plan will include all State-required elements, and an optional element, Urban Design.

The overall purpose of the General Plan Update is to create a policy framework that articulates a vision for the city's long-term physical form and development, while preserving and enhancing the quality of life for San Mateo residents. The key components of this project will include broad community goals for the future of the City of San Mateo and specific policies and implementing actions that will help meet the goals. The General Plan Update will add new and expanded policy topics to address the current requirements of State law, modernize the City's policy framework, and address land use mapping issues and inconsistencies. To achieve the General Plan vision, the City has analyzed three alternatives for ten Study Areas that were developed through an extensive public process. The Study Areas include areas near transit; areas where current buildings are aging, vacant, or not maintained; or areas where property owners have expressed interest in considering redevelopment of the property. The Study Areas are the locations where the majority of growth is projected to occur; however, changes could still occur outside of these areas. Figure 2 shows the Study Areas.

FIGURE 1: PROJECT LOCATION & STUDY AREA

Source data: City of San Mateo, 2019; San Mateo County, 2018; Esri, 2019; PlaceWorks, 2019.

FIGURE 2: TEN STUDY AREAS



5. Potential Environmental Impacts of the Project

The EIR for the proposed project will address the range of impacts that could result from adoption and implementation of the General Plan. Below is a list of environmental topics that will be examined 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 System Services
- Wildfire

6. Public Meetings and Workshops

The City will hold many public workshops and meetings throughout the planning process, as well as several meetings of the General Plan Subcommittee, Planning Commission, and City Council, to inform the public and interested agencies about the proposed project and solicit feedback on the contents of the proposed General Plan Update. Details for each meeting will be made available on the City website and the project website at www.StriveSanMateo.org.

The City will also hold a scoping meeting to solicit public comment on the environmental issues to be addressed in the EIR. The scoping meeting will be held on as part of the scheduled Planning Commission meeting on Tuesday, January 25, 2022, at 7:00 p.m. Due to the State of California's Declaration of Emergency and Shelter in Place Order, all City Council and Commission meetings will be held remotely. In-person attendance is not an option. The public can attend the scoping meeting and provide comment virtually using the instructions included in the agenda and provided on the City's website at https://www.cityofsanmateo.org/3971/Agendas-Minutes-Public-Meeting-Portal.

Date: January 10, 2022

Signature: Zachary Dahl

Title: Deputy Director

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Appendix A2: Comments on the NOP

January 17, 2022

Zachary Dahl, Deputy Director
Community Development Department
City of San Mateo
330 West 20th Ave.
San Mateo, CA 94403

Subject: Notice of Preparation (NOP) of Draft Environmental Impact Report (EIR)
Lead Agency: City of San Mateo Community Development Department
Project Title: San Mateo General Plan Update

Dear Mr. Dahl:

I am encouraged to see that cultural resources are among the environmental topics that will be examined in the EIR. As you know, cultural resources include historic resources, defined in the CEQA Guidelines as the built environment, including buildings, structures, districts, and landscapes generally at least 50 years old.

The first step in determining a project's impact on cultural resources is to identify whether or not cultural resources are present. In the same way that a site inventory of land suitable for residential development is indispensable to an analysis of San Mateo's development capacity within the General Plan 2040 planning horizon, an inventory of cultural resources is necessary to determine if, and to what extent projected growth will adversely effect historic and cultural resources. Without critical data on the number and location of existing cultural resources, an adequate evaluation of the impacts becomes impossible.

San Mateo's General Plan 2040 anticipates that in the next twenty years San Mateo will undergo an almost unprecedented level of population, jobs and housing growth. Even the least disruptive of the three alternative scenarios contemplated will increase population by 30%, jobs by 20% and housing by 27%. The most aggressive alternative calls for population and housing growth exceeding 50% of 2020 levels. The impacts of this growth will be felt city-wide, effecting every neighborhood in every corner of the city in residential and commercial districts alike.

Therefore, I respectfully request that the City conduct a reconnaissance-level cultural resource survey concurrently and in tandem with the General Plan EIR to ensure potential adverse impacts to cultural resources are adequately evaluated. A reconnaissance-level survey is a first step in the survey process that identifies those areas and properties worthy of further study. Reconnaissance surveys establish broad historic and architectural contexts necessary for understanding our community history. Like the program-level EIR itself, a reconnaissance-level cultural resource survey provides an opportunity to consider broad policy alternatives and program-wide mitigation measures and provides greater flexibility to address cumulative impacts on a comprehensive basis.

Sincerely,
Keith Weber
San Mateo

Dear Mr. Dahl,

I gave a copy of the Historic Resources Evaluation Report for 1007 East 5th Avenue San Mateo dated October 2018, to Julia Klein, Principal Planner and the GP sub-committee when we began the General Plan review. This historical evaluation report was prepared by Denise Bradley, Landscape Historian and Ward Hill, Architectural Historian. It qualifies as a both as a historical resource and unique archaeological resources.

In reviewing the maps of Area 4 - Downtown, we did not see a historical marker for our home, hill and pond Japanese Garden, Katsura building, walkway, and a second Japanese Garden on your map. Our property is located on 5th Avenue, S. Humboldt, and 4th Avenue. Perhaps I missed it?

Please include our property in your GP EIR scoping and provide mitigation if there are adverse environmental impacts. In the past, the City did a separate EIR for it's inclusion in the 3rd Avenue Interchange Improvement Project. Our Historic Resources Evaluation was included in the 101 Managed Lane Project EIR, and it will be included in the Peninsula/101 Interchange Project EIR.

Also, when the San Mateo Historic Building Survey 1989 gets funded and updated, we would like to see more of the historic styled bungalows in the East San Mateo / Central Neighborhood included which look like the illustrations in the survey. It seems like the bar was set very high for inclusion to the survey. We would like to preserve and protect more of our special Craftsmen, Spanish Colonial Revival, Eastern Shingle Cottages, and Tudor Revival homes which represent the neighborhood character of the east side of San Mateo.

Thank you.

Laurie Watanuki
1007 East 5th Avenue
San Mateo, CA 94402

To All: this is a follow up and expansion of my stated comments about the Environmental Impact Report scoping meeting at the January 25, 2022 planning commission meeting.

1. Sea level rise needs to be included as one of the potential environmental impacts to the project. With large swaths of the city currently exposed to sea level rise and storm surges, a focus needs to be placed on protecting and conserving the existing built environment and any new development in these common areas.
2. The amount of private property and critical infrastructure, all of which is documented in studies by San Mateo County flood assessment studies, clearly demands that the city needs to include sea level rise as a highly important component of the EIR. The city of San Mateo has intimate information of the county's studies thru its participation not only of staff time yet also with council members as part of the studies as board members.
3. Additionally, and potentially more harmful to the city, is the effect of Shallow Groundwater Rise due to sea level rise. A study is being conducted for the County of San Mateo by the San Francisco Estuary Institute & The Aquatic Science Center which will map shallow ground water tables to clearly identify and quantify what if any effects this issue will have on San Mateo. This study is tentatively planned to be out in the summer of 2022. This resource should be used in the general plan updates CEQA document.
4. The city of San Mateo assembled their own PWWF analysis for the Clean Water Program identifying a PWWF of 98 million gallons in a 24 hour period every five years starting in 2035. This is another study that should be used to determine how sea level rise, storm surges, shallow groundwater rise and on land flooding will affect current and expected growth in areas exposed to these impacts.

Thanks

John Ebneter

Hello Mr. Dahl,

I have been a San Mateo resident since 1983, and have never lived in any other place feeling more like home to me. Even after all these years, I marvel at the beautiful history our town has in its architecture - not only downtown, but in the surrounding neighborhoods.

Our home in Baywood is 86 years old, and we are the second owners. I was lucky enough to hear first-hand from the original owner the loving planning of this home - securing an architect from Louisiana, where he was born, to planning, and then building, a custom home for him and his family. At the time of the sale to me and my first husband in 1995, his daughter gave me a newspaper article about quality home construction in San Mateo, and our house was pictured as an example. With respect to their story of our beautiful home, my husband Dave and I have been careful in updating the home to preserve its history for San Mateo. And we are not alone: there are hundreds of others throughout San Mateo doing the same, as we all know the value of preserving our history, whether it be downtown, San Mateo Park, Hayward Park, Aragon, Baywood, or any neighborhood with historic architecture that helps tell San Mateo's story.

As a City, we have already dropped the ball once on not following through to clearly define and protect historic neighborhoods, please let's not do that again. Let's continue where the 1989 plan stopped and expedite to ensure our rich history and personality doesn't get erased in future planning.

What we'd like to see is clear direction in the Draft EIR for the General Plan, including:

1. The City must first fully identify its Historic Districts, using the 1989 Downtown Historic Study as a starting point.
2. Once the Historic Districts are identified, policies must be created and put in place to articulate how to identify, evaluate, protect, and preserve San Mateo's Historic Districts.
3. The above (1 and 2) MUST be completed before any increased housing plan via the General Plan is considered for San Mateo.

We think of this as "First Things First" by taking a full inventory of what is important for San Mateo to preserve, then future growth can be planned outside the Historic Districts. If we don't do this, we risk losing what makes San Mateo so special. I hope you will agree.

Thank you,

Connie Weiss and Dave Cohen
460 Fairfax Avenue
650-303-0402

have received this message in error, please notify the original sender immediately by telephone or by return e-mail and delete this message along with any attachments from your computer. Thank you.

Deputy Director Dahl:

I am the owner and resident of 421 Parrott Drive and I understand that the City of San Mateo is preparing an environment impact report in support of the long-term general plan. While growth is usually an important driver of a city's general plan, I would support consideration of growth as one of the city's objectives only if preservation of historic and intrinsically beautiful areas of the city are identified as the City's top priority. In support of this objective, I urge the City to conduct an exhaustive historic survey of San Mateo and implement policies to preserve and protect our historic neighborhoods.

Regards,

Larry Garnick
421 Parrott Drive
650-867-6175

Mr. Dahl-

I am excited the City is working on a new General Plan, as I believe we are at a critical time in our great City's development.

Of course there is a huge need to determine the growth and direction of our retail, office and housing base while being realistic about the potential to achieve any set goals, including the timing to affect any changes and the social and economic cost to do so.

Change and growth is both necessary and almost certain to happen no matter what we do, so guiding that change and growth is critical to ensure it happens in a manner that benefits our populace including considerations for traffic, parking, pollution, crime, and aesthetics.

I was born at Peninsula Hospital and grew up in San Mateo until I was 9 years old, then moved to Hillsborough. Since 1996 I have lived back here in San Mateo and love all it has to offer including the downtown retail (which has great potential), proximity to the freeways, schools, library, parks, and housing base.

We live in a 1928 vintage Spanish Mediterranean home which has been modernized over the years, yet retains the original Spanish tile façade accents, interior and exterior wrought iron details, arches, Spanish tile roof, tile courtyard, and many other irreplicable features that come with these historic homes.

As you know there are many historic districts in San Mateo, including Baywood, Aragon, San Mateo Park, Glazenwood, Hayward Park, and North Central.

Unfortunately, many districts have not been formally recognized by the City, though my understanding is they were identified in the 1989 Downtown historic study and have been recognized by the State Office of Historic Preservation.

Without this recognition I and many of my neighbors are concerned we will lose a great deal of this historic base and charm that makes San Mateo a wonderful place to live.

If residents and developers can entirely tear down or materially demolish/renovate these architectural masterpieces they will do so, and we will no longer have a city filled with these gems.

I believe the City must identify and protect these historic districts and resources by identifying policies that allow for the identification, evaluation and protection of these structures and that these actions must be considered in the Draft EIR for the General Plan.

Simply increasing the housing base without these considerations will clearly have an adverse effect on our historic resources and districts throughout the great city of San Mateo.

Thank you for your time and attention on this enormous task that clearly will shape our wonderful City for the next century.

Roger

Roger Oser

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Licensed Real Estate Broker

Dear Mr Zachary Dahl,
Director of San Mateo Community Development

This letter is my plea for the City of San Mateo to take a good hard look at what is going happen to San Mateo with the passage of the ABAG regional housing quota mandates, ADUs, SB9 and 10 to our historic districts in San Mateo.

There are many historic districts like Baywood, Aragon, Hayward Park, North Central etc. which have been recognized as such including the parts of the downtown. Many of these structures were built in the early 1900's and most before 1940 (I even helped put together a historic walking guide to Downtown San Mateo when I was a Downtown Ambassador working for the city) These districts represent the character and history of San Mateo with many streets named after the original inhabitants/founders of San Mateo. Do we want to tear down that history or preserve it? It sets San Mateo apart as a community with its own unique identity. Most of us are proud of that.

These historic housing areas were built with a particular style and charm that cannot be replaced. With the state legislation recently passed, the developers are going to run wild and put up many large multiunit buildings which will dominate neighborhoods with the highest profit motive, irrespective of the impact on the surrounding neighborhood. They will ruin the historic character/history of these neighborhoods along with inadequate onsite parking. It will become a real unsightly and less livable urban mess.

The city must identify historic resources, districts and policies that allow for protection of these districts. These actions must be considered in the Dratf EIR for the General Plan. I really do not think these policies will compromise the continued availability of housing in San Mateo with good urban planning and efficient use of lots of space that is or will become available.

Thank you for taking the time to listen

Best Regards

Gary Isoardi
San Mateo

We need you to send comments to Zachary Dahl, Deputy Director of Community Development (zdahl@cityofsanmateo.org) **about the need to identify and protect historic resources in San Mateo!**

Your comments are critical because the City Council is prioritizing more housing rather than protecting historic resources. Here are some key points you can make:

- There are many historic districts in San Mateo, including Baywood, Aragon, San Mateo Park, Glazenwood, Hayward Park, North Central, etc. Many districts have not been formally recognized by the City, even though they were identified in the 1989 Downtown historic study and recognized by the State Office of Historic Preservation.
- Increasing housing will have an adverse effect on historic resources and districts throughout San Mateo.
- The City must identify historic resources and districts.
- The City should identify policies that allow for the identification, evaluation, and protection of historic districts.
- These actions must be considered in the Draft EIR for the General Plan.

The City does not really give much weight to form letters so please add your words, even it is to just say:

Please conduct the historic survey of San Mateo and develop policies to protect our historic neighborhoods.

Dear Mr. Dahl,
I am writing in favor of the city recognizing historic neighborhoods and protecting the architectural character of those neighborhoods. The current trend of turning every remodel into a mid-century modern does not fit with the character of many of our neighborhoods which were developed before that time period. I have lived in two different neighborhoods in the city Hayward Park, with homes mostly from the 20's and Baywood with homes mostly from the 30's and 40's. I always thought that the few ranch style homes in Baywood stuck out like sore thumbs and the occasional modern home in Hayward Park also looked very out of place. Now there are Mid century Moderns popping up which would look okay in our Eichler style neighborhoods like the Highlands and Shoreview but not in many of the other areas. The reason we bought in Hayward Park and in Baywood was because of the older styles of homes. We would like the neighborhoods to retain their original feel.
Thank you,
Jean Garcia
jeanbeangarcia@yahoo.com

Hi Mr. Dahl,

I'm a resident of Baywood in San Mateo. I have owned the same home, 365 Fairfax Avenue, for 35 years. We moved into this house, because of the charm of this neighborhood: the unique architecture and the meticulous care each home receives. The historic status of these homes (my home, for instance, is nearly 100 years old), like the Victorians in the city, make our neighborhood quite special. Daily I walk my dog through our neighborhood and often I come across people from other neighborhoods who have come here to walk and enjoy the beauty.

Needless to say, I am writing to support identifying and evaluating our San Mateo historic resources and districts (conducting an historic survey of San Mateo) and developing policies to protect these homes as treasures, like we do National Parks. Hundred year old uniquely-built homes are precious.

Please include these actions in the Draft EIR for the General Plan.

Thank you for considering my request,
Teresa Rose Becker
365 Fairfax Ave
San Mateo, 94402

"Provide a safe and reliable transportation network that serves all people and respects the environment"
DISTRICT 4
OFFICE OF TRANSIT AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

February 8, 2022

SCH #: 2022010160
GTS #: 04-SM-2022-00413
GTS ID: 25265
Co/Rt/Pm: SM/82/11.69

Zachary Dahl, Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, CA 94403

Re: San Mateo General Plan Update Notice of Preparation (NOP)

Dear Zachary Dahl:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the San Mateo General Plan Update Project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the January 2022 NOP.

Project Understanding

The project includes the preparation of the City of San Mateo General Plan Update. The update will guide the City's development and conservation through 2040. The update will add new and expanded policy topics to address the current requirements of State law, modernize the City's policy framework, and address land use mapping issues and inconsistencies. The project encompasses the entire City and is located along segments of State Route (SR)-82 (El Camino Real), SR-92, and United States Route (US)-101.

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 Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide (*link*).

If projects within the General Plan area meet the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy to be presumed to have a less-than-significant VMT impact and exempt from detailed VMT analysis, please provide justification to support the exempt status in align with the City's VMT policy. Projects

that do not meet the screening criteria should include a detailed VMT analysis in the Draft Environmental Impact Report (DEIR), which should include the following:

- VMT analysis pursuant to the City's guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential traffic safety issues to the State Transportation Network (STN) may be assessed by Caltrans via the Interim Safety Guidance.

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

In addition, any improvements within the Caltrans' Right-of-Way (ROW) must follow Caltrans' process, policy, and design requirements. Any additional or re-zoning of improvements adjacent to Caltrans' ROW, including SR-82, SR-92, US-101, should include be included in the travel demand analysis with possible mitigation.

Mitigation Strategies
Location efficiency factors, including community design and regional accessibility, influence a project's impact on the environment. Using Caltrans' *Smart Mobility 2010: A Call to Action for the New Decade*, the proposed project site is identified as a Close-In Compact Community where community design is moderate and regional accessibility is strong.

Given the place, type and size of the project, the DEIR should include a robust Transportation Demand Management (TDM) Program to reduce VMT and greenhouse gas emissions from future development in this area. The measures listed below have been quantified by California Air Pollution Control Officers Association (CAPCOA) and shown to have different efficiencies reducing regional VMT:

- Addition/ Increase in number of affordable housing units in project;
- Orientation of projects towards non-auto corridor;
- Location of projects near bicycle network;

- Incorporation of bicycle lanes in street design;
- Pedestrian network improvements;
- Traffic calming measures;
- Implementation of a neighborhood electric vehicle (EV) networks, including designated parking spaces for EVs;
- Limiting parking supply;
- Unbundled parking;
- Implementation of Urban Non-Motorized Zone(s);
- Market price public parking;
- Ridesharing programs, Commute Trip Reduction programs, bike sharing programs;
- Transit and trip planning resources such as commute information kiosks;
- Real-time transit information system;
- Transit access supporting infrastructure (including bus shelter improvements and sidewalk/ crosswalk safety facilities);
- VMT Banking and/or Exchange program; and
- Bike parking near transit facilities.

Using a combination of strategies appropriate to this location can reduce VMT, along with related impacts on the environment and State facilities. TDM programs should be documented with annual monitoring reports by a TDM coordinator to demonstrate effectiveness. If the project does not achieve the VMT reduction goals, the reports should also include next steps to take in order to achieve those targets.

Please reach out to Caltrans for further information about TDM measures and a toolbox for implementing these measures in land use projects. Additionally, Federal Highway Administration's Integrating Demand Management into the Transportation Planning Process: A Desk Reference (Chapter 8). The reference is available online at: http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf.

Transportation Impact Fees
We encourage a sufficient allocation of fair share contributions toward multimodal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT. Caltrans welcomes the opportunity to work with the City and local partners to secure the funding for needed mitigation. Traffic mitigation- or cooperative agreements are examples of such measures.

Please identify in text and graphics existing and proposed improvements for the pedestrian, bicycle, and transit networks. The City should estimate the cost of needed improvements, expansion, and maintenance for the Plan area, as well as identify

viable sources of funding, correlated with the pace of improvements, and a scheduled plan for implementation along with the DEIR.

Lead Agency
As the Lead Agency, the City of San Mateo is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Equitable Access
If any Caltrans facilities are impacted by projects with the General Plan area, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

Encroachment Permit
Please be advised that any permanent work or temporary traffic control that encroaches onto Caltrans' ROW requires a Caltrans-issued encroachment permit. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating Caltrans' ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement. Your application package may be emailed to D4Permits@dot.ca.gov.

Please note that Caltrans is in the process of implementing an online, automated, and milestone-based Caltrans Encroachment Permit System (CEPS) to replace the current permit application submittal process with a fully electronic system, including online payments. The new system is expected to be available during 2022. To obtain information about the most current encroachment permit process and to download the permit application, please visit https://dot.ca.gov/programs/traffic-operations/ep/applications.

"Provide a safe and reliable transportation network that serves all people and respects the environment"
Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email LDR-D4@dot.ca.gov.
Sincerely,
MARK LEONG

District Branch Chief
Local Development Review
c: State Clearinghouse

Mr. Dahl,
I am a 50 year resident of Fairfax Avenue and I am writing to encourage the city to designate Baywood as an historic district so that the character of the neighborhood can be preserved.
Thank you.
Jeanne Bosschart
350 Fairfax Avenue

Sent from my iPad

Laurie and Randy Hietter
223 Irving Street San Mateo, CA 94402
lauriehietter@gmail.com

February 8, 2022

Mr. Zachary Dahl, Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

Dear Mr. Dahl:

We are pleased to participate in the City of San Mateo General Plan Update Environmental Impact Report (EIR) process, as requested in the Notice of Preparation (NOP) for the EIR. Please accept the following comments on specific issues to include and address in the scope and content of the General Plan Update and EIR.

HISTORIC RESOURCES

San Mateo and its charming neighborhoods built in the 1920s and 1930s have been a draw for our family since we were children living in Redwood City. No trip to Hillsdale was complete without a cruise up Parrott Drive to admire the classic architecture and beautiful gardens of Baywood Park, as the subdivision was named in 1927. Our visitors never fail to admire the great architecture and gardens of Baywood, and other historic neighborhoods in the city.

There are currently five homes proposed for demolition in Baywood. The demolition and proposed new homes that do not respect the historic nature of the neighborhood is alarming to me and my neighbors who value our neighborhood.

San Mateo has not addressed historic districts in San Mateo since 1989 even though National Register of Historic Places-eligible historic districts were identified during the 1989 *Historic Building Survey Final Report.* Historic resources are an important issue for the General Plan Update and EIR.

Historic Background and Existing Conditions

The *2018 San Mateo Existing Conditions Report Parks, Recreation, and Cultural Resources* report does not adequately describe existing historic resources and districts. The report does not recognize or identify the many historic districts in San Mateo that were described in the 1989 Downtown *Historic Building Survey Final Report* and called out by the California State Office of Historic Preservation (OHP) in their 1990 letter commenting on the report.

The 1989 *Historic Building Survey Final Report* states the area west of El Camino:

> "Many neighborhoods were well established and exhibited a fine range of historically important architectural styles. San Mateo Park, Baywood Knolls, and parts of Aragon in particular have a rich assortment of architectural styles dating from 1900 to 1939. San Mateo Park, Baywood Knolls, and parts of Aragon in particular have a rich assortment of architectural styles dating from 1900 to 1939.
>
> Early in the survey process, it became apparent that the most sensible approach to surveying these areas was to document various neighborhoods as historic districts (using the same methods applied in Hayward Park's Glazenwood). While this process is simpler than documenting single properties, the task of surveying over 2,000 buildings (the combined number in these areas), proved beyond the scope of this one year project. Although zoning remains primarily R-1 west of El Camino Real, dramatic changes to historically intact neighborhoods can occur with subdivisions of larger existing lots, remodelings, and expansions. Thus, long-range preservation goals in San Mateo might include future study of these neighborhoods as either local or National Register Historic Districts."

In 1990, the California State Office of Historic Preservation (the state agency responsible for identification, evaluation, registration, and protection of California's irreplaceable cultural and historic resources resources) wrote to the Mayor of San Mateo with comments on the 1989 *Historic Buildings Survey Final Report* and characterized neighborhoods west of El Camino as containing:

> "…at least two huge (500+ resources) Register[1]-eligible residential districts in the areas….Because of the undocumented districts, certain types were underrepresented in the inventory, viz., large houses ca. 1910-1930 and houses ca. 1930-1940. In addition, apartment buildings may need further attention, even though several appear in the inventory."

The City has not yet conducted the necessary survey to formally identify the historic districts. With the General Plan update process underway, now is the ideal time to conduct the necessary historic surveys and identify the historic resources and districts in San Mateo. The study must be conducted to adequately evaluate effects of the intense growth proposed in the General Plan and the dramatic changes that will occur over the next 20 years.

Effects to Historic Resources and Districts

San Mateo's historic neighborhoods attract residents and visitors alike, but are in danger due to the piecemeal demolition of these homes in these neighborhoods without adequate environmental review and public notice under the California Environmental Quality Act.

[1] California Register of Historical Resources

Baywood residents have recently mobilized to express their opposition to demolishing these historic homes and their desire for the City to preserve and protect the historic homes and protect the historic integrity of the neighborhood. Dozens of Baywood neighbors have written the City Council to request the City identify the many historic resources and districts in the City before additional homes are lost to demolition.

A thorough historic resources survey has been performed in many Peninsula cities, including Burlingame. The General Plan update must identify the resources in order to identify effects and mitigation measures for the significant effects that will surely occur with such intense development proposed in the General Plan and expected through AB 9 and 10. The City should identify stronger policies and design guidelines that truly protect our historic neighborhoods.

Request for Historic Resources Workshop

Historic resources have been an ongoing issue in San Mateo and will continue to be an issue of concern. Dozens of my neighbors have written the City Council and expressed interest in historic preservation in San Mateo. I request a General Plan EIR workshop to address the scope, methodology, and potential mitigation measures for the historic resources sections of the General Plan and EIR.

NOP COMMENTS AND SCOPING REPORT

It is critical that the voices of residents be heard in this General Plan Update process. Is the City planning to prepare a Scoping Report to identify issues raised in response the NOP? It is a useful tool that would help residents understand the comments other residents have made regarding the scope of the EIR, and clearly show comments were accurately captured. The Scoping Report should be available on the City website, and interested parties notified when it is available. The EIR should describe how the city will track NOP comments to clearly show how comments are addressed in the EIR.

HOUSING

The General Plan and EIR should describe how the City will address SB 9 and 10 and their resulting changes in the existing conditions in the City, including increased density, traffic, loss of green space and wildlife habitat, water use, wastewater capacity, school capacity, etc.

How will the city reconcile the long-standing public support for Measure Y with SB 9 and 10 and the wide-ranging impacts they will have on established residential neighborhoods?

SUMMARY

I have lived in San Mateo since 1980 and my husband since 1988. The historic homes and neighborhoods with architectural integrity are key aspects of what makes San Mateo special. We are continually dismayed to see so many classic, historic homes being out right demolished or remodeled to contemporary styles (or worse) without respecting the surrounding neighborhood styles. The San Mateo policies and design guidelines specify protection of neighborhoods and historic resources but do not seem adequate to protect these resources.

We look forward to participating in a workshop on historic resources, reviewing a Scoping Report, and seeing how our comments are addressed in the EIR. Please include our contact information in the General Plan and EIR mailing list. Thank you for your consideration.

Sincerely,

Laurie and Randy Hietter
223 Irving Street
San Mateo, CA 94402
lauriehietter@gmail.com

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

January 25, 2022

Zachary Dahl
City of San Mateo Community Development Department
330 West 20th Avenue
San Mateo, CA 94403

Re: 2022010160, City of San Mateo General Plan Update Project, San Mateo County

Dear Mr. Dahl:

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.

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

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 (http://ohp.parks.ca.gov/?page_id=1068) 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: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

Dear Mr. Dahl,
I want to urge the City of San Mateo to identify and protect our historic neighborhoods. San Mateans can be proud of how many special neighborhoods are found throughout our city, each with its own unique character and charm.

Although many historic districts were recognized in a 1989 study and by the State Office of Historic Preservation, San Mateo has not followed through with identifying, evaluating and protecting these districts. Now is the time for the City to address this need.

With the General Plan under review, documenting historic Baywood, Aragon, San Mateo Park, Hayward Park, North Central districts for the Draft EIR is more important than ever!

As Deputy Director of Community Development, you have both the opportunity and the responsibility to draft, complete and enact policy that will ensure San Mateo's beautiful past is not forgotten or destroyed in the name of "progress."

Sincerely,
Nancy Weller
323 Virginia Ave.
San Mateo

Dear Mr. Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

SUBJECT: Comments responding to San Mateo General Plan EIR Notice of Preparation (NOP)

Dear Mr. Dahl:

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. Please include the following in the program-level EIR:

1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.

2. Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.

3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you for your consideration.

Sincerely,

Tracey E. Lee

traceyelee@gmail.com

335 Fairfax Ave.

Hello Zachary,

We have lived in Aragon and Baywood since 1972. Obviously, we love the neighborhoods and have enjoyed living in San Mateo. One reason I live here is because of the lovely old buildings on B Street in downtown, and the older homes with Mediterranean or Tudor or art deco architecture in the Aragon and Baywood districts, as well as the Victorian style homes in the North Central neighborhood. I truly think these older commercial buildings and homes should be valued and protected by the City. (However,k one thing that should be considered is the signage permitted on B Street; often it distracts from the architecture of the buildings).

If you think about towns in California and all over the world, isn't it the towns with restored and vibrant downtowns and lovely older homes that are lively, walkable, enjoyable places to live and visit?

San Mateo has changed a lot since we first moved here. Many changes have been good; some not so good. I do not oppose increased housing. We need to build more housing if we want our children to live here and if we want people in the service industry to be able to live here. But I don't think the building of additional housing and the preservation of the older buildings and neighborhoods are opposed. Housing can be built along transportation corridors, such as El Camino Real, and the older neighborhoods can be preserved.

Thank you.

Peggy

Peggy Berlese
Herzig & Berlese
414 Gough Street, Suite 5
San Francisco, CA 94102
415-861-8800

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Thank you.

Peggy

Peggy Berlese
Herzig & Berlese
414 Gough Street, Suite 5
San Francisco, CA 94102
415-861-8800

Dear City Council-

I am excited the City is working on a new General Plan, as I believe we are at a critical time in our great City's development.

Of course there is a huge need to determine the growth and direction of our retail, office and housing base while being realistic about the potential to achieve any set goals, including the timing to affect any changes and the social and economic cost to do so.

Change and growth is both necessary and almost certain to happen no matter what we do, so guiding that change and growth is critical to ensure it happens in a manner that benefits our populace including considerations for traffic, parking, pollution, crime, and aesthetics.

I was born at Peninsula Hospital and grew up in San Mateo until I was 9 years old, then moved to Hillsborough. Since 1996 I have lived back here in San Mateo and love all it has to offer including the downtown retail (which has great potential), proximity to the freeways, schools, library, parks, and housing base.

We live in a 1928 vintage Spanish Mediterranean home which has been modernized over the years, yet retains the original Spanish tile façade accents, interior and exterior wrought iron details, arches, Spanish tile roof, tile courtyard, and many other irreplicable features that come with these historic homes.

As you know there are many historic districts in San Mateo, including Baywood, Aragon, San Mateo Park, Glazenwood, Hayward Park, and North Central.

Unfortunately, many districts have not been formally recognized by the City, though my understanding is they were identified in the 1989 Downtown historic study and have been recognized by the State Office of Historic Preservation.

Without this recognition I and many of my neighbors are concerned we will lose a great deal of this historic base and charm that makes San Mateo a wonderful place to live.

If residents and developers can entirely tear down or materially demolish/renovate these architectural masterpieces they will do so, and we will no longer have a city filled with these gems.

I believe the City must identify and protect these historic districts and resources by identifying policies that allow for the identification, evaluation and protection of these structures and that these actions must be considered in the Draft EIR for the General Plan.

Simply increasing the housing base without these considerations will clearly have an adverse effect on our historic resources and districts throughout the great city of San Mateo.

Thank you for your time and attention on this enormous task that clearly will shape our wonderful City for the next century.

Roger

Roger Oser

533 Edinburgh Street
San Mateo, CA 94402
t 650-358-5262
m 408-472-6888
Roger.Oser@nmrk.com

Dear Mr. Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

SUBJECT: Comments responding to San Mateo General Plan EIR Notice of Preparation (NOP)

Dear Mr. Dahl:

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. Please include the following in the program-level EIR:

1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.
2. Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.
3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.
4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you for your consideration so that we may preserve the San Mateo's historic beauty and character.

Sincerely,
Shana Larson, resident of Baywood

Dear Mr. Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California. 94403

SUBJECT: Comments responding to San Mateo General Plan EIR Notice of Preparation NOP

Dear Mr. Dahl,

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General plan 2040. Please conduct and include the historic survey of San Mateo and develop policies to protect our historic neighborhoods.

The Valladres family has lived in the beautiful Baywood neighborhood for 36 years. This is our dream city and home. My husband and I grew up in San Francisco and we dreamed one day we could live in San Mateo and raise our future family. We fell in love with San Mateo and all the historical neighborhoods. Baywood, Aragon, San Mateo Park, Glazenwood, Hayward Park, North Central,etc. All these neighborhoods and districts need to be recognized and preserved now. These truly unique and treasured neighborhoods are an integral part of San Mateo's history, culture, diversity, charm, success and future.

The amazing book, ``SAN MATEO A CENTENNIAL HISTORY' by Mitchell P. Postel, published in 1994 chronicles our great and ambitious city. Think of all the brave men and women who settled here and had a vision like no other to create our beloved San Mateo.
The City should identify policies that allow for the identification, evaluation, and protection of historic districts. Please consider project alternatives that will avoid negative impacts to these neighborhoods. These actions must be considered in the Draft EIR for the General Plan.

We hope that you will consider our passionate concerns and understand how we feel about our cherished history and loyal communities.

Thank you for your consideration,

Sincerely,

Jill Valladares and family
374 Fairfax Avenue
San Mateo California 94402

Mr. Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

SUBJECT: Comments responding to San Mateo General Plan EIR Notice of Preparation (NOP)

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3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

We also must add that we chose to live in Baywood more than 20 years ago because of the architectural unity of the neighborhood, among other elements. This appreciation rubbed off on our daughter and son-in-law, who bought a house in the Historic Irvington District of Portland. The neighborhood is a source of pride to the entire city of Portland. It's beautiful, has the same type of community spirit as Baywood, and has changed gracefully with the times. We just visited and were amazed at the amount of remodeling and construction taking place in the neighborhood. It's happening in a controlled and considerate manner that seems to be serving everyone's needs. It's also interesting that these vintage homes created a niche of architects and contractors who specialize in historic home construction. Change is inevitable, but Irvington shows that it can happen beautifully, without conflict. (Property values in Irvington also increase at a faster rate than in the rest of Portland.)

We hope these points resonate with you. Thank you for your consideration.

Sincerely,

Bruce and Rita Armstrong

To: Zachary Dahl, Deputy Director
San Mateo Community Development Department

Re: Notice of Preparation for General Plan Update Draft EIR

Dear Mr. Dahl,

San Mateans for Responsive Government submits the following comments as part of the scoping for the EIR for the General Plan update. We urge the city to ensure that all of these issues are adequately addressed in the EIR as well as providing comprehensive alternative analyses that can reduce the negative impacts.

First and foremost, **all parts of the General Plan Update should comply with voter approved Measure Y** before it is adopted by the City Council. The EIR needs to address how any discrepancies in the various scenarios will be addressed and reconciled. If they are not to be reconciled, the EIR should describe the legal basis on which the updated General Plan can be adopted in contravention of the provisions of Measure Y.

Furthermore, the content and scope of an adequate General Plan EIR must also have an in-depth analysis of the potential impacts of SB 9 and SB 10 for all R-1 zoned areas in San Mateo "whether or not they are in a Study Area." The increased population resulting from the state-enabled conversion of single-family lots to multi-family will have significant impacts on all of the environmental topics that will be examined in the EIR and must be evaluated.

In each element's evaluation, we are looking for **locally derived data-backed specific**s, rather than broad brush statements that whatever scenario is chosen, the city or other agency can meet the additional demand. Unfortunately, broad brush assurances have been common in past environmental evaluations, only to be proven woefully inadequate as projects are developed. Internal departments like police and fire, and external entities like Cal Water and the school districts respond that they can meet whatever the increased demand for services. **Specifically how, on what timeline and at what cost to San Mateo's residents and businesses will that be done?**

Our comments often require evaluation in multiple elements of the EIR. Information in one section will inform comments and evaluations made in another. We expect that the city will require the necessary coordination of information across elements.

Our specific issues:

Infrastructure Demands

What population are our existing facilities like sewer, water supply and solid waste disposal designed to accommodate? Identify what other communities are served by the San Mateo sewer plant and their projected growth impacts. Identify how potable water will be available for the increased state population projections, especially factoring in continuing drought conditions and at what cost.

What population can our existing police and fire services (both staffing and equipment) accommodate? How will an increased number of taller buildings and increased density affect fire and police services, especially through their equipment needs? Relate any new fire equipment and emergency services demands to specific changes in heights and density. What will be the budget impacts for providing any additional services?

Green Environment

The green environment in our city will be affected by increased growth. This can be through a **loss of trees** - especially heritage trees- which affects air quality, climate, aesthetics, and more. How will they be protected? **Park facilities** also provide that green environment. When asked about how more park land can be provided for a greatly increased population, consultants' answers rely on larger projects being required to provide private open spaces. That response is not acceptable, since it is likely to be the increased population in smaller developments, units from lot splits, ADUs etc. that will have a big impact on population. Data and specifics please on how the city will achieve its park acreage goals.

Vehicle Miles Traveled

Many residents, and many city leaders are pushing to get people out of their cars by **greatly reducing vehicle ownership and/or usage, lower Vehicle Miles Traveled (VMT) etc**. by putting more dense development near transit. And people talk about doing that in tandem with reducing parking, so people just give up driving. Most San Mateans are skeptical that this approach will work. **We need much better local data to evaluate the decisions around such major changes**.

The current situation at the Hillsdale Garden Apartments is a perfect case study for how people who find it almost impossible to park, and who have a very well served Caltrain station and several major SamTrans lines well within walking distance, just don't get the message to get rid of their cars. Historically, Hillsdale Garden Apts were the classic transit oriented neighborhood. Its residents owned few cars and used Caltrain often Why have transit patterns ther changed so much?

The EIR should include a targeted/doorstep/sidewalk survey of people who live in the Apartments (plus in a similar situation, if the city can think of another one) to ask about vehicle ownership and usage, transit usage etc, and why they do as they do. Residents of most new multi-family developments with reduced parking are still tied to owning and using vehicles, resulting in increased, spill-over parking off site, negatively impacting adjacent neighborhoods. Factors such as working double and triple jobs at odd hours, needing access to frequent medical treatment, to recreation, to school, soccer and

music lessons for children, trips to larger supermarkets and Costco; etc., all of which cannot be accommodated via transit might be uncovered. **The EIR must look for facts about how people really live to direct policies about land use, circulation, transportation and the provision of parking.**

When people do give up driving their cars (or give them up altogether) they do it by stitching together other ways to support their needs. Uber/Lyft/taxis/helpful neighbors make the extra trips to get them places. These **still result in VMT - just not in their own car**. And there are all of the delivery trucks which are much more prevalent in the neighborhoods, delivering all of those items that people may no longer drive to the store to get themselves. There are more of those trucks than many realize, since some companies have expanded their fleets with "anonymous" white vans, etc. There are even bigger mail trucks now. Again, the purchase still results in VMT. And then there are all of the Door Dash, etc. food deliveries, when people can't or don't go out to restaurants. **All of those substitute VMTs need to be captured**.

Walking to Transit

The city (and others) use 1/2 mile as a metric for walking to transit. The city posts a 1/2 mile map on its website, which was created in 2017 to address the 1/2 mile impact for creating ADUs. If anything in the General Plan is going to depend on that kind of metric, a much more refined map needs to be created. Simply drawing circles around identified transit stops (including bus stops that may no longer even be served by SamTrans) and calling that the 1/2 mile to transit-assumes that people can travel in a straight "as the crow flies" manner. Swim across Marina lagoon? Walk across Highways 101 or 92? **The EIR needs a map showing true 1/2 mile walks to existing and likely to continue to exist transit stops.** Such a map will show where the true transit deserts are.

Additionally, the EIR needs a map to designate the slopes on all of our streets, so that the hillier, more difficult parts to walk or cycle are readily apparent. For example, a large part of planning area 6 (Laurelwood shopping and Campus Drive) is already acknowledged to be a transit desert, even on the existing map. And for the parts that are supposedly near transit, one must hike up Hillsdale Blvd. to Clearview Way to catch a bus. This is completely infeasible for a large part of our population.

How will the EIR address the fact that **the city has no control over the routes that SamTrans continues to operate or decided to drop**? The built environment is depending on a very unstable premise when we include SamTrans stops for transit planning, especially away from ECR.

Natural Disaster Planning

Wildfires are an increasing issue, unfortunately now year round. In the General Plan workshops, this was dismissed as probably only affecting area 6 (Laurelwood shopping area). Do wildfires, once they get going and particularly blowing in the accompanying high winds, only affect the closest adjacent areas? The people in Coffee Park and other parts of Santa Rosa learned how disastrous that assumption can be. All of San Mateo is vulnerable if a wildfire gets going in our hills. That type of situation was cited as the

Poway decision, where the environment can change the project, rather than the usual vice versa.

What kind of emergency evacuation plans will the city have for its residents? Especially if we have concentrated people near transit (which will not be operating during a wildfire) and have succeeded in getting them to give up vehicle ownership. How do they stay safe when the city has put them in a situation where they have no independent transportation?

Noise

Noise will increase with increased population, especially resulting in traffic - from any source. Will electrification create more noise and will the elevated electric train tracks carry train noise even further? If buses increase, how does that affect noise? Add in the substitute VMTs (see above) and those who continue to drive themselves. With significant increase in population and jobs here, we will quickly exceed our 60db noise standards for residences. The people at the MidPen development at ECR and 29th routinely complain to the city about the maintenance noise - gardeners, Recology trucks etc that serve the mixed uses around them. How will we deal with that problem as we densify near transit (and elsewhere). Just changing the standards to say it is not a problem, is not acceptable EIR evaluation. There should be a scientific basis provided for how acceptable various levels of noise, for what periods of time and at various times of day, are. A loud Recology truck that comes multiple times a week at 5:30 AM is not the same impact as one weekly trip at 9AM, and the EIR should reflect that.

Lifestyle Choices

Under population and housing, I don't know how to capture this factor, but we all "know" that there are **people who want a specific lifestyle** - especially with a young growing family. They will commute great distances to have a quiet residential setting - the traditional American Dream of a detached single family house with yard, good parks, good recreation, good schools, etc.

Intense building near transit will not lure these people back, even if the housing would be for the same price. It is not the lifestyle they want. Can the EIR identify people who choose to live at a distance, at least at this phase of their family life, to better include their impact on housing, land use and transportation/circulation/VMT? Start at the centers of employment - even the city's employees - to find these long commuters and their reasons. And make an effort to get beyond simple answers like it being "cheaper" to live at a distance. Look for lifestyle choices, too.

Historic Resources

You have already received comments urging **a proper historical survey of the city**, and we support those requests. This survey is needed especially for areas that have already been indicated as likely eligible for listing as historic districts. This is already a policy in the current General Plan and was an effort that the city began, and then dropped, some years ago. It is an unfulfilled promise to keep our city's history an important part of what San Mateo offers its residents and businesses, and one this EIR needs to address.

Program Level EIR / Project Level EIR Relationship

We request that the city make it explicitly clear just **how this EIR will be used for any future projects**. The General Plan EIR has been described as a general program-level EIR, with supplemental environmental and design review occurring as each specific project is proposed. Larger neighborhood, district and citywide issues can be handled at this program level, so individual project proponents can be made aware as to how broader issues will affect their proposals. Residents should clearly understand what additional CEQA or design reviews will be undertaken for future, specific projects that directly affect them and their community.

Please contact me, on behalf of San Mateans for Responsive Government, if you have any questions about these comments.

Thank you for your coordination of this important effort.

Michael Weinhauer
San Mateans for Responsive Government
limitheights2018@gmail.com

Dear Deputy Director Dahl,

The irreparable destruction of our historic neighborhoods recently hit our family directly when we saw the plans at 415 Fairfax Drive where investors purchased a wonderful historic home only to be convinced by their architect to tear it down and build a 5K square foot monstrosity in its place. Many of us have lived in the historic Baywood neighborhood for decades and invested much of our lives and savings into our homes to keep them in keeping with the history and architecture here. It is incredibly distressing to witness a Planning Commission that is clearly more interested in maximizing profits for themselves and their friends in the building industry rather than protecting the historical gems in our community. The reckless abandon in which large ADUs, many larger than the original houses, are being haphazardly approved is especially stressful.

Related to all of this is the proposed content and scope of the EIR for San Mateo's General Plan 2040. We are concerned that historica homes and districts will be skimmed over in this plan. I urge you to please include the following in your study:

- An evaluation and prioritization of project alternatives that will protect our historic resources in the community.
- Protection of know, even if yet undocumented, historic districts in residential areas across San Mateo, including west of El Camino and specifically including the historic home at 415 Fairfax Drive.
- An updated historic resources survey / inventory that identifies San Mateo's historic resources, both individually and collectively as districts.
- A plan to address the impacts of projected population growth on our historic resources.
- Protection against investors and architects who are so easily navigating the loopholes in the system so that they can personally profit while doing harm to the neighborhoods.
- An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.
- A summary of comments received in response to the NOP so the public can understand the issues before the DRAFT EIR is published.

Thank you for your consideration,
Steve McKay
Citizen, San Mateo

Dear Mr. Dahl:

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. Please include the following in the program-level EIR:

1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.

2. Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.

3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you for your consideration.

Sincerely,

Christine Jeck

Zachary,

You have asked for comments regarding he above proposed content and EIR for San Mateo's General Plan 2040. I would appreciate your including my comments that.

I have been a forty one year resident of Baywood Knolls and want you to know that I appreciate all of San Mateo's neighborhoods. The uniqueness and in some areas the historic nature of the different areas of San Mateo is what makes it a special place to have lived and raised may children. I would hope that in the above EIR you will take this into account as well as making sure that any specific aspects of San Mateo's historic areas are protected from development that would change the nature of our city. Avoiding the negative impacts of SB9 and SB10 on what makes San Mateo special should be of utmost importance.

Lastly, I would hope that a summary of comments that are received would be made available to the public before a draft EIR is published.

Thank you,

Dennis Tietz

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

February 10, 2022

Mr. Zachary Dahl
City of San Mateo
330 West 20th Avenue
San Mateo, CA 94403
zdahl@cityofsanmateo.org

Subject: City of San Mateo General Plan Update, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2022010160, City and County of San Mateo

Dear Mr. Dahl:

The California Department of Fish and Wildlife (CDFW) reviewed the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) for the City of San Mateo General Plan Update (Project).

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines § 15386 for commenting on projects that could impact fish, plant, and wildlife resources (e.g., biological resources). CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as a California Endangered Species Act (CESA) Incidental Take Permit (ITP), a Native Plant Protection Act (NPPA) Permit, a Lake and Streambed Alteration (LSA) Agreement, or approval under other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources.

PROJECT LOCATION

San Mateo is located in the San Francisco Bay Area in Northern California. It is bordered by the San Francisco Bay and City of Foster City to the east, the City of Burlingame and Town of Hillsborough to the north, the City of Belmont to the south, and the Town of Hillsborough and unincorporated San Mateo County to the west. Major interstates and State routes include Highway 101 and California State Routes 92 and 82.

PROJECT DESCRIPTION

The City of San Mateo is preparing comprehensive updates to its existing General Plan. The update is expected to be completed in 2023 and will guide the City's development and conservation through 2040. The General Plan Update will include revisions to the policies and land use map of the existing General Plan. The updated General Plan will include all State-required elements, and an optional element, Urban Design.

The overall purpose of the General Plan Update is to create a policy framework that articulates a vision for the City's long-term physical form and development, while preserving and enhancing the quality of life for San Mateo residents. The key components of this Project will include broad community goals for the future of the City of San Mateo and specific policies and implementing actions that will help meet the goals. The General Plan Update will add new and expanded policy topics to address the current requirements of State law, modernize the City's policy framework, and address land use mapping issues and inconsistencies. To achieve the General Plan vision, the City has analyzed three alternatives for ten Study Areas that were developed through an extensive public process. The Study Areas include areas near transit; areas where current buildings are aging, vacant, or not maintained; or areas where property owners have expressed interest in considering redevelopment of the property. The Study Areas are the locations where the majority of growth is projected to occur; however, changes could still occur outside of these areas.

ENVIRONMENTAL SETTING

The draft EIR should provide sufficient information regarding the environmental setting ("baseline") to understand the Project's, and its alternative's (if applicable), potentially significant impacts on the environment (CEQA Guidelines, §§ 15125 and 15360). CDFW recommends that 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 but not limited to all rare, threatened, or endangered species (CEQA Guidelines, § 15380). The draft EIR should describe aquatic habitats, such as wetlands and/or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site.

The special-status species that have the potential to occur in or near the Project site, include, but are not limited to:

Common Name	**Scientific Name**	**Status**
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*	FT
Western burrowing owl	*Athene cunicularia*	SSC
California Ridgway's rail	*Rallus obsoletus obsoletus*	FE, SE
California black rail	*Laterallus jamaicensis coturniculus*	ST
American peregrine falcon	*Falco peregrines anatum*	SP

Western bumble bee	*Bombus occidentalis*	SC
Salt-marsh harvest mouse	*Reithrodontomys raviventris*	FE, SE
San Francisco gartersnake	*Thamnophis sirtalis tetrataenie*	FE, SE, SP
San Mateo woolly sunflower	*Eriophyllum latilobum*	FE, SE, SR
San Francisco owl's-clover	*Triphysaria floribunda*	SR
Arcuate bush-mallow	*Malacothamnus arcuatus*	SR
Longfin smelt	*Spirinchus thaleichtys*	FC, ST
San Francisco collinsia	*Collinsia multicolor*	SR
Western leatherwood	*Dirca occidentalis*	SR
Franciscan onion	*Allium peninsulare* var. *franciscanum*	SR
Acuate bush-mallow	*Galactosamines arcuatus*	SR
Nesting birds Bats Plants Aquatic species Terrestrial species		
Notes: FT= federally threatened under ESA; FE = federally endangered under ESA; FC = federal candidate for federal listing under ESA; SE = state endangered under CESA; ST = state threatened under CESA; SC = state candidate for state listing under CESA; SSC = state species of special concern; SP = state listed as fully protected; SR = state rare under the Native Plant Protection Act		

Habitat descriptions, and the potential for species occurrence, should include information from multiple sources: aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; and findings from positive occurrence databases such as California Natural Diversity Database (CNDDB). Based on the data and information from the habitat assessment, the draft EIR should adequately assess which special-status species are likely to occur on or near the Project site, and whether they could be impacted by the Project.

CDFW recommends that prior to Project implementation, 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://wildlife.ca.gov/Conservation/Survey-Protocols.

Botanical surveys for special-status plant species, including those with a California rare plant rank (http://www.cnps.org/cnps/rareplants/inventory/), must be conducted during the blooming period for all species potentially impacted by the Project within the Project area and adjacent habitats that may be indirectly impacted by, for example, changes to hydrology, and require the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants, and survey report requirements, available at: https://wildlife.ca.gov/Conservation/Plants.

IMPACT ANALYSIS AND MITIGATION MEASURES

The draft EIR should include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the Project (CEQA Guidelines, §§ 15126, 15126.2, and 15358). This includes evaluating and describing impacts such as:

- Encroachments into riparian habitats, wetlands, or other sensitive areas;
- Potential for impacts to special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g., snags, rock outcrops, overhanging banks);
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence; and
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The draft EIR should also identify 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 the impact (CEQA Guidelines, § 15355). Although a project's impacts may be less-than-significant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact, e.g., reduction of habitat for a special-status species should be considered cumulatively considerable.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines direct the Lead Agency to consider and describe all feasible mitigation measures to avoid potentially significant impacts in the draft EIR and mitigate potentially significant impacts of the Project on the environment (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.4, and 15370). This includes a discussion of impact avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with CDFW, the USFWS, and the

National Marine Fisheries Service. These measures should be incorporated as enforceable Project conditions to reduce impacts to biological resources to less-than-significant levels.

Fully protected species such as American peregrine falcon and San Francisco garter snake may not be taken or possessed at any time (Fish and Game Code, § 3511, 4700, 5050, and 5515). Therefore, the draft EIR should include measures to ensure complete avoidance of these species.

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA ITP must be obtained if the Project has the potential to result in take[1] of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a 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 to obtain a CESA ITP.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially restrict the range or reduce the population of a threatened or endangered species (Pub. Resources Code, §§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, and 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The Lead Agency's FOC does not eliminate the project proponent's obligation to comply with CESA.

Lake and Streambed Alteration Agreement

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting rivers, 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, washes, watercourses with a subsurface flow, and floodplains are generally subject to notification requirements. CDFW, as a Responsible Agency, will consider the CEQA

[1] Take is defined in Fish and Game Code section 86 as hunt, pursue, catch, capture, or kill, or attempt any of those activities.

document for the Project and may issue an LSA Agreement. CDFW may not execute the final LSA Agreement until it has complied with CEQA as a Responsible Agency.

Migratory Birds and Raptors

CDFW also has authority over actions that may disturb or destroy active nest sites or take birds. Fish and Game Code sections 3503, 3503.5, and 3513 protect birds, their eggs, and nests. Fully protected bird species may not be taken or possessed at any time (Fish and Game Code, § 3511). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDB. The CNNDB online field survey form and other methods for submitting data can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). 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.

If you have any questions, please contact Mr. Will Kanz, Environmental Scientist, at Will.Kanz@wildlife.ca.gov; or Wesley Stokes, Senior Environmental Scientist (Supervisory), at Wesley.Stokes@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

cc: State Clearinghouse (SCH No. 2022010160)

1. Dear Mr. Dahl:

   I am writing regarding the proposed content and scope of the EIR for San Mateo's general plan 2040. I would like to request that you include the following in the program-level EIR:

   1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.

   2.Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.

   3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

   4. A summary of comments received in response to the NOP so the public can understand the issues before the draft EIR is published.

   Thank you for your consideration.

   Sincerely,

   Elvira Auerweck

   346 FRanklin Street

Notwithstanding my strong disagreement with Sacramento's heavy-handed, one size fits all approach to housing, I understand that you and the City of San Mateo need to follow the rules as they currently exist. That doesn't mean, however, that the things that make San Mateo a great place to live need to be sacrificed to the altar of expedient housing growth.

San Mateo is unique in the Bay Area in having several historic neighborhoods that have been largely maintained (as opposed to Burlingame and its McMansion approach to zoning, or newer cities that lack much in the way of historical housing). Let's be honest, we can ruin these neighborhoods by blindly following YIMBY housing policies, but doing so won't make a dent in the overall housing needs. Ruining historic neighborhoods would, however, succeed in destroying the very thing that makes the neighborhoods so desirable. In addition to alienating the current residents of these historic neighborhoods, their destruction could have a longer-term impact on property values and therefore tax revenues.

Before making any long-term decisions, I would strongly encourage you to complete a historic survey of San Mateo and work to preserve the historic neighborhoods to the maximum extent possible. Again, historic neighborhoods can be ruined and the overall housing picture won't be notably improved. Let's be smart about planning for the future of the city, in a way that both preserves existing historical resources and provides housing for future growth.

Thank you for your consideration of my concerns.

Glenn Voyles
421 Fairfax Avenue

Please protect our neighborhoods and stop the overbuilding in San Mateo.
People are leaving our state not entering it.
Thanks you.
JoAnne Kiefus, 300 Jackson.

JoAnne Kiefus

Dear Mr. Dahl

I'm writing to you about the San Mateo General Plan update and EIR.

The General plan update proposes 30-50% growth. I fear that level of growth will result in many demolitions, remodels, and additions that will have a significantly negative impact on historic districts and resources. This growth will likely erase the character of historic neighborhoods and disrupt the nature of the relationships between homeowners that holds them together.

Please consider significantly lower growth levels, such as 10-20% maximum.
Also, please complete the historic neighborhood and home surveys before completing the draft EIR to understand how growth will impact them.

Thank you,

John Hietter
223 Irving Street
San Mateo, CA 94402

Mr. Dahl,

This letter is a public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. As a homeowner of a vintage 1930 home on Parrott Drive in Baywood, I strongly encourage that the City makes genuine efforts to preserve this beautiful and historic neighborhood. It is truly a jewel of this City and of San Mateo County and the loss of its character would be tragic. It is our history that defines us, and not only Baywood, but also other historic neighborhoods must be preserved as the City plans for growth.

Please include the following in the program-level EIR:

1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented, historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.
2. Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.
3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.
4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you.

Best regards,

Karen Vitale
Homeowner
478 Parrott Drive, San Mateo 94402
karenvitale@comcast.net

February 10, 2022

Zachary Dahl, Deputy Director
Community Development Department
City of San Mateo
330 West 20th Ave.
San Mateo, CA 94403

Subject: Notice of Preparation (NOP) of Draft Environmental Impact Report (EIR)
Lead Agency: City of San Mateo Community Development Department
Project Title: San Mateo General Plan Update

Dear Mr. Dahl:

Since my first letter to you on this subject (January 17, 2022), I have become aware of new information that was not apparent to me at the time, but which I address below. The ***Land Use and Circulation Alternatives Evaluation*** (City of San Mateo, January 14, 2022) states, "the ten Study Areas are the locations where the most growth is projected to occur; however, changes could still occur outside those areas. The General Plan will allow for continued growth outside of the Study Areas based on existing densities, regulations and state law."

Elsewhere in the evaluation report, it states, "The alternatives presented in this workbook do not propose a change to properties zoned R-1 (One-Family Residential) within the city, whether or not they are in a Study Area. However, under SB 9, single-family zoned properties could still accommodate future growth by building a duplex and/or by splitting the lot into two separate lots that would allow two units each."

City staff is currently in the process of implementing SB 9, and the City Council recently declared their intention to "explore" adopting SB 10 as a Priority "A" goal for 2022-2023.

SB 9 allows any single family lot to be split into two parcels. SB 10, if adopted, allows ten housing units to be built on each parcel, plus an allowance for two ADUs per parcel. Simple math suggests that it is both possible and plausible that any single family home in San Mateo could be replaced by 24 apartment units.

Potential cumulative impacts of such incursions into established single family neighborhoods are of profound magnitude that will carry wide-ranging and long-lasting environmental, social, economic, and cultural changes deep into the future. Limiting the EIR to only the Study Areas would be irresponsible, fraught with unintended consequences, and leading inevitably to an incomplete and deficient evaluation. The content and scope of an adequate General Plan EIR must have an in-depth analysis of the potential impacts of SB 9 and SB 10 for all R-1 zoned areas in San Mateo "whether or not they are in a Study Area."

It must also include impacts to historic resources, known and potentially known, and which can only become known by conducting a historic resources inventory. Absent an inventory that identifies historic resources, and an evaluation of the impacts SB 9 and SB 10 will have on those resources and the neighborhoods where they are located, the EIR will be inarguably inadequate.

Many individuals, organizations and agencies have submitted written comments. For the sake of transparency, please make all comments available to the public shortly after the submittal deadline and provide notification as to where to access them. Thank you.

Sincerely,
Keith Weber,
San Mateo

Cc: Prasanna Rasiah, City Attorney

Mr. Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

Dear Mr. Dahl:

I am the owner of 359 Fairfax Avenue in the Baywood section of San Mateo. I purchased my home in 2006 and did a major remodel shortly thereafter that preserved the original facade of the house. Many of us in the neighborhood are concerned about changes that may occur in our neighborhood.

My understanding is that you have asked for comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. Many of us would like to include the following in the program-level EIR:

- An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.
- Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.
- An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.
- A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you very much for your time and consideration.

Sincerely,
Kevin Laughlin
650 201 3998

Dear Mr. Dahl,

A brief glance at the *General Plan Land Use and Circulation Alternatives Evaluation* caused me to send these additional comments on the General Plan Update NOP, in addition to my emailed letter of February 8.

I just learned that the three alternatives that will be considered in the General Plan include growth of 30%, 40%, or 52% over the next 20 years (please also consider this a comment on the Alternatives Evaluation report). I was horrified. San Mateo would be unrecognizable. San Mateo's growth has never been anywhere close to these proposed growth rates. The 10-year growth rates since 1980 were 10% or less; the average 10-year growth was 7%. The growth since 1980--40 years--was only 33%. What is the impetus for such massive, unprecedented growth?

These levels of growth are not compatible with the desires of San Mateo residents who voted for Measure Y. The low growth alternative should be on the order of 15% or less. High growth should not be more than 20%.

The growth of San Mateo must be considered in light of the growth in the Bay Area, and the infrastructure necessary for that growth. The infrastructure (water, wastewater, electricity, roads, public transit, bridges, fire, police, schools, airport, etc.) in San Mateo, and the Bay Area, is woefully inadequate to support the proposed levels of growth.

San Mateo infrastructure has not been maintained and it is not clear how the city will pay for the infrastructure needed to support even 30% growth, or the growth that could come due to SB 9 and SB 10. I took Caltrain to San Francisco between 2011 and 2019. The trains and BART were standing room only and now they struggle for funding. The freeways were clogged. Our infrastructure is not adequate to support the proposed level of growth. "Transit-oriented housing" is a cruel hoax. There is no transit for the housing along the corridor.

The General Plan growth will exacerbate the flight from San Mateo and the Bay Area. The proposed level of growth will severely degrade our quality of life in San Mateo.

What or who is driving this vision of growth? It is not the neighbors I speak with or those who voted for Measure Y.

The General Plan Update process is long, complicated, and difficult for non-planners to really understand. It is time-consuming to dig into all the documents, synthesize the information, and compare to previous information. This is important to so many citizens who don't have the time to comment. I am doing my best to inform my community. From my conversations with my neighbors, I feel like I speak for many.

Please do not consider alternatives for growth of more than 15% population increase over 20 years.

Laurie Hietter

Dear Mr. Dahl:

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. please include the following:

1. An evaluation of project alternatives that will ensure that those historic neighborhoods west of El Camino (not yet identified) will receive the proper evaluation and categorization before any decisions are made on shifts for the neighborhood

2. Inclusion of an updated historic resources survey/inventory so that homes and neighborhoods can be properly assessed and impact of projected growth can be properly identified

3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

4. A summary of all comments received to the NOP so we and understand the issues before the Draft EIR is published.

I have been a 30 year resident of San Mateo and a 20 year resident of the beautiful Baywood area. We love the old vintage feel of the neighborhood and are one of many in our neighborhood who worked tirelessly to ensure our remodel fit into the character and elegance of the neighborhood. My husband Neal and I want to ensure the historic nature of these homes are honored.

Thank you!

Ilana Tandowsky
Harvard Road
San Mateo

Dear Mr. Zachary Dahl

Deputy Director

Community Development Department

City of San Mateo

330 West 20th Avenue

San Mateo, California 94403

SUBJECT: Comments responding to San Mateo General Plan EIR Notice of Preparation (NOP)

Dear Mr. Dahl:

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. We have an opportunity to save our history similar to the way many other countries preserve their history by not allowing our historical neighborhood homes to be razed. Our children for generations to come should be able to see and enjoy the historic neighborhoods. Please include the following in the program-level EIR:

1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.

2. Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.

3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you for your consideration.

Sincerely,

Mara Castillo

Dear Mr. Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

SUBJECT: Comments responding to San Mateo General Plan EIR Notice of Preparation (NOP)

Dear Mr. Dahl:

You have asked for public comment on the proposed content and scope of the EIR for San Mateo's General Plan 2040. Please include the following in the program-level EIR:

1. An evaluation of project alternatives that will avoid negative impacts to historic resources in the known, but as yet undocumented historic districts in residential areas west of El Camino Real and throughout other neighborhoods in San Mateo.

2. Inclusion of an updated historic resources survey/inventory that identifies San Mateo's historic resources, both individually and collectively as districts, so that an evaluation of the impacts of projected growth can be adequately addressed.

3. An evaluation of project alternatives that will avoid negative impacts of SB9 and SB10.

4. A summary of comments received in response to the NOP so the public can understand the issues before the Draft EIR is published.

Thank you for your consideration.

Sincerely,

May Lin Cooperstein
216 Harvard Rd.
San Mateo, CA 94402

Dear Mr Dahl:

I am writing to provide my comments, as requested, on the NOP for the General Plan 2040 Environmental Impact Report (EIR).

As you know there is a significant and growing concern among San Mateo residents about San Mateo's historic resources and neighborhood ambiance. Neighbors are concerned that demolition, remodeling, and other developments will gradually transform the neighborhoods to something other than what they chose when the moved here. This concern is not limited to the general plan study areas but to all neighborhoods. We should be able to definitively answer how any proposed changes would impact the history and character of the area under development.

The county and state supported the initial San Mateo historic survey in 1989. The 1989 survey documented ample evidence that sections of San Mateo qualify for historic designations. City staff and councils have never followed up on these findings, despite calls to do so in previous years. It is time to remedy this situation.
It is incumbent on the City to understand the historic assets it has, and to make sensible decisions on what should be preserved and what can change. I believe doing a thorough survey of our historic resources is a minimum requirement. If we don't know what assets we have, how can we protect them from harm? You cannot rebuild an artifact of history!

We need housing but should not blindly destroy icons of our past or sacrifice our common heritage through ignorance or passivity. Please encourage a thorough effort in this aspect of the report.

I am also most concerned about the unprecedented growth as outlined in the alternatives. A growth projection of a fifty percent increase in population will require infrastructure increases of commensurate scale. Do we know if this is even possible? We know our water supply, electric supply and sewage removal are stressed today. Our public transportation will also need significant expansion. What will happen to the environment as we address these limitations to growth? No form of expansion in this area will be without consequence and cost.

Finally, a significant number of people in San Mateo have told me they do not believe public comments are taken seriously. This diminishes the likelihood and effectiveness of public outreach. Therefore, I would also ask that the method for consideration of public comments become transparent so people will believe that they have at least been heard and hopefully encouraged by the attention these comments receive.

Best Regards,

Michael Nash
mnash900@yahoo.com
650-400-6274

Dear Mr. Dahl,

My husband and I are long time residents of Baywood- having moved to our home on Fairfax Avenue in 1994. We understand the necessity of putting forth a reasonable plan for growth. We understand the City is soliciting comments regarding the General Plan. (GP) We have reviewed the GP online, along with the vision statement. Obviously, there has been a great deal of work and thought to put these forth.

At this time, we feel strongly that the City consider the impacts of the EIR with respect to the proposed GP. This is an historic neighborhood (our home was built in 1936 and we are the third owner) and we ask that the City consider all facets of anticipated growth on San Mateo.

SB9 and 10 should be considered against the backdrop of the historic homes in many areas of San Mateo. Change is inevitable- as is growth. Let's work to make it positive change for the community.

Best,

Pam Mills Casey
345 Fairfax
San Mateo, CA
94402

Dear Zachary,
Thank you for the work you are doing for San Mateo community development .
Not an easy task to balance the many conflicting wants and needs of such a vibrant and diverse community.

I believe we must increase housing and know the city is working toward this goal. I also hope it will be done with an approach that not only considers but identifies the historic areas and its homes. (For the record, I do not have a historic home.)

We have many homes within San Mateo neighborhoods, which have historic homes - in Baywood, Hayward Park, Aragon, Glazenwood, San Mateo Park and more.
Please include in the EIR plan a policy and a plan to identify historic resources and districts.

I know Redwood City has
one - https://www.redwoodcity.org/home/showpublisheddocument/5103/635782756595400000

Thank you for your consideration

Patty Anixter
650-483-8554
panixter@mac.com

Deputy Director of Community Development

Hello Mr. Dahl,

We are long-time residents of San Mateo (47 years) and live on Castilian Way. Our home was built in 1936, and we believe our neighborhood and surrounding areas should be designated as" historic." Many of the houses are distinctive and have the ambiance of the 1920 and 1930s. Indeed, these two decades and the homes built in that era project a unique period in San Mateo's history and should be preserved. This area also has many trees and shrubs as old as the homes.

The City needs to develop policies to protect our historic neighborhoods.

Regards,

Pete and Lynda Paffrath

Pete Paffrath
215 Castilian Way
San Mateo, CA 94402
650-520-6349

Zachary Dahl
Deputy Director
Community Development Department
City of San Mateo
330 West 20th Avenue
San Mateo, California 94403

Mr. Dahl:

We are opposed to the Alston's plan to demolition the existing home at 415 Fairfax Avenue.

My wife Cheryl and I, Ron Whiteside, have resided at 250 Harvard Road in San Mateo since 1981. We live on the corner of Harvard and Fairfax, a few doors down and across the street from 415 Fairfax. We obviously love the Baywood area – since we have chosen to live here for so long.

We were participants in the Augusts 4th meeting about plans for 415 Fairfax and stated our concerns – that:

- The proposed demolition will destroy a historic home that has been carefully maintained and fits well into the neighborhood
- The proposed replacement home is very large and bulky for the lot size. Without the area referred to as an ADU, it is still much larger than other homes in our immediate area
- The proposed ADU will not add housing, which is what the law intended. It is attached to the main house and can easily be converted to a simple addition by adding a door. The new owners stated that it would be used as guest quarters for visiting family. How does this qualify as an ADU?

Numerous neighbors have sent emails to the SM Planning Department, eloquently expressing their concerns about this proposed project. We agree with all of the concerns in their emails, so I won't repeat them, but we definitely concur.

Houses in Baywood don't turn over very often, as long-time owners want their treasured homes to go to family or others who will cherish and respect the old-world charm of the house and Baywood neighborhood. New owners often renovate their homes and may make additions – always with respect for their heritage home. Really, why would a new home owner say how much they just love Baywood; yet want to destroy a heritage fabric in our community that makes Baywood what it is; the neighborhood "they just love".

We urge you to deny the new owners' current request to tear down the house at 415 Fairfax Avenue and encourage them to develop a plan that respects the home, our Baywood neighborhood, and their new neighbors.

Regards

Dear Mr. Dahl,

We are writing to provide public comment regarding the Environmental Impact Report for San Mateo's General Plan 2040. SB9 and SB10 could potentially have future negative impacts in our city neighborhoods, as well as other neighborhoods in California.

We'd like to encourage you to identify historic districts in San Mateo and develop policies to protect those historic neighborhoods - hopefully including Baywood, where we live. Please consider the potential negative impacts of SB9 and SB10 on these neighborhoods, as well as ways to alleviate some of those potentials in your planning.

Thank you for considering this,

Stephen and Martha Park
418 Virginia Ave.
San Mateo, CA 94402

APPENDIX B

PROJECTS INCLUDED IN BUILDOUT PROJECTIONS

APN	Project/Site Name	Address	Existing Land Use	Proposed General Plan Land Use Designation	Proposed Housing Units	Proposed Retail Square Footage	Proposed Office Square Footage
033163050	222 S Fremont	717 E 3rd Ave	Single Family Residential	Residential Medium Density	40	-	-
033171040	Monte Diablo and North Kingston	145 Kingston	Multi-Family Residential	Residential Low/Medium Density	-	-	-
033171050	Monte Diablo and North Kingston	139 Kingston	Multi-Family Residential	Residential Low Density	-	-	-
033171060	Monte Diablo and North Kingston	131 Kingston	Single Family Residential	Residential Low/Medium Density	-	-	-
033171180	Monte Diablo and North Kingston	1218 Monte Diablo	Commercial	Residential Medium Density	34	-	-
033281130	477 9th Ave Mixed Use Development	477 9th Ave	Office	Mixed-Use Medium	120	5,645	28,100
034144240	Essex at Central Park	E 5th Ave/San Mateo Dr	Commercial	Mixed-Use High	80	7,000	12,960
034176050	222 E. 4th Ave – Draeger's	222 E 4th Ave	Commercial	Mixed-Use High	10	17,658	104,722
034176070	222 E. 4th Ave – Draeger's	400 S B st	Commercial	Mixed-Use High	-	619	1,238
034176080	222 E. 4th Ave – Draeger's	410 S B St	Commercial	Mixed-Use High	-	688	1,375
034176090	222 E. 4th Ave – Draeger's	*no Site Address* San Mateo 00000	Commercial	Mixed-Use High	-	3,575	7,150
034179010	445 S B St Bespoke	302 E 4th Ave	Commercial	Mixed-Use High	60	89,415	66,585
034179020	445 S B St Bespoke	407 S B St	Commercial	Mixed-Use High	-	693	1,385
034179030	445 S B St Bespoke	415 S B St	Commercial	Mixed-Use High	-	680	1,361
034179040	445 S B St Bespoke	445 S B St	Commercial	Mixed-Use High	-	2,192	4,383
034179050	445 S B St Bespoke	4th/Railroad	Commercial	Mixed-Use High	-	1,383	2,766
034179060	445 S B St Bespoke	4th/Railroad	Commercial	Mixed-Use High	-	680	1,360
034181160	435 E. 3rd Ave.	435 E 3rd Ave	Commercial	Mixed-Use High	5	1,381	34,000
034183060	KIKU CROSSING	480 E 4th Ave	Commercial	Residential High Density	225	-	-
034185030	Block 21 500 E. 3rd Ave	312 Delaware St	Single Family Residential	Mixed-Use High	-	682	1,363
034185040	Block 21 500 E. 3rd Ave	318 Delaware St	Single Family Residential	Mixed-Use High	-	682	1,363
034185050	Block 21 500 E. 3rd Ave	320 Delaware St	Quasi Public	Mixed-Use High	-	696	1,392
034185110	Block 21 500 E. 3rd Ave	307 Claremont St	Industrial	Mixed-Use High	-	726	1,452
034185120	Block 21 500 E. 3rd Ave	512 3rd Ave	Commercial	Mixed-Use High	-	686	1,373
034185140	Block 21 500 E. 3rd Ave	373 Claremont St	Commercial	Mixed-Use High	-	517	1,035
034185150	Block 21 500 E. 3rd Ave	507 4th Ave	Commercial	Mixed-Use High	-	877	1,753
034185160	Block 21 500 E. 3rd Ave	300 Delaware St	Commercial	Mixed-Use High	111	1,380	179,560
034185170	Block 21 500 E. 3rd Ave	525 4th Ave	Commercial	Mixed-Use High	-	687	1,374
034185190	Block 21 500 E. 3rd Ave	311 Claremont St	Multi-Family Residential	Mixed-Use High	-	637	1,275
034185200	Block 21 500 E. 3rd Ave	315 Claremont St	Vacant	Mixed-Use High	-	679	1,358
034194030	616 S. B Street Nazareth Vista Mixed Use Development	616 S B St	Commercial	Residential Medium Density	48	6,919	-
034194140	616 S. B Street Nazareth Vista Mixed Use Development	600 S B St	Commercial	Residential Medium Density	-	-	-
034200220	Central Park South (Residential)	885 S El Camino Real	Public Park	Mixed-Use Medium	60	2,760	33,500
034275130	1 Hayward Avenue	5 Hayward Ave	Office	Mixed-Use Medium	18	1,098	4,495
034302140	1495 S. El Camino Real	1495 El Camino Real	Office	Mixed-Use Low/Medium	35	2,000	20,910
034413080	1600-1620 S. El Camino Real & 1541-1543 Jasmine Street	1600 El Camino Real	Commercial	Mixed-Use Medium	44	404	1,617
034413090	1600-1620 S. El Camino Real & 1541-1543 Jasmine Street	1604 El Camino Real	Commercial	Mixed-Use Medium	-	302	1,208
034413100	1600-1620 S. El Camino Real & 1541-1543 Jasmine Street	1610 El Camino Real	Commercial	Mixed-Use Medium	-	349	1,394
034413110	1600-1620 S. El Camino Real & 1541-1543 Jasmine Street	1620 El Camino Real	Commercial	Mixed-Use Medium	-	350	1,402
035215050	Hayward Park Station	1701 Leslie St	Industrial	Mixed-Use Medium	-	3,654	14,618
035215060	Hayward Park Station	1731 Leslie St	Industrial	Mixed-Use Medium	30	1,075	4,301
035221010	Hayward Park Station	1741 Leslie St	Industrial	Mixed-Use Medium	-	574	2,296
035221020	Hayward Park Station	1753 Leslie St	Industrial	Mixed-Use Medium	-	516	2,064
035242090	Concar Passage	678 Concar Dr	Commercial	Mixed-Use Medium	961	32,000	3,403
035242140	Concar Passage	666 Concar Dr	Commercial	Mixed-Use Medium	-	19,413	77,653
035242160	Concar Passage	1855 Delaware St	Commercial	Mixed-Use Medium	-	1,413	5,654
035242170	Concar Passage	1880 Grant St	Commercial	Mixed-Use Medium	-	18,182	72,727
035242190	Concar Passage	690 Concar Dr	Commercial	Mixed-Use Medium	-	1,479	5,917
035242200	Concar Passage	1820 Grant St	Commercial	Mixed-Use Medium	-	1,480	5,919
035242210	Concar Passage	640 Concar Dr	Commercial	Mixed-Use Medium	-	7,558	30,230
035242220	Concar Passage	Concar Dr/S Delaware St	Commercial	Mixed-Use Medium	-	2,021	8,083
035383200	Fish Market 1855 S. Norfolk St	1863 S Norfolk St	Commercial	Mixed-Use Medium	239	12,595	50,381
039030340	1919 O'Farrell Street	1919 O'Farrell St	Office	Mixed-Use Medium	49	2,421	9,682
039352060	Hillsdale Terraces	2700 El Camino Real	Commercial	Mixed-Use High	-	2,025	4,051
039352070	Hillsdale Terraces	2750 El Camino Real	Commercial	Mixed-Use High	-	1,625	3,250
039352090	Hillsdale Terraces	2790 El Camino Real	Commercial	Mixed-Use Medium	68	13,078	4,670

Source: City of San Mateo, 2023

APN	Project/Site Name	Address	Existing Land Use	Proposed General Plan Land Use Designation	Proposed Housing Units	Proposed Retail Square Footage	Proposed Office Square Footage
039353060	2850 El Camino Real	2850 El Camino Real	Office	Mixed-Use Medium	18	7,458	1,340
039490170	Hillsdale Shopping Center	41 Hillsdale Blvd	Commercial	Mixed-Use Medium	1,998	297,423	1,189,691
040031040	Bay Meadows Modification, PA20-033	3069 Kyne St (BMSP - Residential Block 6)		Residential Medium Density	108	-	-
040031230	Bay Meadows Modification, PA20-020	2600 S Delaware St		Mixed-Use Medium	114	10,244	241,756
040031240	Bay Meadows Modification, PA20-020	2600 S Delaware St		Mixed-Use Medium	-	2,474	9,898
040102580	477 E. Hillsdale Blvd (Hillsdale Inn)	341 Hillsdale Blvd	Commercial	Residential Medium Density	230	-	-
040102620	477 E. Hillsdale Blvd (Hillsdale Inn)	477 Hillsdale Blvd	Commercial	Residential Medium Density	230	-	-
040102630	477 E. Hillsdale Blvd (Hillsdale Inn)		Commercial	Residential Medium Density	-	-	-
041521010	Peninsula Heights	2988 Campus Dr	Office	Residential Low Density	290	-	-
041521020	Peninsula Heights	2800 Campus Dr	Single Family Residential	Residential Low Density	-	-	-
041522010	Peninsula Heights	2655 Campus Dr		Residential Low Density	-	-	-
041522020	Peninsula Heights	2755 Campus Dr	Office	Residential Low Density	-	-	-
				Total	**5,225**	**592,749**	**2,272,793**

Source: City of San Mateo, 2023

APPENDIX C

AIR QUALITY AND GREENHOUSE GAS EMISSIONS DATA

Land Use Statistics - San Mateo, San Mateo County

	Existing Conditions 2019	Buildout Estimates 2040	Projected Growth (Proposed Project) 2019-2040	Growth Factor from Existing for Horizon Year 2040
City + Sphere of Influence (SOI)				
Housing Units	43,770	65,180	21,410	0.49
Population	108,020	160,040	52,020	0.48
Employment	62,440	79,360	16,920	0.27
Service Population	170,460	239,400	68,940	0.40
City				
Housing Units	42,400	63,800	21,400	0.50
Population	104,600	156,590	51,990	0.50
Employment	61,230	77,760	16,530	0.27
Service Population	165,830	234,350	68,520	0.41
Sphere of Influence (SOI)				
Housing Units	1,370	1,380	10	0.01
Population	3,420	3,450	30	0.01
Employment	1,210	1,600	390	0.32
Service Population	4,630	5,050	420	0.09

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

Notes:

[1] Source: Kittelson and Associates, Inc. 2023; EMFAC2021 Version 1.0.2 Emissions Database (Region - San Mateo)

[2] Sources: PG&E and PCE 2022 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 (2019)

Phase	Existing Criteria Air Pollutant Emissions (lbs/day) - City + SOI				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]	260	1,940	203	85	45	337	35	15
Energy[2]	35	656	49	49	6	120	9	9
Offroad Equipment[3]	390	246	10	8	71	45	2	1
Consumer Products[4]	1,698				310			
Total	**2,383**	**2,842**	**262**	**141**	**433**	**501**	**46**	**25**

EXISTING (2040 No Project Baseline)

Phase	Existing Criteria Air Pollutant Emissions (lbs/day) - City + SOI				Existing Criteria Air Pollutant Emissions (tons/year) - City + SOI			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	71	352	182	61	12	61	32	11
Energy[2]	35	656	49	49	6	120	9	9
Offroad Equipment[3]	390	246	10	8	71	45	2	1
Consumer Products[4]	1,698				310			
Total	**2,193**	**1,255**	**241**	**118**	**400**	**226**	**42**	**21**

Year 2040 (Proposed Project)

Phase	Project (2040) Criteria Air Pollutant Emissions (lbs/day) - City + SOI				Project (2040) Criteria Air Pollutant Emissions (tons/year)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	92	459	237	80	16	80	41	14
Energy[2]	49	922	69	69	9	168	13	13
Offroad Equipment[3]	550	314	13	10	100	57	2	2
Consumer Products[4]	2,819				515			
Total	**3,510**	**1,696**	**319**	**159**	**640**	**305**	**56**	**28**

NET CHANGE (from 2040 No Project Baseline)

Phase	Net Change (2040-2019) Criteria Air Pollutant Emissions (lbs/day) - City + SOI				Net Change (2040-2019) Criteria Air Pollutant Emissions (tons/year) - City + SOI			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	21	107	55	19	4	19	10	3
Energy[2]	14	266	20	20	3	49	4	4
Offroad Equipment[3]	160	67	3	2	29	12	1	0
Consumer Products[4]	1,121	0	0	0	205	0	0	0
Total	**1,317**	**441**	**78**	**41**	**240**	**79**	**14**	**7**
BAAQMD Threshold	**54**	**54**	**82**	**54**	**10**	**10**	**15**	**10**
Exceeds Threshold	**Yes**	**Yes**	**No**	**No**	**Yes**	**Yes**	**No**	**No**

NET CHANGE (from Existing) - Friant Ranch

Phase	Net Change (2040-2019) Criteria Air Pollutant Emissions (lbs/day) - City + SOI				Net Change (2040-2019) Criteria Air Pollutant Emissions (tons/day)			
	VOC	NO_X	PM_{10}	$PM_{2.5}$	VOC	NO_X	PM_{10}	$PM_{2.5}$
Transportation[1]	-168	-1,480	34	-5	-29	-257	6	-1
Energy[2]	14	266	20	20	3	49	4	4
Offroad Equipment[3]	160	67	3	2	29	12	1	0
Consumer Products[4]	1,121				205			
Total	**1,127**	**-1,147**	**57**	**17**	**207**	**-196**	**10**	**3**
BAAQMD Threshold	**54**	**54**	**82**	**54**	**10**	**10**	**15**	**10**
Exceeds Threshold	**Yes**	**No**	**No**	**No**	**Yes**	**No**	**No**	**No**

AQMP Consistency Analysis

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

Category	Existing	GP 2040 Update (Proposed Project)	Change from Existing	
			Change	Percent
Population	108,020	160,040	52,020	48.2%
Employment	62,440	79,360	16,920	27.1%
SP	170,460	239,400	68,940	40.4%
VMT per Day	3,918,221	5,108,862	1,190,641	30.4%
VMT/SP	22.99	21.34	-1.65	-7.2%

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. 2023. 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	0.10%	2,448	2
2010 to 2019	4.40%	2,524	111
2000 to 2009	5.40%	2,404	130
1990 to 1999	6.10%	2,116	129
1980 to 1989	9.40%	1,819	171
1979 or earlier	74.70%	1,699	1,269
	100%		1,813

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, 2023. Table DP04. 2021 American Community Survey 5-Year Estimate https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2019/

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 2019 EIR Study Area	2040 GP Update EIR Study Area
Housing Units	43,770	65,180
Residential SQFT	79,345,150	131,746,125
lbs VOC per day	1,698	2,819
tons VOC per year	310	515

Notes:

[1] New housing units constructed post-2020 assumed to be 2,448 square feet (based on Source 2).

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

Area Sources

Source: OFFROAD2021. https://arb.ca.gov/emfac/emissions-inventory/2f6c8fa1b8ec8bd9f8a4f23b3d84c74a77f77161

OFFROAD2021 Estimate based on:

Agricultural Equipment	Based on the percentage of agricultural acreage within the City compared to the County of San Mateo (San Mateo County 2019, San Mateo CAP Update)
Construction Equipment	Based on the percentage of total County Service Population Change Attributable to City (US Census Bureau 2023)
Lawn & Garden	Based on the percentage of City population in San Mateo compared to the San Mateo County Population (US Census Bureau 2023)
Light Commercial and Industrial Equipment	Based on the percentage of employment in San Mateo compared to San Mateo County (EDD 2023)

Farmland Acreage

Source: San Mateo General Plan EIR, Conservation, Open Space, and Recreation Element, 2023.

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

Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020; and US Census Bureau https://onthemap.ces.census.gov/

Employment

Source. Employment Development Department (EDD). 2023, March 20 (Accessed). Unemployment Rates (Labor Force). https://labormarketinfo.edd.ca.gov/cgi/dataanalysis/labForceReport.asp?menuchoice=LABFORCE

2019 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	0.0	0.0	0.0
Construction Equipment		7	25	168	0	2	2
Lawn & Garden		259	35	3,031	0	3	2
Light Commercial/ Industrial Equipment		124	186	5,756	0	5	4
TOTAL City+ SOI		390	246	8,954	0	10	8

Horizon Year 2040	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	7	25	168	0	2	2
Lawn & Garden	Proportional to housing growth	385	52	4,513	0	5	4
Light Commercial/ Industrial Equipment	Proportional to employment growth	158	237	7,316	0	6	5
TOTAL City+ SOI		550	314	11,996	1	13	10

San Mateo County OFFROAD2019

Source: https://arb.ca.gov/emfac/emissions-inventory/e681c37cb7093ea75b08ef761dfdc43659684b99
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 (v1.0.3) Emissions Inventory
Region Type: County
Region: San Mateo
Calendar Year: 2019
Scenario: All Adopted Rules - Exhaust
Vehicle Classification: OFFROAD2019 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
San Mateo	2019	Construction and Mining - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	1.24E-04	1.60E-03	1.18E-03	3.66E-06	5.82E-05	5.35E-05
San Mateo	2019	Construction and Mining - Cranes	Aggregate	Aggregate	Diesel	7.73E-04	8.81E-03	5.03E-03	8.70E-06	4.06E-04	3.73E-04
San Mateo	2019	Construction and Mining - Crawler Tractors	Aggregate	Aggregate	Diesel	1.82E-03	2.03E-02	1.06E-02	2.15E-05	1.00E-03	9.21E-04
San Mateo	2019	Construction and Mining - Excavators	Aggregate	Aggregate	Diesel	1.79E-03	1.85E-02	1.50E-02	3.87E-05	7.70E-04	7.08E-04
San Mateo	2019	Construction and Mining - Graders	Aggregate	Aggregate	Diesel	1.34E-03	1.51E-02	6.46E-03	1.46E-05	6.58E-04	6.06E-04
San Mateo	2019	Construction and Mining - Misc - Asphalt Pavers	Aggregate	Aggregate	Gasoline	6.91E-04	5.96E-04	2.56E-02	9.87E-07	2.27E-04	1.72E-04
San Mateo	2019	Construction and Mining - Misc - Bore/Drill Rigs	Aggregate	Aggregate	Gasoline	1.95E-04	3.04E-04	7.23E-03	6.26E-07	6.43E-05	4.86E-05
San Mateo	2019	Construction and Mining - Misc - Bore/Drill Rigs	Aggregate	Aggregate	Diesel	4.81E-05	3.03E-04	1.76E-04	4.34E-09	1.02E-05	7.73E-06
San Mateo	2019	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	Aggregate	Gasoline	9.47E-03	5.00E-03	2.64E-01	4.36E-06	2.22E-03	1.67E-03
San Mateo	2019	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	Aggregate	Diesel	5.87E-05	3.66E-04	2.84E-04	6.33E-09	1.32E-05	9.98E-06
San Mateo	2019	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Gasoline	6.90E-03	4.84E-03	2.29E-01	5.11E-06	2.51E-03	1.90E-03
San Mateo	2019	Construction and Mining - Misc - Concrete/Industrial Saws	Aggregate	Aggregate	Diesel	4.10E-05	2.43E-04	2.33E-04	3.26E-07	1.25E-05	1.12E-05
San Mateo	2019	Construction and Mining - Misc - Cranes	Aggregate	Aggregate	Gasoline	7.80E-05	2.13E-04	3.51E-03	4.95E-07	3.39E-06	2.56E-06
San Mateo	2019	Construction and Mining - Misc - Crushing/Proc. Equipment	Aggregate	Aggregate	Gasoline	4.65E-05	3.13E-05	1.63E-03	2.58E-08	1.87E-05	1.41E-05
San Mateo	2019	Construction and Mining - Misc - Dumpers/Tenders	Aggregate	Aggregate	Gasoline	9.96E-04	5.84E-04	2.49E-02	4.41E-07	2.46E-04	1.86E-04
San Mateo	2019	Construction and Mining - Misc - Dumpers/Tenders	Aggregate	Aggregate	Diesel	5.85E-06	3.70E-05	2.00E-05	5.07E-10	1.28E-06	9.63E-07
San Mateo	2019	Construction and Mining - Misc - Excavators	Aggregate	Aggregate	Diesel	4.18E-05	2.64E-04	1.43E-04	3.63E-09	8.89E-06	6.72E-06
San Mateo	2019	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
San Mateo	2019	Construction and Mining - Misc - Other	Aggregate	Aggregate	Diesel	1.23E-04	7.70E-04	6.04E-04	1.34E-08	2.69E-05	2.03E-05
San Mateo	2019	Construction and Mining - Misc - Pavers	Aggregate	Aggregate	Diesel	1.10E-05	6.96E-05	3.75E-05	9.52E-10	2.42E-06	1.83E-06
San Mateo	2019	Construction and Mining - Misc - Paving Equipment	Aggregate	Aggregate	Gasoline	1.48E-02	9.87E-03	4.42E-01	7.70E-06	4.35E-03	3.29E-03
San Mateo	2019	Construction and Mining - Misc - Paving Equipment	Aggregate	Aggregate	Diesel	1.87E-05	1.18E-04	6.38E-05	1.62E-09	3.95E-06	2.99E-06
San Mateo	2019	Construction and Mining - Misc - Plate Compactors	Aggregate	Aggregate	Gasoline	6.14E-03	3.82E-03	1.74E-01	2.82E-06	1.48E-03	1.12E-03
San Mateo	2019	Construction and Mining - Misc - Plate Compactors	Aggregate	Aggregate	Diesel	3.97E-05	2.49E-04	2.08E-04	4.53E-09	8.75E-06	6.61E-06
San Mateo	2019	Construction and Mining - Misc - Rollers	Aggregate	Aggregate	Gasoline	3.23E-03	2.73E-03	1.11E-01	3.29E-06	1.05E-03	7.95E-04
San Mateo	2019	Construction and Mining - Misc - Rollers	Aggregate	Aggregate	Diesel	2.76E-04	1.74E-03	1.21E-03	2.79E-08	5.97E-05	4.51E-05
San Mateo	2019	Construction and Mining - Misc - Rough Terrain Forklifts	Aggregate	Aggregate	Gasoline	5.00E-04	1.55E-03	1.92E-02	3.44E-06	2.46E-05	1.86E-05
San Mateo	2019	Construction and Mining - Misc - Rubber Tired Loaders	Aggregate	Aggregate	Gasoline	2.74E-04	7.40E-04	1.18E-02	1.81E-06	1.28E-05	9.66E-06
San Mateo	2019	Construction and Mining - Misc - Rubber Tired Loaders	Aggregate	Aggregate	Diesel	6.82E-06	4.31E-05	2.33E-05	5.91E-10	1.45E-06	1.09E-06
San Mateo	2019	Construction and Mining - Misc - Signal Boards	Aggregate	Aggregate	Gasoline	1.47E-04	1.04E-04	4.97E-03	7.93E-08	5.68E-05	4.29E-05
San Mateo	2019	Construction and Mining - Misc - Signal Boards	Aggregate	Aggregate	Diesel	6.36E-04	3.97E-03	3.35E-03	2.15E-07	1.41E-04	1.08E-04
San Mateo	2019	Construction and Mining - Misc - Skid Steer Loaders	Aggregate	Aggregate	Gasoline	4.73E-03	3.52E-03	1.60E-01	7.48E-06	1.51E-03	1.14E-03
San Mateo	2019	Construction and Mining - Misc - Skid Steer Loaders	Aggregate	Aggregate	Diesel	2.23E-03	1.39E-02	7.51E-03	1.92E-07	5.00E-04	3.78E-04
San Mateo	2019	Construction and Mining - Misc - Surfacing Equipment	Aggregate	Aggregate	Gasoline	7.99E-03	5.54E-03	2.10E-01	3.41E-06	2.30E-03	1.74E-03
San Mateo	2019	Construction and Mining - Misc - Tampers/Rammers	Aggregate	Aggregate	Gasoline	7.09E-04	5.46E-04	2.72E-02	4.39E-07	3.85E-04	2.91E-04
San Mateo	2019	Construction and Mining - Misc - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Gasoline	1.08E-04	2.94E-04	7.33E-03	1.15E-06	8.26E-06	6.24E-06
San Mateo	2019	Construction and Mining - Misc - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	1.99E-04	1.26E-03	6.81E-04	1.73E-08	4.31E-05	3.25E-05
San Mateo	2019	Construction and Mining - Misc - Trenchers	Aggregate	Aggregate	Gasoline	5.73E-03	4.76E-03	2.02E-01	6.22E-06	1.92E-03	1.45E-03
San Mateo	2019	Construction and Mining - Misc - Trenchers	Aggregate	Aggregate	Diesel	2.52E-04	1.59E-03	9.64E-04	2.34E-08	5.39E-05	4.08E-05
San Mateo	2019	Construction and Mining - Off-Highway Tractors	Aggregate	Aggregate	Diesel	5.91E-04	4.99E-03	4.02E-03	8.18E-06	2.72E-04	2.50E-04
San Mateo	2019	Construction and Mining - Off-Highway Trucks	Aggregate	Aggregate	Diesel	2.91E-03	3.28E-02	1.66E-02	4.91E-05	1.13E-03	1.04E-03
San Mateo	2019	Construction and Mining - Other	Aggregate	Aggregate	Diesel	7.78E-04	8.03E-03	4.98E-03	1.10E-05	3.99E-04	3.67E-04
San Mateo	2019	Construction and Mining - Pavers	Aggregate	Aggregate	Diesel	1.78E-04	1.86E-03	1.35E-03	2.58E-06	1.00E-04	9.20E-05
San Mateo	2019	Construction and Mining - Paving Equipment	Aggregate	Aggregate	Diesel	9.55E-05	1.02E-03	7.52E-04	1.50E-06	5.09E-05	4.69E-05
San Mateo	2019	Construction and Mining - Rollers	Aggregate	Aggregate	Diesel	5.95E-04	4.85E-03	4.54E-03	6.69E-06	2.93E-04	2.70E-04
San Mateo	2019	Construction and Mining - Rough Terrain Forklifts	Aggregate	Aggregate	Diesel	2.97E-04	3.78E-03	4.71E-03	7.27E-06	1.65E-04	1.52E-04
San Mateo	2019	Construction and Mining - Rubber Tired Dozers	Aggregate	Aggregate	Diesel	5.34E-04	5.52E-03	3.80E-03	4.29E-06	2.76E-04	2.53E-04
San Mateo	2019	Construction and Mining - Rubber Tired Loaders	Aggregate	Aggregate	Diesel	4.31E-03	4.52E-02	2.57E-02	5.90E-05	2.02E-03	1.86E-03
San Mateo	2019	Construction and Mining - Scrapers	Aggregate	Aggregate	Diesel	2.79E-03	3.34E-02	1.98E-02	3.84E-05	1.35E-03	1.24E-03

San Mateo	2019 Construction and Mining - Skid Steer Loaders	Aggregate	Aggregate	Diesel	3.32E-04	3.98E-03	4.72E-03	7.04E-06	1.78E-04	1.64E-04
San Mateo	2019 Construction and Mining - Surfacing Equipment	Aggregate	Aggregate	Diesel	3.28E-05	4.51E-04	2.46E-04	8.08E-07	1.71E-05	1.57E-05
San Mateo	2019 Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	Aggregate	Diesel	3.82E-03	3.80E-02	3.48E-02	5.38E-05	2.26E-03	2.08E-03
San Mateo	2019 Construction and Mining - Trenchers	Aggregate	Aggregate	Diesel	2.61E-04	1.97E-03	1.51E-03	2.22E-06	1.29E-04	1.18E-04
TOTAL CONSTRUCTION OFFROAD (tons/day)					9.01E-02	3.20E-01	2.11E+00	3.91E-04	3.08E-02	2.52E-02
ESTIMATED San Mateo (tons/yr)					1.31	4.65	30.61	0.01	0.45	0.37
ESTIMATED San Mateo (lbs/day)					7	25	168	0	2	2

City and County Population: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020; and US Census Bureau https://onthemap.ces.census.gov/	**2019**
City Absolute Change Service Population Previous Year	834
County Absolute Change Service Population Previous Year	20,973
% of total County Service Population Change Attributable to City	**4%**

Industrial and Light Commercial

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd
San Mateo	2019	Industrial - Aerial Lifts	Aggregate	Aggregate	Diesel	3.35E-04	5.70E-03	7.79E-03	1.26E-05	1.13E-04	1.04E-04
San Mateo	2019	Industrial - Forklifts	Aggregate	Aggregate	Diesel	5.50E-03	4.73E-02	3.97E-02	5.29E-05	3.38E-03	3.11E-03
San Mateo	2019	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Gasoline	3.09E-03	2.80E-03	1.11E-01	9.05E-06	8.13E-04	6.14E-04
San Mateo	2019	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Diesel	1.65E-04	1.04E-03	6.69E-04	1.59E-08	3.95E-05	2.98E-05
San Mateo	2019	Industrial - Misc - Aerial Lifts	Aggregate	Aggregate	Electric	3.88E-05	3.01E-04	1.10E-02	2.34E-08	2.95E-05	2.23E-05
San Mateo	2019	Industrial - Misc - Forklifts	Aggregate	Aggregate	Gasoline	2.53E-02	1.14E-01	2.81E+00	2.51E-04	1.74E-03	1.32E-03
San Mateo	2019	Industrial - Misc - Forklifts	Aggregate	Aggregate	Electric	7.22E-06	3.20E-05	1.15E-03	2.59E-09	3.54E-06	2.67E-06
San Mateo	2019	Industrial - Misc - Forklifts	Aggregate	Aggregate	Nat Gas	0.00E+00	1.75E-01	1.62E+00	0.00E+00	3.55E-03	0.00E+00
San Mateo	2019	Industrial - Misc - Other General Industrial Equipment	Aggregate	Aggregate	Gasoline	1.32E-03	1.68E-03	1.05E-01	4.88E-06	2.73E-05	2.07E-05
San Mateo	2019	Industrial - Misc - Other General Industrial Equipment	Aggregate	Aggregate	Diesel	1.28E-04	8.31E-04	5.17E-04	1.23E-08	2.83E-05	2.14E-05
San Mateo	2019	Industrial - Misc - Other Material Handling Equipment	Aggregate	Aggregate	Gasoline	2.22E-04	9.78E-04	1.00E-02	1.98E-06	1.42E-05	1.08E-05
San Mateo	2019	Industrial - Misc - Sweepers/Scrubbers	Aggregate	Aggregate	Gasoline	1.76E-03	4.70E-03	1.51E-01	1.62E-05	1.01E-04	7.66E-05
San Mateo	2019	Industrial - Misc - Sweepers/Scrubbers	Aggregate	Aggregate	Diesel	3.10E-05	2.05E-04	1.37E-04	3.15E-09	7.02E-06	5.31E-06
San Mateo	2019	Industrial - Other General Industrial Equipment	Aggregate	Aggregate	Diesel	2.46E-03	1.82E-02	1.58E-02	2.55E-05	1.10E-03	1.01E-03
San Mateo	2019	Industrial - Other Material Handling Equipment	Aggregate	Aggregate	Diesel	9.81E-04	1.04E-02	7.07E-03	1.50E-05	4.79E-04	4.41E-04
San Mateo	2019	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Gasoline	7.44E-02	4.83E-02	4.08E+00	1.56E-04	3.66E-04	3.88E-04
San Mateo	2019	Light Commercial - Misc - Air Compressors	Aggregate	Aggregate	Diesel	1.20E-03	6.24E-03	6.99E-03	1.01E-05	3.63E-04	3.39E-04
San Mateo	2019	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
San Mateo	2019	Light Commercial - Misc - Gas Compressors	Aggregate	Aggregate	Nat Gas	0.00E+00	1.96E-02	2.29E-01	0.00E+00	0.00E+00	0.00E+00
San Mateo	2019	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Gasoline	2.09E-01	8.54E-02	5.98E+00	2.59E-04	9.92E-04	1.15E-03
San Mateo	2019	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Diesel	3.68E-03	2.50E-02	2.09E-02	3.85E-05	1.08E-03	1.13E-03
San Mateo	2019	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
San Mateo	2019	Light Commercial - Misc - Generator Sets	Aggregate	Aggregate	Nat Gas	0.00E+00	7.72E-04	5.71E-03	0.00E+00	0.00E+00	0.00E+00
San Mateo	2019	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Gasoline	5.25E-02	2.28E-02	2.94E+00	1.02E-04	1.69E-04	2.22E-04
San Mateo	2019	Light Commercial - Misc - Pressure Washers	Aggregate	Aggregate	Diesel	1.58E-05	1.25E-04	9.93E-05	1.94E-07	4.88E-06	5.24E-06
San Mateo	2019	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
San Mateo	2019	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Gasoline	1.72E-02	1.06E-02	6.28E-01	3.98E-05	1.77E-04	1.58E-04
San Mateo	2019	Light Commercial - Misc - Pumps	Aggregate	Aggregate	Diesel	2.23E-03	1.40E-02	1.23E-02	2.17E-05	6.39E-04	6.59E-04
San Mateo	2019	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
San Mateo	2019	Light Commercial - Misc - Welders	Aggregate	Aggregate	Gasoline	3.75E-02	2.06E-02	1.79E+00	7.52E-05	2.58E-04	2.56E-04
San Mateo	2019	Light Commercial - Misc - Welders	Aggregate	Aggregate	Diesel	5.63E-03	3.09E-02	3.20E-02	4.97E-05	1.68E-03	1.61E-03
San Mateo	2019	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
TOTAL LIGHT COMMERCIAL + INDUSTRIAL OFFROAD (tons/day)						0.445	0.667	20.631	0.001	0.017	0.013
ESTIMATED San Mateo (tons/yr)						22.65	33.98	1050.47	0.06	0.87	0.65
ESTIMATED San Mateo (lbs/day)						124	186	5756	0	5	4

EMPLOYMENT: https://labormarketinfo.edd.ca.gov/cgi/dataanalysis/labForceReport.asp?menuchoice=LABFORCE	**2019**
Employment in San Mateo County	447,600
Employment in San Mateo	62,440
Percent in the City	14%

Lawn and Garden

Region	CalYr	VehClass	MdlYr	HP_Bin	Fuel	ROG_tpd	NOx_tpd	CO_tpd	SOx_tpd	PM10_tpd	PM2_5_tpd
San Mateo	2019	Lawn and Garden - Misc - Chainsaws	Aggregate	Aggregate	Gasoline	1.67E-01	5.29E-03	4.91E-01	3.72E-05	2.17E-03	1.64E-03
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Chainsaws Preempt	Aggregate	Aggregate	Gasoline	1.45E-01	5.00E-03	2.64E-01	2.18E-05	1.17E-03	8.85E-04
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Gasoline	2.31E-04	8.63E-05	1.10E-02	4.03E-07	9.28E-07	7.02E-07
San Mateo	2019	Lawn and Garden - Misc - Chippers/Stump Grinders	Aggregate	Aggregate	Diesel	3.41E-06	2.15E-05	1.16E-05	2.70E-08	7.24E-07	5.47E-07
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Lawn Mowers	Aggregate	Aggregate	Gasoline	5.59E-02	2.94E-02	2.25E+00	9.79E-05	1.61E-03	1.22E-03
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Leaf Blowers/Vacuums	Aggregate	Aggregate	Gasoline	2.77E-01	9.84E-03	1.41E+00	9.70E-05	4.05E-03	3.06E-03
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Other	Aggregate	Aggregate	Gasoline	9.43E-04	3.88E-04	5.09E-02	1.93E-06	4.45E-06	3.37E-06
San Mateo	2019	Lawn and Garden - Misc - Other	Aggregate	Aggregate	Diesel	1.50E-06	1.04E-05	8.27E-06	1.35E-08	3.62E-07	2.74E-07
San Mateo	2019	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Gasoline	1.12E-01	5.28E-02	5.09E+00	1.76E-04	7.36E-04	5.56E-04
San Mateo	2019	Lawn and Garden - Misc - Rear Engine Riding Mowers	Aggregate	Aggregate	Diesel	1.31E-03	8.53E-03	5.29E-03	1.08E-05	2.93E-04	2.21E-04
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Snowblowers	Aggregate	Aggregate	Gasoline	3.36E-04	1.67E-04	1.98E-02	6.77E-07	1.96E-06	1.49E-06
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Tillers	Aggregate	Aggregate	Gasoline	2.18E-03	3.67E-04	4.13E-02	1.86E-06	7.03E-06	5.31E-06
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Trimmers/Edgers/Brush Cutters	Aggregate	Aggregate	Gasoline	1.79E-01	1.11E-02	1.11E+00	7.38E-05	1.56E-03	1.18E-03
San Mateo	2019	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
San Mateo	2019	Lawn and Garden - Misc - Wood Splitters	Aggregate	Aggregate	Gasoline	1.18E-02	4.79E-03	4.40E-01	1.68E-05	7.08E-05	5.34E-05
TOTAL LAWN & GARDEN (tons/day)						0.95	0.13	11.17	0.00	0.01	0.01
ESTIMATED San Mateo (tons/yr)						47.18	6.33	553.08	0.03	0.58	0.44
ESTIMATED San Mateo (lbs/day)						259	35	3031	0	3	2

City and County Population: Department of Finance E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2020; and US Census Bureau https://onthemap.ces.census.gov/	**2019**
County Jurisdiction Population	771,160
City Jurisdiction Population	104,599
City % Total Population in County	**13.6%**

San Mateo — 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. 2023.

Criteria Air Pollutants

	lbs/day					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Existing EIR Study Area	260	1,940	9,116	32	203	85
Existing in Year 2040 EIR Study Area	71	352	4,097	23	182	61
Proposed 2040 EIR Study Area	92	459	5,341	30	237	80
Change from Existing Conditions (2019-2040)	-168	-1,480	-3,775	-2	34	-5
Change from Existing Land Uses (2040 Emission Rates)	-190	-1,587	-5,020	-9	-21	-23

	Tons/year					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Existing EIR Study Area	45	337	1,582	6	35	15
Existing in Year 2040 EIR Study Area	12	61	711	4	32	11
Proposed 2040 EIR Study Area	16	80	927	5	41	14
Change from Existing Conditions (2019-2040)	-29	-257	-655	0	6	-1
Change from Existing Land Uses (2040 Emission Rates)	-4	-19	-216	-1	-10	-3

Notes:

[1] lbs to Tons 2000

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

City of San Mateo VMT

Source: Kittelson & Associates, Inc. 2023.

Scenario	Daily VMT IX	XI	II	Total Daily VMT	Total with RTAC	Service Population	VMT/SP	VMT/SP w RTAC
ExistingYear (Year 2019)	1,656,534	2,096,050	165,637	3,918,221	2,041,929	170,460	23.0	12.0
GP Update (Year 2040)	2,231,799	2,656,020	221,043	5,108,862	2,664,953	239,400	21.3	11.1

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 2019)		GP Update (Year 2040)	
	Daily VMT	Percent	Daily VMT	Percent
Passenger Vehicles	3,752,639	96%	4,899,852	96%
Trucks	165,761	4%	209,010	4%

Modeling of vehicle miles traveled (VMT) provided by Kittelson & Associates Inc., 2023. 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 2019 Existing: Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
94.98%	5.02%	

Daily VMT	**3,918,221**						**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	0.37%	0.37%	2.89	43.68	8.07	0.36	2.93	1.63
All Other Buses	Natural Gas	0.00%	0.00%	0.00	0.12	1.28	0.00	0.02	0.01
LDA	Gasoline	52.42%	52.86%	69.31	311.65	4,092.60	13.24	74.17	26.46
LDA	Diesel	0.18%	0.18%	0.54	5.04	5.79	0.04	0.57	0.39
LDA	Electricity	2.14%	2.16%	0.00	0.00	0.00	0.00	2.29	0.65
LDA	Plug-in Hybrid	1.17%	1.18%	0.15	0.35	22.09	0.15	1.28	0.42
LDT1	Gasoline	4.32%	4.35%	17.02	77.07	728.05	1.29	7.02	2.69
LDT1	Diesel	0.00%	0.00%	0.03	0.16	0.17	0.00	0.03	0.02
LDT1	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.01	0.00
LDT1	Plug-in Hybrid	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT2	Gasoline	21.36%	21.54%	31.04	195.78	1,865.39	6.77	32.41	11.57
LDT2	Diesel	0.08%	0.08%	0.12	0.49	1.02	0.02	0.17	0.08
LDT2	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.01	0.00
LDT2	Plug-in Hybrid	0.05%	0.05%	0.01	0.02	0.97	0.01	0.06	0.02
LHD1	Gasoline	1.95%	1.64%	9.99	40.14	242.07	1.55	14.79	5.23
LHD1	Diesel	0.64%	0.54%	13.75	164.32	41.48	0.34	8.15	4.70
LHD2	Gasoline	0.22%	0.18%	1.10	5.27	25.75	0.19	1.88	0.66
LHD2	Diesel	0.26%	0.22%	4.53	45.88	12.39	0.17	3.32	1.75
MCY	Gasoline	0.33%	0.33%	40.94	19.94	468.17	0.05	0.51	0.20
MDV	Gasoline	11.83%	11.93%	27.06	155.36	1,247.10	4.51	18.16	6.54
MDV	Diesel	0.20%	0.21%	0.22	1.18	3.44	0.07	0.39	0.19
MDV	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
MDV	Plug-in Hybrid	0.06%	0.06%	0.01	0.02	1.21	0.01	0.07	0.02
MH	Gasoline	0.03%	0.03%	0.63	2.65	18.15	0.06	0.18	0.06
MH	Diesel	0.01%	0.01%	0.15	5.24	0.49	0.01	0.20	0.14
Motor Coach	Diesel	0.05%	0.05%	0.82	19.97	2.87	0.08	0.92	0.62
OBUS	Gasoline	0.10%	0.10%	0.60	3.96	13.63	0.16	0.52	0.17
PTO	Diesel	0.03%	0.02%	0.77	14.20	2.88	0.05	0.26	0.25
SBUS	Gasoline	0.02%	0.02%	0.67	2.85	16.50	0.01	0.09	0.03
SBUS	Diesel	0.02%	0.02%	0.15	11.49	0.43	0.02	0.17	0.09
SBUS	Natural Gas	0.00%	0.00%	0.00	0.04	0.85	0.00	0.00	0.00
T6 CAIRP Class 4	Diesel	0.00%	0.00%	0.01	0.14	0.02	0.00	0.01	0.01
T6 CAIRP Class 5	Diesel	0.00%	0.00%	0.01	0.14	0.02	0.00	0.01	0.01
T6 CAIRP Class 6	Diesel	0.00%	0.00%	0.02	0.48	0.07	0.00	0.03	0.02
T6 CAIRP Class 7	Diesel	0.02%	0.01%	0.12	3.19	0.41	0.01	0.17	0.12
T6 Instate Delivery Class 4	Diesel	0.07%	0.06%	3.51	44.48	9.21	0.07	1.77	1.47
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.00	0.01	0.06	0.00	0.00	0.00
T6 Instate Delivery Class 5	Diesel	0.06%	0.05%	1.22	17.62	3.30	0.06	0.77	0.55
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.00	0.01	0.07	0.00	0.00	0.00
T6 Instate Delivery Class 6	Diesel	0.12%	0.10%	4.03	51.51	10.60	0.12	2.23	1.76
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.00	0.01	0.10	0.00	0.00	0.00
T6 Instate Delivery Class 7	Diesel	0.05%	0.04%	1.06	16.60	2.78	0.05	0.68	0.51
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	0.00	0.01	0.19	0.00	0.00	0.00
T6 Instate Other Class 4	Diesel	0.09%	0.08%	3.93	61.21	11.07	0.09	2.46	2.07
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	0.24%	0.20%	3.34	58.49	9.94	0.23	2.86	2.00
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.00	0.02	0.29	0.00	0.01	0.00
T6 Instate Other Class 6	Diesel	0.15%	0.13%	3.51	56.66	10.18	0.14	2.58	2.00
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.00	0.01	0.15	0.00	0.00	0.00
T6 Instate Other Class 7	Diesel	0.07%	0.06%	1.24	21.27	3.43	0.07	1.02	0.75
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	0.00	0.02	0.32	0.00	0.01	0.00
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	0.06	0.93	0.17	0.00	0.04	0.03
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%	0.02%	0.25	5.98	0.77	0.02	0.24	0.16
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.05	0.00	0.00	0.00
T6 OOS Class 4	Diesel	0.00%	0.00%	0.00	0.08	0.01	0.00	0.00	0.00
T6 OOS Class 5	Diesel	0.00%	0.00%	0.00	0.08	0.01	0.00	0.01	0.00
T6 OOS Class 6	Diesel	0.00%	0.00%	0.01	0.27	0.04	0.00	0.02	0.01

Year 2019 Existing: Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
94.98%	5.02%	

Daily VMT	**3,918,221**					**lbs/day**			
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T6 OOS Class 7	Diesel	0.01%	0.01%	0.09	2.17	0.29	0.01	0.12	0.08
T6 Public Class 4	Diesel	0.01%	0.01%	0.06	4.89	0.15	0.01	0.06	0.03
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.04	0.00	0.00	0.00
T6 Public Class 5	Diesel	0.02%	0.02%	0.11	6.84	0.31	0.02	0.14	0.07
T6 Public Class 5	Natural Gas	0.00%	0.00%	0.00	0.02	0.46	0.00	0.01	0.00
T6 Public Class 6	Diesel	0.01%	0.01%	0.14	9.58	0.33	0.01	0.13	0.08
T6 Public Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.09	0.00	0.00	0.00
T6 Public Class 7	Diesel	0.04%	0.03%	0.46	30.63	0.96	0.04	0.39	0.26
T6 Public Class 7	Natural Gas	0.00%	0.00%	0.00	0.01	0.43	0.00	0.01	0.00
T6 Utility Class 5	Diesel	0.00%	0.00%	0.00	0.21	0.02	0.00	0.01	0.00
T6 Utility Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T6 Utility Class 6	Diesel	0.00%	0.00%	0.00	0.07	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	0.08	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	0.24%	0.20%	4.40	23.67	98.27	0.38	1.21	0.42
T7 CAIRP Class 8	Diesel	0.09%	0.08%	0.71	29.00	2.63	0.12	1.46	0.81
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.06	0.00	0.00	0.00
T7 NNOOS Class 8	Diesel	0.11%	0.09%	1.40	37.07	5.52	0.15	2.16	1.36
T7 NOOS Class 8	Diesel	0.04%	0.03%	0.36	13.11	1.31	0.05	0.66	0.37
T7 Other Port Class 8	Diesel	0.01%	0.01%	0.08	2.96	0.25	0.01	0.11	0.05
T7 POAK Class 8	Diesel	0.03%	0.02%	0.37	12.32	1.16	0.04	0.43	0.20
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.06	0.00	0.00	0.00
T7 Public Class 8	Diesel	0.08%	0.07%	1.12	83.11	3.62	0.13	1.65	0.88
T7 Public Class 8	Natural Gas	0.00%	0.00%	0.00	0.02	0.28	0.00	0.00	0.00
T7 Single Concrete/Transit M	Diesel	0.02%	0.02%	0.03	1.89	0.15	0.03	0.23	0.09
T7 Single Concrete/Transit M	Natural Gas	0.00%	0.00%	0.00	0.04	0.71	0.00	0.01	0.00
T7 Single Dump Class 8	Diesel	0.06%	0.05%	0.86	25.02	3.00	0.08	1.12	0.66
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	0.00	0.11	1.90	0.00	0.03	0.01
T7 Single Other Class 8	Diesel	0.06%	0.05%	0.81	22.34	2.99	0.08	1.14	0.68
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	0.00	0.13	2.37	0.00	0.04	0.01
T7 SWCV Class 8	Diesel	0.06%	0.05%	0.23	43.20	0.63	0.20	1.34	0.48
T7 SWCV Class 8	Natural Gas	0.03%	0.03%	0.47	9.24	72.54	0.00	0.69	0.24
T7 Tractor Class 8	Diesel	0.08%	0.07%	1.02	33.56	3.71	0.10	1.43	0.84
T7 Tractor Class 8	Natural Gas	0.01%	0.01%	0.01	0.32	5.58	0.00	0.07	0.02
T7 Utility Class 8	Diesel	0.00%	0.00%	0.01	0.33	0.03	0.00	0.02	0.01
T7IS	Gasoline	0.00%	0.00%	0.39	1.72	14.41	0.01	0.04	0.01
UBUS	Gasoline	0.02%	0.02%	0.02	0.11	1.17	0.02	0.21	0.07
UBUS	Diesel	0.17%	0.17%	2.37	79.65	4.57	0.21	2.22	0.81
UBUS	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
		100%	**100%**	**260**	**1,940**	**9,116**	**32**	**203**	**85**

Existing inYear 2040: Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
93%	7%	

Daily VMT	**3,918,221**						**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%	0.40	15.12	2.46	0.29	1.87	0.68
All Other Buses	Natural Gas	0.01%	0.01%	0.01	0.04	1.91	0.00	0.03	0.01
LDA	Gasoline	29.61%	30.62%	7.29	49.87	1,100.86	5.68	39.29	12.50
LDA	Diesel	0.02%	0.02%	0.01	0.04	0.23	0.00	0.03	0.01
LDA	Electricity	4.45%	4.60%	0.00	0.00	0.00	0.00	4.76	1.36
LDA	Plug-in Hybrid	1.43%	1.48%	0.14	0.33	20.73	0.14	1.50	0.44
LDT1	Gasoline	3.58%	3.70%	1.13	7.30	149.75	0.80	5.22	1.69
LDT1	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Electricity	0.11%	0.12%	0.00	0.00	0.00	0.00	0.12	0.03
LDT1	Plug-in Hybrid	0.08%	0.08%	0.01	0.02	1.13	0.01	0.08	0.02
LDT2	Gasoline	30.90%	31.95%	10.91	63.88	1,384.97	7.14	44.74	14.38
LDT2	Diesel	0.12%	0.12%	0.12	0.28	1.27	0.02	0.21	0.09
LDT2	Electricity	0.91%	0.94%	0.00	0.00	0.00	0.00	0.97	0.28
LDT2	Plug-in Hybrid	0.82%	0.85%	0.08	0.19	11.86	0.08	0.86	0.25
LHD1	Gasoline	1.56%	0.88%	0.54	2.55	79.70	1.00	11.74	4.10
LHD1	Diesel	0.94%	0.53%	7.06	20.87	17.72	0.46	8.75	3.85
LHD1	Electricity	1.49%	0.84%	0.00	0.00	0.00	0.00	6.05	2.01
LHD2	Gasoline	0.17%	0.10%	0.05	0.33	8.89	0.13	1.50	0.52
LHD2	Diesel	0.43%	0.24%	3.76	11.49	9.51	0.25	4.62	2.04
LHD2	Electricity	0.36%	0.20%	0.00	0.00	0.00	0.00	1.65	0.55
MCY	Gasoline	0.47%	0.49%	30.42	18.62	380.65	0.07	0.74	0.29
MDV	Gasoline	17.94%	18.55%	6.54	38.54	821.19	5.02	26.14	8.41
MDV	Diesel	0.19%	0.20%	0.07	0.16	2.29	0.05	0.29	0.10
MDV	Electricity	0.83%	0.86%	0.00	0.00	0.00	0.00	0.89	0.25
MDV	Plug-in Hybrid	0.52%	0.54%	0.05	0.12	7.53	0.05	0.55	0.16
MH	Gasoline	0.05%	0.05%	0.05	0.46	0.70	0.08	0.26	0.09
MH	Diesel	0.03%	0.03%	0.18	5.72	0.53	0.02	0.19	0.09
Motor Coach	Diesel	0.05%	0.05%	0.05	4.47	0.17	0.07	0.53	0.25
OBUS	Gasoline	0.03%	0.03%	0.05	0.31	0.93	0.04	0.15	0.05
OBUS	Electricity	0.02%	0.03%	0.00	0.00	0.00	0.00	0.07	0.02
PTO	Diesel	0.02%	0.01%	0.03	4.94	0.36	0.03	0.01	0.01
PTO	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	0.01	0.15	0.31	0.01	0.09	0.03
SBUS	Diesel	0.01%	0.01%	0.02	0.87	0.09	0.01	0.07	0.03
SBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00	0.04	0.01
SBUS	Natural Gas	0.00%	0.00%	0.00	0.02	0.63	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	0.01	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%	0.01	0.26	0.04	0.01	0.08	0.03
T6 CAIRP Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Instate Delivery Class 4	Diesel	0.05%	0.03%	0.04	1.79	0.25	0.04	0.25	0.09
T6 Instate Delivery Class 4	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.10	0.03
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.19	0.00	0.00	0.00
T6 Instate Delivery Class 5	Diesel	0.04%	0.02%	0.02	1.37	0.19	0.03	0.20	0.07
T6 Instate Delivery Class 5	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.09	0.03
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.15	0.00	0.00	0.00
T6 Instate Delivery Class 6	Diesel	0.08%	0.04%	0.05	2.90	0.39	0.07	0.42	0.15
T6 Instate Delivery Class 6	Electricity	0.06%	0.03%	0.00	0.00	0.00	0.00	0.18	0.06
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.00	0.01	0.31	0.00	0.00	0.00
T6 Instate Delivery Class 7	Diesel	0.04%	0.02%	0.03	2.56	0.26	0.04	0.21	0.08
T6 Instate Delivery Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.05	0.01
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	0.00	0.01	0.29	0.00	0.00	0.00
T6 Instate Other Class 4	Diesel	0.06%	0.04%	0.04	1.81	0.26	0.05	0.33	0.12
T6 Instate Other Class 4	Electricity	0.05%	0.03%	0.00	0.00	0.00	0.00	0.14	0.04
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.18	0.00	0.00	0.00
T6 Instate Other Class 5	Diesel	0.16%	0.09%	0.08	4.24	0.62	0.14	0.83	0.30

Existing inYear 2040: Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
93%	7%	

Daily VMT	**3,918,221**							**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 5	Electricity	0.12%	0.07%	0.00	0.00	0.00	0.00	0.37	0.12
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.00	0.01	0.46	0.00	0.01	0.00
T6 Instate Other Class 6	Diesel	0.10%	0.06%	0.05	2.77	0.40	0.09	0.53	0.19
T6 Instate Other Class 6	Electricity	0.08%	0.04%	0.00	0.00	0.00	0.00	0.23	0.07
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.00	0.01	0.29	0.00	0.01	0.00
T6 Instate Other Class 7	Diesel	0.06%	0.03%	0.04	2.64	0.28	0.05	0.30	0.11
T6 Instate Other Class 7	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.09	0.03
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	0.00	0.01	0.29	0.00	0.01	0.00
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	0.00	0.05	0.01	0.00	0.01	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	0.01	0.00	0.00	0.00
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	0.01	1.07	0.10	0.02	0.11	0.04
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.10	0.00	0.00	0.00
T6 OOS Class 4	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 OOS Class 5	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 OOS Class 6	Diesel	0.00%	0.00%	0.00	0.03	0.00	0.00	0.01	0.00
T6 OOS Class 7	Diesel	0.01%	0.01%	0.01	0.25	0.03	0.01	0.06	0.03
T6 Public Class 4	Diesel	0.00%	0.00%	0.01	0.40	0.03	0.00	0.02	0.01
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.07	0.00	0.00	0.00
T6 Public Class 5	Diesel	0.01%	0.01%	0.02	0.96	0.08	0.01	0.07	0.03
T6 Public Class 5	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.02	0.01
T6 Public Class 5	Natural Gas	0.00%	0.00%	0.00	0.01	0.30	0.00	0.01	0.00
T6 Public Class 6	Diesel	0.01%	0.00%	0.01	0.68	0.05	0.01	0.04	0.02
T6 Public Class 6	Electricity	0.00%	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	0.15	0.00	0.00	0.00
T6 Public Class 7	Diesel	0.02%	0.01%	0.03	1.69	0.13	0.02	0.13	0.05
T6 Public Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.04	0.01
T6 Public Class 7	Natural Gas	0.00%	0.00%	0.00	0.01	0.47	0.00	0.01	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	0.17%	0.09%	0.18	1.18	2.95	0.22	0.84	0.29
T6TS	Electricity	0.14%	0.08%	0.00	0.00	0.00	0.00	0.40	0.13
T7 CAIRP Class 8	Diesel	0.09%	0.05%	0.09	9.96	0.32	0.10	1.21	0.54
T7 CAIRP Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.17	0.05
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.04	0.00	0.00	0.00
T7 NNOOS Class 8	Diesel	0.14%	0.08%	0.14	16.45	0.47	0.14	1.82	0.81
T7 NOOS Class 8	Diesel	0.05%	0.03%	0.05	6.15	0.18	0.05	0.67	0.30
T7 Other Port Class 8	Diesel	0.01%	0.01%	0.01	1.07	0.06	0.01	0.13	0.05
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.02	0.01
T7 POAK Class 8	Diesel	0.03%	0.02%	0.03	3.65	0.18	0.04	0.41	0.16
T7 POAK Class 8	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.05	0.01
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.03	0.00	0.00	0.00
T7 Public Class 8	Diesel	0.05%	0.03%	0.18	13.12	0.80	0.07	0.73	0.28
T7 Public Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.19	0.06
T7 Public Class 8	Natural Gas	0.00%	0.00%	0.00	0.01	0.29	0.00	0.01	0.00
T7 Single Concrete/Transit Mi	Diesel	0.01%	0.01%	0.01	0.67	0.04	0.01	0.11	0.04
T7 Single Concrete/Transit Mi	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.07	0.02
T7 Single Concrete/Transit Mi	Natural Gas	0.00%	0.00%	0.00	0.01	0.20	0.00	0.01	0.00
T7 Single Dump Class 8	Diesel	0.04%	0.02%	0.03	3.73	0.20	0.05	0.44	0.18
T7 Single Dump Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.15	0.05
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	0.00	0.04	0.91	0.00	0.02	0.01

Existing inYear 2040: Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
93%	7%	

Daily VMT	**3,918,221**						**lbs/day**		
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T7 Single Other Class 8	Diesel	0.05%	0.03%	0.05	5.35	0.28	0.06	0.61	0.25
T7 Single Other Class 8	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.19	0.06
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	0.00	0.07	1.42	0.00	0.03	0.01
T7 SWCV Class 8	Diesel	0.01%	0.01%	0.04	6.37	0.10	0.03	0.23	0.08
T7 SWCV Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.31	0.10
T7 SWCV Class 8	Natural Gas	0.05%	0.03%	0.09	2.09	51.08	0.00	1.11	0.38
T7 Tractor Class 8	Diesel	0.09%	0.05%	0.08	9.28	0.38	0.09	1.08	0.45
T7 Tractor Class 8	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.10	0.03
T7 Tractor Class 8	Natural Gas	0.01%	0.00%	0.01	0.14	3.01	0.00	0.08	0.03
T7 Utility Class 8	Diesel	0.00%	0.00%	0.00	0.09	0.01	0.00	0.01	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%	0.03	0.16	1.89	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%	0.01	0.03	1.02	0.01	0.18	0.06
UBUS	Diesel	0.01%	0.01%	0.06	0.34	0.07	0.01	0.14	0.05
UBUS	Electricity	0.14%	0.15%	0.00	0.00	0.00	0.00	1.07	0.34
UBUS	Natural Gas	0.00%	0.00%	0.02	0.02	17.87	0.00	0.05	0.02
		100%	100%	70.58	352.29	4096.56	22.96	181.74	61.28

Year 2040: GP 2040 Update Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
93%	7%	

Daily VMT	**5,108,862**						**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%	0.53	19.71	3.20	0.38	2.43	0.89
All Other Buses	Natural Gas	0.01%	0.01%	0.01	0.06	2.49	0.00	0.04	0.02
LDA	Gasoline	29.61%	30.62%	9.51	65.02	1,435.38	7.40	51.23	16.30
LDA	Diesel	0.02%	0.02%	0.01	0.05	0.30	0.00	0.04	0.01
LDA	Electricity	4.45%	4.60%	0.00	0.00	0.00	0.00	6.20	1.77
LDA	Plug-in Hybrid	1.43%	1.48%	0.18	0.43	27.03	0.18	1.95	0.58
LDT1	Gasoline	3.58%	3.70%	1.47	9.52	195.26	1.04	6.81	2.20
LDT1	Diesel	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00
LDT1	Electricity	0.11%	0.12%	0.00	0.00	0.00	0.00	0.16	0.05
LDT1	Plug-in Hybrid	0.08%	0.08%	0.01	0.02	1.48	0.01	0.11	0.03
LDT2	Gasoline	30.90%	31.95%	14.22	83.29	1,805.83	9.31	58.34	18.75
LDT2	Diesel	0.12%	0.12%	0.16	0.36	1.66	0.03	0.27	0.12
LDT2	Electricity	0.91%	0.94%	0.00	0.00	0.00	0.00	1.27	0.36
LDT2	Plug-in Hybrid	0.82%	0.85%	0.10	0.25	15.46	0.10	1.12	0.33
LHD1	Gasoline	1.56%	0.88%	0.70	3.32	103.91	1.31	15.31	5.35
LHD1	Diesel	0.94%	0.53%	9.20	27.21	23.10	0.60	11.41	5.02
LHD1	Electricity	1.49%	0.84%	0.00	0.00	0.00	0.00	7.89	2.63
LHD2	Gasoline	0.17%	0.10%	0.07	0.44	11.59	0.16	1.95	0.68
LHD2	Diesel	0.43%	0.24%	4.90	14.98	12.39	0.32	6.02	2.67
LHD2	Electricity	0.36%	0.20%	0.00	0.00	0.00	0.00	2.16	0.72
MCY	Gasoline	0.47%	0.49%	39.67	24.28	496.32	0.10	0.96	0.38
MDV	Gasoline	17.94%	18.55%	8.53	50.25	1,070.73	6.55	34.08	10.97
MDV	Diesel	0.19%	0.20%	0.10	0.21	2.98	0.07	0.38	0.13
MDV	Electricity	0.83%	0.86%	0.00	0.00	0.00	0.00	1.16	0.33
MDV	Plug-in Hybrid	0.52%	0.54%	0.07	0.16	9.81	0.06	0.71	0.21
MH	Gasoline	0.05%	0.05%	0.07	0.60	0.92	0.11	0.34	0.12
MH	Diesel	0.03%	0.03%	0.24	7.46	0.69	0.03	0.25	0.12
Motor Coach	Diesel	0.05%	0.05%	0.06	5.83	0.22	0.09	0.69	0.32
OBUS	Gasoline	0.03%	0.03%	0.06	0.40	1.21	0.05	0.20	0.07
OBUS	Electricity	0.02%	0.03%	0.00	0.00	0.00	0.00	0.10	0.03
PTO	Diesel	0.02%	0.01%	0.04	6.44	0.47	0.04	0.01	0.01
PTO	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.00	0.00
SBUS	Gasoline	0.02%	0.02%	0.02	0.19	0.40	0.02	0.12	0.04
SBUS	Diesel	0.01%	0.01%	0.03	1.13	0.12	0.02	0.09	0.04
SBUS	Electricity	0.02%	0.02%	0.00	0.00	0.00	0.00	0.06	0.02
SBUS	Natural Gas	0.00%	0.00%	0.00	0.03	0.82	0.00	0.01	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	0.03	0.00	0.00	0.01	0.00
T6 CAIRP Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 CAIRP Class 7	Diesel	0.02%	0.01%	0.01	0.34	0.05	0.01	0.10	0.04
T6 CAIRP Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.02	0.00
T6 Instate Delivery Class 4	Diesel	0.05%	0.03%	0.05	2.33	0.33	0.05	0.33	0.12
T6 Instate Delivery Class 4	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.14	0.04
T6 Instate Delivery Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.25	0.00	0.00	0.00
T6 Instate Delivery Class 5	Diesel	0.04%	0.02%	0.03	1.78	0.25	0.04	0.27	0.09
T6 Instate Delivery Class 5	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.11	0.04
T6 Instate Delivery Class 5	Natural Gas	0.00%	0.00%	0.00	0.00	0.19	0.00	0.00	0.00
T6 Instate Delivery Class 6	Diesel	0.08%	0.04%	0.06	3.78	0.51	0.09	0.55	0.19
T6 Instate Delivery Class 6	Electricity	0.06%	0.03%	0.00	0.00	0.00	0.00	0.23	0.07
T6 Instate Delivery Class 6	Natural Gas	0.00%	0.00%	0.00	0.01	0.40	0.00	0.01	0.00
T6 Instate Delivery Class 7	Diesel	0.04%	0.02%	0.04	3.34	0.34	0.05	0.28	0.10
T6 Instate Delivery Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.06	0.02
T6 Instate Delivery Class 7	Natural Gas	0.00%	0.00%	0.00	0.02	0.38	0.00	0.01	0.00
T6 Instate Other Class 4	Diesel	0.06%	0.04%	0.05	2.35	0.34	0.07	0.43	0.16
T6 Instate Other Class 4	Electricity	0.05%	0.03%	0.00	0.00	0.00	0.00	0.19	0.06
T6 Instate Other Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.24	0.00	0.01	0.00
T6 Instate Other Class 5	Diesel	0.16%	0.09%	0.11	5.53	0.80	0.18	1.09	0.40

Year 2040: GP 2040 Update Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
93%	7%	

Daily VMT	**5,108,862**						**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 5	Electricity	0.12%	0.07%	0.00	0.00	0.00	0.00	0.48	0.15
T6 Instate Other Class 5	Natural Gas	0.00%	0.00%	0.00	0.01	0.60	0.00	0.01	0.00
T6 Instate Other Class 6	Diesel	0.10%	0.06%	0.07	3.61	0.52	0.11	0.69	0.25
T6 Instate Other Class 6	Electricity	0.08%	0.04%	0.00	0.00	0.00	0.00	0.30	0.10
T6 Instate Other Class 6	Natural Gas	0.00%	0.00%	0.00	0.01	0.38	0.00	0.01	0.00
T6 Instate Other Class 7	Diesel	0.06%	0.03%	0.05	3.44	0.36	0.06	0.39	0.14
T6 Instate Other Class 7	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.11	0.04
T6 Instate Other Class 7	Natural Gas	0.00%	0.00%	0.00	0.02	0.38	0.00	0.01	0.00
T6 Instate Tractor Class 6	Diesel	0.00%	0.00%	0.00	0.06	0.01	0.00	0.01	0.00
T6 Instate Tractor Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Instate Tractor Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.01	0.00	0.00	0.00
T6 Instate Tractor Class 7	Diesel	0.02%	0.01%	0.02	1.40	0.14	0.02	0.14	0.05
T6 Instate Tractor Class 7	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Instate Tractor Class 7	Natural Gas	0.00%	0.00%	0.00	0.00	0.13	0.00	0.00	0.00
T6 OOS Class 4	Diesel	0.00%	0.00%	0.00	0.01	0.00	0.00	0.00	0.00
T6 OOS Class 5	Diesel	0.00%	0.00%	0.00	0.02	0.00	0.00	0.00	0.00
T6 OOS Class 6	Diesel	0.00%	0.00%	0.00	0.04	0.01	0.00	0.01	0.00
T6 OOS Class 7	Diesel	0.01%	0.01%	0.01	0.33	0.04	0.01	0.08	0.03
T6 Public Class 4	Diesel	0.00%	0.00%	0.01	0.52	0.04	0.00	0.03	0.01
T6 Public Class 4	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T6 Public Class 4	Natural Gas	0.00%	0.00%	0.00	0.00	0.10	0.00	0.00	0.00
T6 Public Class 5	Diesel	0.01%	0.01%	0.03	1.25	0.11	0.02	0.10	0.04
T6 Public Class 5	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.03	0.01
T6 Public Class 5	Natural Gas	0.00%	0.00%	0.00	0.01	0.40	0.00	0.01	0.00
T6 Public Class 6	Diesel	0.01%	0.00%	0.02	0.88	0.07	0.01	0.06	0.02
T6 Public Class 6	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.02	0.01
T6 Public Class 6	Natural Gas	0.00%	0.00%	0.00	0.00	0.20	0.00	0.00	0.00
T6 Public Class 7	Diesel	0.02%	0.01%	0.04	2.21	0.16	0.03	0.16	0.06
T6 Public Class 7	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.05	0.01
T6 Public Class 7	Natural Gas	0.00%	0.00%	0.00	0.01	0.61	0.00	0.01	0.00
T6 Utility Class 5	Diesel	0.00%	0.00%	0.00	0.02	0.00	0.00	0.01	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	0.17%	0.09%	0.24	1.54	3.85	0.29	1.09	0.38
T6TS	Electricity	0.14%	0.08%	0.00	0.00	0.00	0.00	0.53	0.17
T7 CAIRP Class 8	Diesel	0.09%	0.05%	0.12	12.99	0.42	0.13	1.58	0.71
T7 CAIRP Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.22	0.07
T7 CAIRP Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.06	0.00	0.00	0.00
T7 NNOOS Class 8	Diesel	0.14%	0.08%	0.18	21.45	0.61	0.19	2.37	1.06
T7 NOOS Class 8	Diesel	0.05%	0.03%	0.07	8.01	0.23	0.07	0.87	0.39
T7 Other Port Class 8	Diesel	0.01%	0.01%	0.01	1.40	0.07	0.01	0.17	0.07
T7 Other Port Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.02	0.01
T7 POAK Class 8	Diesel	0.03%	0.02%	0.04	4.76	0.24	0.05	0.54	0.21
T7 POAK Class 8	Electricity	0.01%	0.00%	0.00	0.00	0.00	0.00	0.06	0.02
T7 POAK Class 8	Natural Gas	0.00%	0.00%	0.00	0.00	0.04	0.00	0.00	0.00
T7 Public Class 8	Diesel	0.05%	0.03%	0.23	17.11	1.04	0.10	0.96	0.36
T7 Public Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.24	0.08
T7 Public Class 8	Natural Gas	0.00%	0.00%	0.00	0.01	0.38	0.00	0.01	0.00
T7 Single Concrete/Transit Mi	Diesel	0.01%	0.01%	0.01	0.87	0.05	0.01	0.14	0.06
T7 Single Concrete/Transit Mi	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.09	0.03
T7 Single Concrete/Transit Mi	Natural Gas	0.00%	0.00%	0.00	0.01	0.26	0.00	0.01	0.00
T7 Single Dump Class 8	Diesel	0.04%	0.02%	0.05	4.86	0.26	0.06	0.58	0.23
T7 Single Dump Class 8	Electricity	0.02%	0.01%	0.00	0.00	0.00	0.00	0.20	0.06
T7 Single Dump Class 8	Natural Gas	0.00%	0.00%	0.00	0.05	1.19	0.00	0.03	0.01

Year 2040: GP 2040 Update Criteria Air Pollutants

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

[1.] Based on data provided Kittelson & Associates Inc., 2023.

	Trucks	Passenger Vehicles
Fleet Mix - San Mateo (K)	**4%**	**96%**
Passenger Vehicles	Trucks	EMFAC default
93%	7%	

Daily VMT	**5,108,862**							**lbs/day**	
Vehicle Type	**Fuel Type**	**Percent of VMT**	**Adjusted Percent for San Mateo**	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
T7 Single Other Class 8	Diesel	0.05%	0.03%	0.07	6.97	0.37	0.08	0.79	0.32
T7 Single Other Class 8	Electricity	0.03%	0.02%	0.00	0.00	0.00	0.00	0.25	0.08
T7 Single Other Class 8	Natural Gas	0.00%	0.00%	0.01	0.09	1.85	0.00	0.05	0.01
T7 SWCV Class 8	Diesel	0.01%	0.01%	0.05	8.31	0.14	0.05	0.30	0.11
T7 SWCV Class 8	Electricity	0.03%	0.01%	0.00	0.00	0.00	0.00	0.40	0.13
T7 SWCV Class 8	Natural Gas	0.05%	0.03%	0.12	2.72	66.60	0.00	1.45	0.49
T7 Tractor Class 8	Diesel	0.09%	0.05%	0.10	12.10	0.50	0.12	1.41	0.59
T7 Tractor Class 8	Electricity	0.01%	0.01%	0.00	0.00	0.00	0.00	0.13	0.04
T7 Tractor Class 8	Natural Gas	0.01%	0.00%	0.01	0.19	3.93	0.00	0.11	0.04
T7 Utility Class 8	Diesel	0.00%	0.00%	0.00	0.12	0.01	0.00	0.02	0.01
T7 Utility Class 8	Electricity	0.00%	0.00%	0.00	0.00	0.00	0.00	0.01	0.00
T7IS	Gasoline	0.00%	0.00%	0.04	0.20	2.46	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%	0.01	0.04	1.33	0.02	0.23	0.08
UBUS	Diesel	0.01%	0.01%	0.08	0.45	0.09	0.01	0.18	0.06
UBUS	Electricity	0.14%	0.15%	0.00	0.00	0.00	0.00	1.39	0.44
UBUS	Natural Gas	0.00%	0.00%	0.03	0.03	23.30	0.00	0.07	0.02
		100%	100%	92.03	459.34	5341.40	29.94	236.97	79.91

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2019
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	0.09023686	1.36259636	0.25165078	0.01128051	0.03327595	0.012	0.0461373	9.14E-02	0.03183645	0.003	0.01614806	5.10E-02	1192.33091	0.00419127	0.1876833	64,141	0.371%
All Other Buses	Natural Gas	0.01042305	0.30013161	3.09186636	0	0.00058185	0.012	0.0461373	5.87E-02	0.00053499	0.003	0.01614806	1.97E-02	1073.83879	0.72949556	0.21890906	830	0.005%
LDA	Gasoline	0.01530634	0.06882302	0.90378829	0.00292279	0.00159989	0.008	0.00677993	1.64E-02	0.00147107	0.002	0.00237298	5.84E-03	295.362746	0.00366328	0.0061982	9,059,972	52.422%
LDA	Diesel	0.03527123	0.33005	0.37968837	0.00230905	0.02221369	0.008	0.00685339	3.71E-02	0.02125274	0.002	0.00239869	2.57E-02	243.905095	0.00163828	0.03839279	30,529	0.177%
LDA	Electricity	0	0	0	0	0	0.008	0.00435954	1.24E-02	0	0.002	0.00152584	3.53E-03	0	0	0	370,112	2.142%
LDA	Plug-in Hybrid	0.00147497	0.00348629	0.21909105	0.00144487	0.00098388	0.008	0.0037207	1.27E-02	0.00090465	0.002	0.00130224	4.21E-03	146.011323	0.00046708	0.00063499	201,713	1.167%
LDT1	Gasoline	0.04564373	0.20667522	1.95243236	0.00345464	0.00250221	0.008	0.00831316	1.88E-02	0.00230125	0.002	0.00290961	7.21E-03	349.10819	0.00979161	0.01352281	746,068	4.317%
LDT1	Diesel	0.32948029	1.71627994	1.74980216	0.00400141	0.2595678	0.008	0.00974693	2.77E-01	0.24833901	0.002	0.00341143	2.54E-01	422.669418	0.01530373	0.06653186	191	0.001%
LDT1	Electricity	0	0	0	0	0	0.008	0.00439457	1.24E-02	0	0.002	0.0015381	3.54E-03	0	0	0	1,489	0.009%
LDT1	Plug-in Hybrid	0.00148565	0.00351155	0.22067637	0.00145534	0.00107671	0.008	0.00371874	1.28E-02	0.00098999	0.002	0.00130156	4.29E-03	147.068798	0.00047142	0.00064206	13	0.000%
LDT2	Gasoline	0.01682603	0.10611928	1.01111408	0.00367151	0.00162213	0.008	0.00794764	1.76E-02	0.00149166	0.002	0.00278167	6.27E-03	371.024169	0.00399448	0.00781007	3,691,162	21.358%
LDT2	Diesel	0.01594744	0.06819664	0.14105965	0.00319887	0.00701135	0.008	0.00792162	2.29E-02	0.00670804	0.002	0.00277257	1.15E-02	337.897344	0.00074073	0.05318799	14,433	0.084%
LDT2	Electricity	0	0	0	0	0	0.008	0.0043492	1.23E-02	0	0.002	0.00152222	3.52E-03	0	0	0	1,032	0.006%
LDT2	Plug-in Hybrid	0.0014536	0.00343578	0.21599352	0.00142409	0.0010437	0.008	0.00372269	1.28E-02	0.00095964	0.002	0.00130294	4.26E-03	143.911039	0.00046381	0.00063479	9,002	0.052%
LHD1	Gasoline	0.05935272	0.2385125	1.43832009	0.00919041	0.00189805	0.008	0.07800002	8.79E-02	0.00174634	0.002	0.02730001	3.10E-02	928.736258	0.01164255	0.0133348	336,732	1.948%
LHD1	Diesel	0.24776536	2.9607525	0.7474862	0.00614123	0.05676349	0.012	0.07800002	1.47E-01	0.05430793	0.003	0.02730001	8.46E-02	648.69946	0.01150823	0.10211096	111,039	0.642%
LHD2	Gasoline	0.05915216	0.28354714	1.38479235	0.01044345	0.00189906	0.008	0.09100003	1.01E-01	0.00174611	0.002	0.03185001	3.56E-02	1055.36143	0.01210184	0.01575783	37,198	0.215%
LHD2	Diesel	0.20223413	2.0462862	0.55266625	0.00753069	0.04515676	0.012	0.09100003	1.48E-01	0.0432033	0.003	0.03185001	7.81E-02	795.468393	0.00939339	0.12521367	44,855	0.260%
MCY	Gasoline	1.44302706	0.70285756	16.5007904	0.00193185	0.00199749	0.004	0.012	1.80E-02	0.00188	0.001	0.0042	7.08E-03	195.222634	0.20593077	0.04514856	56,767	0.328%
MDV	Gasoline	0.02646904	0.15198238	1.21999981	0.00441121	0.00171417	0.008	0.00805101	1.78E-02	0.00157696	0.002	0.00281785	6.39E-03	445.773984	0.00568427	0.01005737	2,045,190	11.834%
MDV	Diesel	0.01258222	0.06645486	0.19418471	0.00410529	0.00618437	0.008	0.00788387	2.21E-02	0.00591683	0.002	0.00275935	1.07E-02	433.642573	0.00058442	0.06825913	35,425	0.205%
MDV	Electricity	0	0	0	0	0	0.008	0.00442935	1.24E-02	0	0.002	0.00155027	3.55E-03	0	0	0	18	0.000%
MDV	Plug-in Hybrid	0.0014774	0.00349203	0.21948831	0.00144732	0.00108074	0.008	0.00371668	1.28E-02	0.0009937	0.002	0.00130084	4.29E-03	146.259111	0.00047282	0.0006488	11,022	0.064%
MH	Gasoline	0.2153827	0.90128713	6.18173836	0.01932942	0.00308388	0.012	0.04501744	6.01E-02	0.00284639	0.003	0.0157561	2.16E-02	1953.33228	0.04051957	0.04519606	5,874	0.034%
MH	Diesel	0.11614871	4.11457091	0.38618374	0.01025578	0.09843782	0.016	0.04478528	1.59E-01	0.09417944	0.004	0.01567485	1.14E-01	1083.32004	0.00539489	0.17052404	2,548	0.015%
Motor Coach	Diesel	0.17747673	4.32936964	0.62334635	0.01663978	0.10785399	0.012	0.07908361	1.99E-01	0.10318828	0.003	0.02767927	1.34E-01	1758.79752	0.00824333	0.27685009	9,228	0.053%
OBUS	Gasoline	0.0677254	0.44383266	1.52746629	0.01789527	0.00097071	0.012	0.0447987	5.78E-02	0.0008932	0.003	0.01567955	1.96E-02	1808.40518	0.01394141	0.02306813	17,849	0.103%
PTO	Diesel	0.30465766	5.6434306	1.14532265	0.02062149	0.10244242	0	0	1.02E-01	0.0980108	0	0	9.80E-02	2179.65709	0.01415056	0.34309706	5,033	0.029%
SBUS	Gasoline	0.4112129	1.74465294	10.1104796	0.00842645	0.00346695	0.008	0.04491714	5.64E-02	0.00318773	0.002	0.015721	2.09E-02	851.534042	0.07638922	0.07512445	3,266	0.019%
SBUS	Diesel	0.07653507	6.03031914	0.22383078	0.01104314	0.03087698	0.012	0.04491714	8.78E-02	0.02954126	0.003	0.015721	4.83E-02	1167.24193	0.00355486	0.18373407	3,813	0.022%
SBUS	Natural Gas	0.05224567	0.64622569	12.6839862	0	0.00367426	0.012	0.04491714	6.06E-02	0.00337835	0.003	0.015721	2.21E-02	1299.394	3.65660487	0.26488997	134	0.001%
T6 CAIRP Class 4	Diesel	0.08784755	2.1737169	0.31179644	0.01078547	0.0743992	0.012	0.04231382	1.29E-01	0.07118072	0.003	0.01480984	8.90E-02	1140.00653	0.00408029	0.17944699	125	0.001%
T6 CAIRP Class 5	Diesel	0.05992534	1.63433027	0.22811691	0.01072807	0.05443978	0.012	0.04231382	1.09E-01	0.05208474	0.003	0.01480984	6.99E-02	1133.93937	0.00278338	0.17849196	171	0.001%
T6 CAIRP Class 6	Diesel	0.08555584	2.13799622	0.31782699	0.0106028	0.07668048	0.012	0.04231382	1.31E-01	0.07336332	0.003	0.01480984	9.12E-02	1120.69876	0.00397385	0.17640777	447	0.003%
T6 CAIRP Class 7	Diesel	0.08481135	2.27508197	0.28918725	0.00998568	0.06942336	0.012	0.04231382	1.24E-01	0.06642013	0.003	0.01480984	8.42E-02	1055.46983	0.00393927	0.16614017	2,804	0.016%
T6 Instate Delivery Class 4	Diesel	0.59496108	7.55017277	1.56250121	0.01195801	0.24061795	0.012	0.04756293	3.00E-01	0.23020893	0.003	0.01664703	2.50E-01	1263.94158	0.0276344	0.19895544	11,788	0.068%
T6 Instate Delivery Class 4	Natural Gas	0.0103841	0.29943898	3.24575461	0	0.00063872	0.012	0.04756293	6.02E-02	0.00058728	0.003	0.01664703	2.02E-02	1111.19651	0.72676944	0.22652468	34	0.000%
T6 Instate Delivery Class 5	Diesel	0.25521981	3.67373973	0.68774855	0.01169047	0.10011212	0.012	0.04756293	1.60E-01	0.09578132	0.003	0.01664703	1.15E-01	1235.66318	0.0118543	0.19450418	9,597	0.056%
T6 Instate Delivery Class 5	Natural Gas	0.0103841	0.29943898	3.24575461	0	0.00063872	0.012	0.04756293	6.02E-02	0.00058728	0.003	0.01664703	2.02E-02	1108.71798	0.72676944	0.22601941	40	0.000%
T6 Instate Delivery Class 6	Diesel	0.40447454	5.16943399	1.06355775	0.01172405	0.16459337	0.012	0.04756293	2.24E-01	0.15747313	0.003	0.01664703	1.77E-01	1239.21305	0.01878679	0.19506296	19,937	0.115%
T6 Instate Delivery Class 6	Natural Gas	0.01042335	0.2949372	3.25650458	0	0.0006646	0.012	0.04756293	6.02E-02	0.00061107	0.003	0.01664703	2.03E-02	1109.40141	0.72951628	0.22615873	62	0.000%
T6 Instate Delivery Class 7	Diesel	0.26824867	4.20913211	0.70580777	0.01162311	0.1136416	0.012	0.04756293	1.73E-01	0.10872551	0.003	0.01664703	1.28E-01	1228.54307	0.01245946	0.19338341	7,892	0.046%
T6 Instate Delivery Class 7	Natural Gas	0.0115213	0.17017706	3.5712466	0	0.00139045	0.012	0.04756293	6.10E-02	0.00127846	0.003	0.01664703	2.09E-02	1089.29352	0.80636063	0.22205961	109	0.001%
T6 Instate Other Class 4	Diesel	0.4866387	7.57858455	1.37111892	0.01119878	0.2476878	0.012	0.04486375	3.05E-01	0.23697294	0.003	0.01570231	2.56E-01	1183.69275	0.02260311	0.18632358	16,160	0.094%
T6 Instate Other Class 4	Natural Gas	0.00797511	0.22677008	2.83141339	0	0.00051465	0.012	0.04486375	5.74E-02	0.00047321	0.003	0.01570231	1.92E-02	965.789581	0.55816765	0.19688252	41	0.000%
T6 Instate Other Class 5	Diesel	0.16108746	2.82166106	0.47969694	0.01106262	0.08118327	0.012	0.04486375	1.38E-01	0.07767132	0.003	0.01570231	9.64E-02	1169.30037	0.0074821	0.18405809	41,474	0.240%
T6 Instate Other Class 5	Natural Gas	0.00794531	0.22939073	2.83380805	0	0.00049903	0.012	0.04486375	5.74E-02	0.00045884	0.003	0.01570231	1.92E-02	964.595217	0.55608151	0.19663905	203	0.001%
T6 Instate Other Class 6	Diesel	0.26802884	4.32427874	0.77674974	0.0110206	0.14025644	0.012	0.04486375	1.97E-01	0.13418901	0.003	0.01570231	1.53E-01	1164.85938	0.01244925	0.18335904	26,214	0.152%
T6 Instate Other Class 6	Natural Gas	0.00799923	0.22465022	2.82947633	0	0.00052729	0.012	0.04486375	5.74E-02	0.00048483	0.003	0.01570231	1.92E-02	964.292282	0.55985514	0.19657729	104	0.001%
T6 Instate Other Class 7	Diesel	0.20061264	3.44506975	0.55493191	0.01097241	0.1082147	0.012	0.04486375	1.65E-01	0.10353338	0.003	0.01570231	1.22E-01	1159.76547	0.00931794	0.18255721	12,352	0.071%
T6 Instate Other Class 7	Natural Gas	0.00863108	0.17340284	2.82100571	0	0.00086481	0.012	0.04486375	5.77E-02	0.00079516	0.003	0.01570231	1.95E-02	931.346168	0.60407756	0.18986101	229	0.001%
T6 Instate Tractor Class 6	Diesel	0.23018066	3.63339609	0.67394967	0.01116863	0.11906074	0.012	0.04486375	1.76E-01	0.11391023	0.003	0.01570231	1.33E-01	1180.5059	0.0106913	0.18582194	512	0.003%
T6 Instate Tractor Class 6	Natural Gas	0.00793434	0.23035491	2.83468909	0	0.00049328	0.012	0.04486375	5.74E-02	0.00045356	0.003	0.01570231	1.92E-02	960.642415	0.55531398	0.19583324	3	0.000%
T6 Instate Tractor Class 7	Diesel	0.14079338	3.30087665	0.42297878	0.01043841	0.07437769	0.012	0.04486375	1.31E-01	0.07116015	0.003	0.01570231	8.99E-02	1103.32279	0.00653949	0.17367264	3,624	0.021%
T6 Instate Tractor Class 7	Natural Gas	0.0081321	0.21464828	2.83530701	0	0.00059941	0.012	0.04486375	5.75E-02	0.00055114	0.003	0.01570231	1.93E-02	930.923185	0.56915475	0.18977478	37	0.000%
T6 OOS Class 4	Diesel	0.08784755	2.1737169	0.31179644	0.01078547	0.0743992	0.012	0.04231382	1.29E-01	0.07118072	0.003	0.01480984	8.90E-02	1140.00653	0.00408029	0.17944699	70	0.000%
T6 OOS Class 5	Diesel	0.05992535	1.63433027	0.22811691	0.01072807	0.05443978	0.012	0.04231382	1.09E-01	0.05208474	0.003	0.01480984	6.99E-02	1133.93937	0.00278338	0.17849196	96	0.001%
T6 OOS Class 6	Diesel	0.08555584	2.13799622	0.31782699	0.0106028	0.07668048	0.012	0.04231382	1.31E-01	0.07336332	0.003	0.01480984	9.12E-02	1120.69876	0.00397385	0.17640777	250	0.001%
T6 OOS Class 7	Diesel	0.09387198	2.39103639	0.31939947	0.00997905	0.07658002	0.012	0.04231382	1.31E-01	0.07326721	0.003	0.01480984	9.11E-02	1054.76907	0.00436011	0.16602986	1,818	0.011%
T6 Public Class 4	Diesel	0.10856159	8.30400678	0.24755965	0.01224814	0.04002355	0.012	0.04616939	9.82E-02	0.03829215	0.003	0.01615929	5.75E-02	1294.60803	0.0050424	0.20378261	1,177	0.007%
T6 Public Class 4	Natural Gas	0.01227588	0.11442081	3.05156654	0	0.00152723	0.012	0.04616939	5.97E-02	0.00140423	0.003	0.01615929	2.06E-02	1065.16906	0.85917219	0.21714168	23	0.000%
T6 Public Class 5	Diesel	0.05693536	3.55208906	0.16155508	0.01165363	0.01691637	0.012	0.04616939	7.51E-02	0.01618457	0.003	0.01615929	3.53E-02	1231.76886	0.0026445	0.19389118	3,854	0.022%
T6 Public Class 5	Natural Gas	0.01205547	0.15141065	3.08898854	0	0.00135111	0.012	0.04616939	5.95E-02	0.00124229	0.003	0.01615929	2.04E-02	1051.4511	0.84374607	0.21434519	299	0.002%

T6 Public Class 6	Diesel	0.12163152	8.13689371	0.27605642	0.01214251	0.05174469	0.012	0.04616939	1.10E-01	0.04950624	0.003	0.01615929	6.87E-02	1283.4429	0.00564947	0.20202512	2,356	0.014%
T6 Public Class 6	Natural Gas	0.01199717	0.16096717	3.09025512	0	0.00130571	0.012	0.04616939	5.95E-02	0.00120056	0.003	0.01615929	2.04E-02	1048.23906	0.83966619	0.21369039	58	0.000%
T6 Public Class 7	Diesel	0.14343546	9.6234489	0.30160376	0.01246516	0.06574629	0.012	0.04616939	1.24E-01	0.06290213	0.003	0.01615929	8.21E-02	1317.54708	0.00666221	0.20739342	6,369	0.037%
T6 Public Class 7	Natural Gas	0.01239707	0.09500838	3.06630431	0	0.00161921	0.012	0.04616939	5.98E-02	0.0014888	0.003	0.01615929	2.06E-02	1066.63726	0.86765436	0.21744098	279	0.002%
T6 Utility Class 5	Diesel	0.02450442	1.27008519	0.09541822	0.01078078	0.00614293	0.012	0.0454967	6.36E-02	0.00587719	0.003	0.01592385	2.48E-02	1139.51065	0.00113817	0.17936893	334	0.002%
T6 Utility Class 5	Natural Gas	0.00934313	0.26930485	2.89365192	0	0.00051779	0.012	0.0454967	5.80E-02	0.00047609	0.003	0.01592385	1.94E-02	1011.11173	0.65391293	0.20612174	5	0.000%
T6 Utility Class 6	Diesel	0.03709456	2.0788349	0.12396768	0.0110259	0.01076047	0.012	0.0454967	6.83E-02	0.01029498	0.003	0.01592385	2.92E-02	1165.41917	0.00172295	0.18344716	63	0.000%
T6 Utility Class 6	Natural Gas	0.00934313	0.26930485	2.89365192	0	0.00051779	0.012	0.0454967	5.80E-02	0.00047609	0.003	0.01592385	1.94E-02	994.839253	0.65391293	0.20280449	1	0.000%
T6 Utility Class 7	Diesel	0.02797374	1.91513665	0.10022891	0.01102339	0.01031175	0.012	0.0454967	6.78E-02	0.00986567	0.003	0.01592385	2.88E-02	1165.15346	0.00129931	0.18340533	87	0.001%
T6 Utility Class 7	Natural Gas	0.00934313	0.26930485	2.89365192	0	0.00051779	0.012	0.0454967	5.80E-02	0.00047609	0.003	0.01592385	1.94E-02	1001.30262	0.65391293	0.20412209	2	0.000%
T6TS	Gasoline	0.21451971	1.15440498	4.79295976	0.01865882	0.00189729	0.012	0.04501744	5.89E-02	0.00174932	0.003	0.0157561	2.05E-02	1885.56546	0.04022217	0.04919389	41,022	0.237%
T7 CAIRP Class 8	Diesel	0.08806958	3.57408466	0.32381457	0.01514726	0.06620886	0.03600001	0.07731106	1.80E-01	0.06334469	0.009	0.02705887	9.94E-02	1601.03976	0.0040906	0.25201764	16,234	0.094%
T7 CAIRP Class 8	Natural Gas	0.01319225	0.26157553	4.59554446	0	0.0017359	0.03600001	0.07409835	1.12E-01	0.0015961	0.009	0.02593442	3.65E-02	1180.99757	0.92330803	0.24075408	28	0.000%
T7 NNOOS Class 8	Diesel	0.14512589	3.8417573	0.57207431	0.0152459	0.10942661	0.03600001	0.0781827	2.24E-01	0.10469286	0.009	0.02736394	1.41E-01	1611.46586	0.00674072	0.2536588	19,308	0.112%
T7 NOOS Class 8	Diesel	0.10285462	3.73929593	0.37499636	0.01514619	0.0737909	0.03600001	0.07747096	1.87E-01	0.07059874	0.009	0.02711483	1.07E-01	1600.92743	0.00477733	0.25199996	7,016	0.041%
T7 Other Port Class 8	Diesel	0.11913469	4.45857695	0.38018881	0.01630522	0.03110788	0.03600001	0.09404076	1.61E-01	0.02976217	0.009	0.03291427	7.17E-02	1723.43466	0.0055335	0.27128367	1,328	0.008%
T7 POAK Class 8	Diesel	0.14737656	4.96540185	0.4688535	0.01632274	0.04140362	0.03600001	0.09604652	1.73E-01	0.03961252	0.009	0.03361628	8.22E-02	1725.2861	0.00684526	0.2715751	4,964	0.029%
T7 POAK Class 8	Natural Gas	0.01695642	0.70398211	11.0161129	0	0.00135516	0.03600001	0.0852388	1.23E-01	0.00124602	0.009	0.02983358	4.01E-02	1492.29997	1.18675744	0.30421511	11	0.000%
T7 Public Class 8	Diesel	0.15636703	11.6208712	0.50601442	0.01858935	0.07508387	0.03600001	0.11901788	2.30E-01	0.07183578	0.009	0.04165626	1.22E-01	1964.86386	0.00726284	0.30928673	14,309	0.083%
T7 Public Class 8	Natural Gas	0.02621664	0.7743524	10.7404495	0	0.00242358	0.03600001	0.10598133	1.44E-01	0.00222839	0.009	0.03709346	4.83E-02	1669.71212	1.83486766	0.34038174	53	0.000%
T7 Single Concrete/Transit Mix Cla	Diesel	0.01741355	1.11827576	0.09040432	0.01619691	0.01920311	0.03600001	0.08115877	1.36E-01	0.01837239	0.009	0.02840557	5.58E-02	1711.98678	0.00080881	0.26948167	3,381	0.020%
T7 Single Concrete/Transit Mix Cla	Natural Gas	0.01516677	0.35905678	6.65029162	0	0.00182789	0.03600001	0.08072408	1.19E-01	0.00168068	0.009	0.02825343	3.89E-02	1265.94428	1.06150241	0.25807102	213	0.001%
T7 Single Dump Class 8	Diesel	0.1660726	4.85762583	0.58262447	0.01606351	0.09306281	0.03600001	0.08782037	2.17E-01	0.08903695	0.009	0.03073713	1.29E-01	1697.88672	0.00771364	0.2672622	10,305	0.060%
T7 Single Dump Class 8	Natural Gas	0.0151328	0.42671798	7.6384999	0	0.00166932	0.03600001	0.08267386	1.20E-01	0.00153488	0.009	0.02893585	3.95E-02	1313.2269	1.05912467	0.26770989	497	0.003%
T7 Single Other Class 8	Diesel	0.15784723	4.32777949	0.57900138	0.0160521	0.09652549	0.03600001	0.08756635	2.20E-01	0.09234984	0.009	0.03064822	1.32E-01	1696.68016	0.00733159	0.26707228	10,326	0.060%
T7 Single Other Class 8	Natural Gas	0.01513986	0.42905485	7.56444482	0	0.00167724	0.03600001	0.08269895	1.20E-01	0.00154216	0.009	0.02894463	3.95E-02	1299.84827	1.05961838	0.26498257	627	0.004%
T7 SWCV Class 8	Diesel	0.04377787	8.24370699	0.12018721	0.03889449	0.01019477	0.03600001	0.21000006	2.56E-01	0.00975375	0.009	0.07350002	9.23E-02	4111.08307	0.00203337	0.64712038	10,484	0.061%
T7 SWCV Class 8	Natural Gas	0.16882529	3.35297856	26.3169916	0	0.0035084	0.03600001	0.21000006	2.50E-01	0.00322585	0.009	0.07350002	8.57E-02	1803.55406	6.1069263	0.36766629	5,515	0.032%
T7 Tractor Class 8	Diesel	0.14878377	4.87798154	0.53921417	0.01511066	0.08692597	0.03600001	0.08537644	2.08E-01	0.08316559	0.009	0.02988175	1.22E-01	1597.17173	0.00691062	0.25140878	13,764	0.080%
T7 Tractor Class 8	Natural Gas	0.01422534	0.56368257	9.75574144	0	0.00124061	0.03600001	0.0784622	1.16E-01	0.0011407	0.009	0.02746177	3.76E-02	1222.10413	0.99561278	0.24913392	1,144	0.007%
T7 Utility Class 8	Diesel	0.04099307	2.46174933	0.19832984	0.01681248	0.01136378	0.03600001	0.09839523	1.46E-01	0.01087219	0.009	0.03443833	5.43E-02	1777.05075	0.00190402	0.27972331	267	0.002%
T7IS	Gasoline	1.23904181	5.42401847	45.5168532	0.0232596	0.00269846	0.02000001	0.09164384	1.14E-01	0.00251227	0.005	0.03207534	3.96E-02	2350.49649	0.18489648	0.1721445	634	0.004%
UBUS	Gasoline	0.00787002	0.05339247	0.56692448	0.01046387	0.00071715	0.00829031	0.09237901	1.01E-01	0.00065939	0.00207258	0.03233265	3.51E-02	1057.42535	0.00263456	0.00627767	4,118	0.024%
UBUS	Diesel	0.16158143	5.4205765	0.3110225	0.01442431	0.0090402	0.0317932	0.11000003	1.51E-01	0.00864913	0.0079483	0.03850001	5.51E-02	1523.64316	0.00750504	0.23983474	29,399	0.170%
UBUS	Electricity	0	0	0	0	0	0.03600001	0.05500002	9.10E-02	0	0.009	0.01925001	2.83E-02	0	0	0	15	0.000%
																	17,282,737	100.000%

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2019
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	1.989E-04	3.004E-03	5.548E-04	2.487E-05	7.336E-05	2.646E-05	1.017E-04	2.015E-04	7.019E-05	6.614E-06	3.560E-05	1.124E-04	2.629E+00	9.240E-06	4.138E-04	
All Other Buses	Natural Gas	2.298E-05	6.617E-04	6.816E-03	0.000E+00	1.283E-06	2.646E-05	1.017E-04	1.295E-04	1.179E-06	6.614E-06	3.560E-05	4.339E-05	2.367E+00	1.608E-03	4.826E-04	
LDA	Gasoline	3.374E-05	1.517E-04	1.992E-03	6.444E-06	3.527E-06	1.764E-05	1.495E-05	3.611E-05	3.243E-06	4.409E-06	5.231E-06	1.288E-05	6.512E-01	8.076E-06	1.366E-05	
LDA	Diesel	7.776E-05	7.276E-04	8.371E-04	5.091E-06	4.897E-05	1.764E-05	1.511E-05	8.172E-05	4.685E-05	4.409E-06	5.288E-06	5.655E-05	5.377E-01	3.612E-06	8.464E-05	
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.611E-06	2.725E-05	0.000E+00	4.409E-06	3.364E-06	7.773E-06	0.000E+00	0.000E+00	0.000E+00	
LDA	Plug-in Hybrid	3.252E-06	7.686E-06	4.830E-04	3.185E-06	2.169E-06	1.764E-05	8.203E-06	2.801E-05	1.994E-06	4.409E-06	2.871E-06	9.275E-06	3.219E-01	1.030E-06	1.400E-06	
LDT1	Gasoline	1.006E-04	4.556E-04	4.304E-03	7.616E-06	5.516E-06	1.764E-05	1.833E-05	4.148E-05	5.073E-06	4.409E-06	6.415E-06	1.590E-05	7.696E-01	2.159E-05	2.981E-05	
LDT1	Diesel	7.264E-04	3.784E-03	3.858E-03	8.821E-06	5.722E-04	1.764E-05	2.149E-05	6.114E-04	5.475E-04	4.409E-06	7.521E-06	5.594E-04	9.318E-01	3.374E-05	1.467E-04	
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.688E-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	3.275E-06	7.742E-06	4.865E-04	3.208E-06	2.374E-06	1.764E-05	8.198E-06	2.821E-05	2.183E-06	4.409E-06	2.869E-06	9.461E-06	3.242E-01	1.039E-06	1.415E-06	
LDT2	Gasoline	3.709E-05	2.340E-04	2.229E-03	8.094E-06	3.576E-06	1.764E-05	1.752E-05	3.873E-05	3.289E-06	4.409E-06	6.132E-06	1.383E-05	8.180E-01	8.806E-06	1.722E-05	
LDT2	Diesel	3.516E-05	1.503E-04	3.110E-04	7.052E-06	1.546E-05	1.764E-05	1.746E-05	5.056E-05	1.479E-05	4.409E-06	6.112E-06	2.531E-05	7.449E-01	1.633E-06	1.173E-04	
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.588E-06	2.723E-05	0.000E+00	4.409E-06	3.356E-06	7.765E-06	0.000E+00	0.000E+00	0.000E+00	
LDT2	Plug-in Hybrid	3.205E-06	7.575E-06	4.762E-04	3.140E-06	2.301E-06	1.764E-05	8.207E-06	2.814E-05	2.116E-06	4.409E-06	2.872E-06	9.397E-06	3.173E-01	1.023E-06	1.399E-06	
LHD1	Gasoline	1.308E-04	5.258E-04	3.171E-03	2.026E-05	4.184E-06	1.764E-05	1.720E-04	1.938E-04	3.850E-06	4.409E-06	6.019E-05	6.844E-05	2.047E+00	2.567E-05	2.940E-05	
LHD1	Diesel	5.462E-04	6.527E-03	1.648E-03	1.354E-05	1.251E-04	2.646E-05	1.720E-04	3.236E-04	1.197E-04	6.614E-06	6.019E-05	1.865E-04	1.430E+00	2.537E-05	2.251E-04	
LHD2	Gasoline	1.304E-04	6.251E-04	3.053E-03	2.302E-05	4.187E-06	1.764E-05	2.006E-04	2.224E-04	3.849E-06	4.409E-06	7.022E-05	7.848E-05	2.327E+00	2.668E-05	3.474E-05	
LHD2	Diesel	4.458E-04	4.511E-03	1.218E-03	1.660E-05	9.955E-05	2.646E-05	2.006E-04	3.266E-04	9.525E-05	6.614E-06	7.022E-05	1.721E-04	1.754E+00	2.071E-05	2.760E-04	
MCY	Gasoline	3.181E-03	1.550E-03	3.638E-02	4.259E-06	4.404E-06	8.818E-06	2.646E-05	3.968E-05	4.145E-06	2.205E-06	9.259E-06	1.561E-05	4.304E-01	4.540E-04	9.953E-05	
MDV	Gasoline	5.835E-05	3.351E-04	2.690E-03	9.725E-06	3.779E-06	1.764E-05	1.775E-05	3.917E-05	3.477E-06	4.409E-06	6.212E-06	1.410E-05	9.828E-01	1.253E-05	2.217E-05	
MDV	Diesel	2.774E-05	1.465E-04	4.281E-04	9.051E-06	1.363E-05	1.764E-05	1.738E-05	4.865E-05	1.304E-05	4.409E-06	6.083E-06	2.354E-05	9.560E-01	1.288E-06	1.505E-04	
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.765E-06	2.740E-05	0.000E+00	4.409E-06	3.418E-06	7.827E-06	0.000E+00	0.000E+00	0.000E+00	
MDV	Plug-in Hybrid	3.257E-06	7.699E-06	4.839E-04	3.191E-06	2.383E-06	1.764E-05	8.194E-06	2.821E-05	2.191E-06	4.409E-06	2.868E-06	9.468E-06	3.224E-01	1.042E-06	1.430E-06	
MH	Gasoline	4.748E-04	1.987E-03	1.363E-02	4.261E-05	6.799E-06	2.646E-05	9.925E-05	1.325E-04	6.275E-06	6.614E-06	3.474E-05	4.762E-05	4.306E+00	8.933E-05	9.964E-05	
MH	Diesel	2.561E-04	9.071E-03	8.514E-04	2.261E-05	2.170E-04	3.527E-05	9.873E-05	3.510E-04	2.076E-04	8.818E-06	3.456E-05	2.510E-04	2.388E+00	1.189E-05	3.759E-04	
Motor Coach	Diesel	3.913E-04	9.545E-03	1.374E-03	3.668E-05	2.378E-04	2.646E-05	1.743E-04	4.386E-04	2.275E-04	6.614E-06	6.102E-05	2.951E-04	3.877E+00	1.817E-05	6.103E-04	
OBUS	Gasoline	1.493E-04	9.785E-04	3.367E-03	3.945E-05	2.140E-06	2.646E-05	9.876E-05	1.274E-04	1.969E-06	6.614E-06	3.457E-05	4.315E-05	3.987E+00	3.074E-05	5.086E-05	
PTO	Diesel	6.716E-04	1.244E-02	2.525E-03	4.546E-05	2.258E-04	0.000E+00	0.000E+00	2.258E-04	2.161E-04	0.000E+00	0.000E+00	2.161E-04	4.805E+00	3.120E-05	7.564E-04	
SBUS	Gasoline	9.066E-04	3.846E-03	2.229E-02	1.858E-05	7.643E-06	1.764E-05	9.902E-05	1.243E-04	7.028E-06	4.409E-06	3.466E-05	4.610E-05	1.877E+00	1.684E-04	1.656E-04	
SBUS	Diesel	1.687E-04	1.329E-02	4.935E-04	2.435E-05	6.807E-05	2.646E-05	9.902E-05	1.936E-04	6.513E-05	6.614E-06	3.466E-05	1.064E-04	2.573E+00	7.837E-06	4.051E-04	
SBUS	Natural Gas	1.152E-04	1.425E-03	2.796E-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	2.865E+00	8.061E-03	5.840E-04	
T6 CAIRP Class 4	Diesel	1.937E-04	4.792E-03	6.874E-04	2.378E-05	1.640E-04	2.646E-05	9.329E-05	2.838E-04	1.569E-04	6.614E-06	3.265E-05	1.962E-04	2.513E+00	8.995E-06	3.956E-04	
T6 CAIRP Class 5	Diesel	1.321E-04	3.603E-03	5.029E-04	2.365E-05	1.200E-04	2.646E-05	9.329E-05	2.398E-04	1.148E-04	6.614E-06	3.265E-05	1.541E-04	2.500E+00	6.136E-06	3.935E-04	
T6 CAIRP Class 6	Diesel	1.886E-04	4.713E-03	7.007E-04	2.337E-05	1.690E-04	2.646E-05	9.329E-05	2.888E-04	1.617E-04	6.614E-06	3.265E-05	2.010E-04	2.471E+00	8.761E-06	3.889E-04	
T6 CAIRP Class 7	Diesel	1.870E-04	5.016E-03	6.375E-04	2.201E-05	1.531E-04	2.646E-05	9.329E-05	2.728E-04	1.464E-04	6.614E-06	3.265E-05	1.857E-04	2.327E+00	8.685E-06	3.663E-04	
T6 Instate Delivery Class 4	Diesel	1.312E-03	1.665E-02	3.445E-03	2.636E-05	5.305E-04	2.646E-05	1.049E-04	6.618E-04	5.075E-04	6.614E-06	3.670E-05	5.508E-04	2.786E+00	6.092E-05	4.386E-04	
T6 Instate Delivery Class 4	Natural Gas	2.289E-05	6.601E-04	7.156E-03	0.000E+00	1.408E-06	2.646E-05	1.049E-04	1.327E-04	1.295E-06	6.614E-06	3.670E-05	4.461E-05	2.450E+00	1.602E-03	4.994E-04	
T6 Instate Delivery Class 5	Diesel	5.627E-04	8.099E-03	1.516E-03	2.577E-05	2.207E-04	2.646E-05	1.049E-04	3.520E-04	2.112E-04	6.614E-06	3.670E-05	2.545E-04	2.724E+00	2.613E-05	4.288E-04	
T6 Instate Delivery Class 5	Natural Gas	2.289E-05	6.601E-04	7.156E-03	0.000E+00	1.408E-06	2.646E-05	1.049E-04	1.327E-04	1.295E-06	6.614E-06	3.670E-05	4.461E-05	2.444E+00	1.602E-03	4.983E-04	
T6 Instate Delivery Class 6	Diesel	8.917E-04	1.140E-02	2.345E-03	2.585E-05	3.629E-04	2.646E-05	1.049E-04	4.942E-04	3.472E-04	6.614E-06	3.670E-05	3.905E-04	2.732E+00	4.142E-05	4.300E-04	
T6 Instate Delivery Class 6	Natural Gas	2.298E-05	6.502E-04	7.179E-03	0.000E+00	1.465E-06	2.646E-05	1.049E-04	1.328E-04	1.347E-06	6.614E-06	3.670E-05	4.466E-05	2.446E+00	1.608E-03	4.986E-04	
T6 Instate Delivery Class 7	Diesel	5.914E-04	9.279E-03	1.556E-03	2.562E-05	2.505E-04	2.646E-05	1.049E-04	3.818E-04	2.397E-04	6.614E-06	3.670E-05	2.830E-04	2.708E+00	2.747E-05	4.263E-04	
T6 Instate Delivery Class 7	Natural Gas	2.540E-05	3.752E-04	7.873E-03	0.000E+00	3.065E-06	2.646E-05	1.049E-04	1.344E-04	2.818E-06	6.614E-06	3.670E-05	4.613E-05	2.401E+00	1.778E-03	4.896E-04	
T6 Instate Other Class 4	Diesel	1.073E-03	1.671E-02	3.023E-03	2.469E-05	5.461E-04	2.646E-05	9.891E-05	6.714E-04	5.224E-04	6.614E-06	3.462E-05	5.637E-04	2.610E+00	4.983E-05	4.108E-04	
T6 Instate Other Class 4	Natural Gas	1.758E-05	4.999E-04	6.242E-03	0.000E+00	1.135E-06	2.646E-05	9.891E-05	1.265E-04	1.043E-06	6.614E-06	3.462E-05	4.227E-05	2.129E+00	1.231E-03	4.340E-04	
T6 Instate Other Class 5	Diesel	3.551E-04	6.221E-03	1.058E-03	2.439E-05	1.790E-04	2.646E-05	9.891E-05	3.043E-04	1.712E-04	6.614E-06	3.462E-05	2.125E-04	2.578E+00	1.650E-05	4.058E-04	
T6 Instate Other Class 5	Natural Gas	1.752E-05	5.057E-04	6.247E-03	0.000E+00	1.100E-06	2.646E-05	9.891E-05	1.265E-04	1.012E-06	6.614E-06	3.462E-05	4.224E-05	2.127E+00	1.226E-03	4.335E-04	
T6 Instate Other Class 6	Diesel	5.909E-04	9.533E-03	1.712E-03	2.430E-05	3.092E-04	2.646E-05	9.891E-05	4.346E-04	2.958E-04	6.614E-06	3.462E-05	3.371E-04	2.568E+00	2.745E-05	4.042E-04	
T6 Instate Other Class 6	Natural Gas	1.764E-05	4.953E-04	6.238E-03	0.000E+00	1.162E-06	2.646E-05	9.891E-05	1.265E-04	1.069E-06	6.614E-06	3.462E-05	4.230E-05	2.126E+00	1.234E-03	4.334E-04	
T6 Instate Other Class 7	Diesel	4.423E-04	7.595E-03	1.223E-03	2.419E-05	2.386E-04	2.646E-05	9.891E-05	3.639E-04	2.282E-04	6.614E-06	3.462E-05	2.695E-04	2.557E+00	2.054E-05	4.025E-04	
T6 Instate Other Class 7	Natural Gas	1.903E-05	3.823E-04	6.219E-03	0.000E+00	1.907E-06	2.646E-05	9.891E-05	1.273E-04	1.753E-06	6.614E-06	3.462E-05	4.298E-05	2.053E+00	1.332E-03	4.186E-04	
T6 Instate Tractor Class 6	Diesel	5.075E-04	8.010E-03	1.486E-03	2.462E-05	2.625E-04	2.646E-05	9.891E-05	3.878E-04	2.511E-04	6.614E-06	3.462E-05	2.924E-04	2.603E+00	2.357E-05	4.097E-04	
T6 Instate Tractor Class 6	Natural Gas	1.749E-05	5.078E-04	6.249E-03	0.000E+00	1.087E-06	2.646E-05	9.891E-05	1.264E-04	9.999E-07	6.614E-06	3.462E-05	4.223E-05	2.118E+00	1.224E-03	4.317E-04	
T6 Instate Tractor Class 7	Diesel	3.104E-04	7.277E-03	9.325E-04	2.301E-05	1.640E-04	2.646E-05	9.891E-05	2.893E-04	1.569E-04	6.614E-06	3.462E-05	1.981E-04	2.432E+00	1.442E-05	3.829E-04	
T6 Instate Tractor Class 7	Natural Gas	1.793E-05	4.732E-04	6.251E-03	0.000E+00	1.321E-06	2.646E-05	9.891E-05	1.267E-04	1.215E-06	6.614E-06	3.462E-05	4.245E-05	2.052E+00	1.255E-03	4.184E-04	
T6 OOS Class 4	Diesel	1.937E-04	4.792E-03	6.874E-04	2.378E-05	1.640E-04	2.646E-05	9.329E-05	2.838E-04	1.569E-04	6.614E-06	3.265E-05	1.962E-04	2.513E+00	8.995E-06	3.956E-04	
T6 OOS Class 5	Diesel	1.321E-04	3.603E-03	5.029E-04	2.365E-05	1.200E-04	2.646E-05	9.329E-05	2.398E-04	1.148E-04	6.614E-06	3.265E-05	1.541E-04	2.500E+00	6.136E-06	3.935E-04	
T6 OOS Class 6	Diesel	1.886E-04	4.713E-03	7.007E-04	2.337E-05	1.690E-04	2.646E-05	9.329E-05	2.888E-04	1.617E-04	6.614E-06	3.265E-05	2.010E-04	2.471E+00	8.761E-06	3.889E-04	
T6 OOS Class 7	Diesel	2.070E-04	5.271E-03	7.041E-04	2.200E-05	1.688E-04	2.646E-05	9.329E-05	2.886E-04	1.615E-04	6.614E-06	3.265E-05	2.008E-04	2.325E+00	9.612E-06	3.660E-04	
T6 Public Class 4	Diesel	2.393E-04	1.831E-02	5.458E-04	2.700E-05	8.824E-05	2.646E-05	1.018E-04	2.165E-04	8.442E-05	6.614E-06	3.562E-05	1.267E-04	2.854E+00	1.112E-05	4.493E-04	
T6 Public Class 4	Natural Gas	2.706E-05	2.523E-04	6.727E-03	0.000E+00	3.367E-06	2.646E-05	1.018E-04	1.316E-04	3.096E-06	6.614E-06	3.562E-05	4.533E-05	2.348E+00	1.894E-03	4.787E-04	
T6 Public Class 5	Diesel	1.255E-04	7.831E-03	3.562E-04	2.569E-05	3.729E-05	2.646E-05	1.018E-04	1.655E-04	3.568E-05	6.614E-06	3.562E-05	7.792E-05	2.716E+00	5.830E-06	4.275E-04	
T6 Public Class 5	Natural Gas	2.658E-05	3.338E-04	6.810E-03	0.000E+00	2.979E-06	2.646E-05	1.018E-04	1.312E-04	2.739E-06	6.614E-06	3.562E-05	4.498E-05	2.318E+00	1.860E-03	4.725E-04	

T6 Public Class 6	Diesel	2.681E-04	1.794E-02	6.086E-04	2.677E-05	1.141E-04	2.646E-05	1.018E-04	2.423E-04	1.091E-04	6.614E-06	3.562E-05	1.514E-04	2.829E+00	1.245E-05	4.454E-04	
T6 Public Class 6	Natural Gas	2.645E-05	3.549E-04	6.813E-03	0.000E+00	2.879E-06	2.646E-05	1.018E-04	1.311E-04	2.647E-06	6.614E-06	3.562E-05	4.489E-05	2.311E+00	1.851E-03	4.711E-04	
T6 Public Class 7	Diesel	3.162E-04	2.122E-02	6.649E-04	2.748E-05	1.449E-04	2.646E-05	1.018E-04	2.732E-04	1.387E-04	6.614E-06	3.562E-05	1.809E-04	2.905E+00	1.469E-05	4.572E-04	
T6 Public Class 7	Natural Gas	2.733E-05	2.095E-04	6.760E-03	0.000E+00	3.570E-06	2.646E-05	1.018E-04	1.318E-04	3.282E-06	6.614E-06	3.562E-05	4.552E-05	2.352E+00	1.913E-03	4.794E-04	
T6 Utility Class 5	Diesel	5.402E-05	2.800E-03	2.104E-04	2.377E-05	1.354E-05	2.646E-05	1.003E-04	1.403E-04	1.296E-05	6.614E-06	3.511E-05	5.468E-05	2.512E+00	2.509E-06	3.954E-04	
T6 Utility Class 5	Natural Gas	2.060E-05	5.937E-04	6.379E-03	0.000E+00	1.142E-06	2.646E-05	1.003E-04	1.279E-04	1.050E-06	6.614E-06	3.511E-05	4.277E-05	2.229E+00	1.442E-03	4.544E-04	
T6 Utility Class 6	Diesel	8.178E-05	4.583E-03	2.733E-04	2.431E-05	2.372E-05	2.646E-05	1.003E-04	1.505E-04	2.270E-05	6.614E-06	3.511E-05	6.442E-05	2.569E+00	3.798E-06	4.044E-04	
T6 Utility Class 6	Natural Gas	2.060E-05	5.937E-04	6.379E-03	0.000E+00	1.142E-06	2.646E-05	1.003E-04	1.279E-04	1.050E-06	6.614E-06	3.511E-05	4.277E-05	2.193E+00	1.442E-03	4.471E-04	
T6 Utility Class 7	Diesel	6.167E-05	4.222E-03	2.210E-04	2.430E-05	2.273E-05	2.646E-05	1.003E-04	1.495E-04	2.175E-05	6.614E-06	3.511E-05	6.347E-05	2.569E+00	2.864E-06	4.043E-04	
T6 Utility Class 7	Natural Gas	2.060E-05	5.937E-04	6.379E-03	0.000E+00	1.142E-06	2.646E-05	1.003E-04	1.279E-04	1.050E-06	6.614E-06	3.511E-05	4.277E-05	2.207E+00	1.442E-03	4.500E-04	
T6TS	Gasoline	4.729E-04	2.545E-03	1.057E-02	4.114E-05	4.183E-06	2.646E-05	9.925E-05	1.299E-04	3.857E-06	6.614E-06	3.474E-05	4.521E-05	4.157E+00	8.867E-05	1.085E-04	
T7 CAIRP Class 8	Diesel	1.942E-04	7.879E-03	7.139E-04	3.339E-05	1.460E-04	7.937E-05	1.704E-04	3.958E-04	1.396E-04	1.984E-05	5.965E-05	2.191E-04	3.530E+00	9.018E-06	5.556E-04	
T7 CAIRP Class 8	Natural Gas	2.908E-05	5.767E-04	1.013E-02	0.000E+00	3.827E-06	7.937E-05	1.634E-04	2.465E-04	3.519E-06	1.984E-05	5.718E-05	8.054E-05	2.604E+00	2.036E-03	5.308E-04	
T7 NNOOS Class 8	Diesel	3.199E-04	8.470E-03	1.261E-03	3.361E-05	2.412E-04	7.937E-05	1.724E-04	4.930E-04	2.308E-04	1.984E-05	6.033E-05	3.110E-04	3.553E+00	1.486E-05	5.592E-04	
T7 NOOS Class 8	Diesel	2.268E-04	8.244E-03	8.267E-04	3.339E-05	1.627E-04	7.937E-05	1.708E-04	4.128E-04	1.556E-04	1.984E-05	5.978E-05	2.353E-04	3.529E+00	1.053E-05	5.556E-04	
T7 Other Port Class 8	Diesel	2.626E-04	9.829E-03	8.382E-04	3.595E-05	6.858E-05	7.937E-05	2.073E-04	3.553E-04	6.561E-05	1.984E-05	7.256E-05	1.580E-04	3.799E+00	1.220E-05	5.981E-04	
T7 POAK Class 8	Diesel	3.249E-04	1.095E-02	1.034E-03	3.599E-05	9.128E-05	7.937E-05	2.117E-04	3.824E-04	8.733E-05	1.984E-05	7.411E-05	1.813E-04	3.804E+00	1.509E-05	5.987E-04	
T7 POAK Class 8	Natural Gas	3.738E-05	1.552E-03	2.429E-02	0.000E+00	2.988E-06	7.937E-05	1.879E-04	2.703E-04	2.747E-06	1.984E-05	6.577E-05	8.836E-05	3.290E+00	2.616E-03	6.707E-04	
T7 Public Class 8	Diesel	3.447E-04	2.562E-02	1.116E-03	4.098E-05	1.655E-04	7.937E-05	2.624E-04	5.073E-04	1.584E-04	1.984E-05	9.184E-05	2.700E-04	4.332E+00	1.601E-05	6.819E-04	
T7 Public Class 8	Natural Gas	5.780E-05	1.707E-03	2.368E-02	0.000E+00	5.343E-06	7.937E-05	2.336E-04	3.184E-04	4.913E-06	1.984E-05	8.178E-05	1.065E-04	3.681E+00	4.045E-03	7.504E-04	
T7 Single Concrete/Transit Mix Cla	Diesel	3.839E-05	2.465E-03	1.993E-04	3.571E-05	4.234E-05	7.937E-05	1.789E-04	3.006E-04	4.050E-05	1.984E-05	6.262E-05	1.230E-04	3.774E+00	1.783E-06	5.941E-04	
T7 Single Concrete/Transit Mix Cla	Natural Gas	3.344E-05	7.916E-04	1.466E-02	0.000E+00	4.030E-06	7.937E-05	1.780E-04	2.614E-04	3.705E-06	1.984E-05	6.229E-05	8.583E-05	2.791E+00	2.340E-03	5.689E-04	
T7 Single Dump Class 8	Diesel	3.661E-04	1.071E-02	1.284E-03	3.541E-05	2.052E-04	7.937E-05	1.936E-04	4.781E-04	1.963E-04	1.984E-05	6.776E-05	2.839E-04	3.743E+00	1.701E-05	5.892E-04	
T7 Single Dump Class 8	Natural Gas	3.336E-05	9.407E-04	1.684E-02	0.000E+00	3.680E-06	7.937E-05	1.823E-04	2.653E-04	3.384E-06	1.984E-05	6.379E-05	8.702E-05	2.895E+00	2.335E-03	5.902E-04	
T7 Single Other Class 8	Diesel	3.480E-04	9.541E-03	1.276E-03	3.539E-05	2.128E-04	7.937E-05	1.930E-04	4.852E-04	2.036E-04	1.984E-05	6.757E-05	2.910E-04	3.741E+00	1.616E-05	5.888E-04	
T7 Single Other Class 8	Natural Gas	3.338E-05	9.459E-04	1.668E-02	0.000E+00	3.698E-06	7.937E-05	1.823E-04	2.654E-04	3.400E-06	1.984E-05	6.381E-05	8.705E-05	2.866E+00	2.336E-03	5.842E-04	
T7 SWCV Class 8	Diesel	9.651E-05	1.817E-02	2.650E-04	8.575E-05	2.248E-05	7.937E-05	4.630E-04	5.648E-04	2.150E-05	1.984E-05	1.620E-04	2.034E-04	9.063E+00	4.483E-06	1.427E-03	
T7 SWCV Class 8	Natural Gas	3.722E-04	7.392E-03	5.802E-02	0.000E+00	7.735E-06	7.937E-05	4.630E-04	5.501E-04	7.112E-06	1.984E-05	1.620E-04	1.890E-04	3.976E+00	1.346E-02	8.106E-04	
T7 Tractor Class 8	Diesel	3.280E-04	1.075E-02	1.189E-03	3.331E-05	1.916E-04	7.937E-05	1.882E-04	4.592E-04	1.833E-04	1.984E-05	6.588E-05	2.691E-04	3.521E+00	1.524E-05	5.543E-04	
T7 Tractor Class 8	Natural Gas	3.136E-05	1.243E-03	2.151E-02	0.000E+00	2.735E-06	7.937E-05	1.730E-04	2.551E-04	2.515E-06	1.984E-05	6.054E-05	8.290E-05	2.694E+00	2.195E-03	5.492E-04	
T7 Utility Class 8	Diesel	9.037E-05	5.427E-03	4.372E-04	3.706E-05	2.505E-05	7.937E-05	2.169E-04	3.213E-04	2.397E-05	1.984E-05	7.592E-05	1.197E-04	3.918E+00	4.198E-06	6.167E-04	
T7IS	Gasoline	2.732E-03	1.196E-02	1.003E-01	5.128E-05	5.949E-06	4.409E-05	2.020E-04	2.521E-04	5.539E-06	1.102E-05	7.071E-05	8.727E-05	5.182E+00	4.076E-04	3.795E-04	
UBUS	Gasoline	1.735E-05	1.177E-04	1.250E-03	2.307E-05	1.581E-06	1.828E-05	2.037E-04	2.235E-04	1.454E-06	4.569E-06	7.128E-05	7.730E-05	2.331E+00	5.808E-06	1.384E-05	
UBUS	Diesel	3.562E-04	1.195E-02	6.857E-04	3.180E-05	1.993E-05	7.009E-05	2.425E-04	3.325E-04	1.907E-05	1.752E-05	8.488E-05	1.215E-04	3.359E+00	1.655E-05	5.287E-04	
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.213E-04	2.006E-04	0.000E+00	1.984E-05	4.244E-05	6.228E-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: 2019
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	9.024E-08	1.363E-06	2.517E-07	1.128E-08	3.328E-08	1.200E-08	4.614E-08	9.141E-08	3.184E-08	3.000E-09	1.615E-08	5.098E-08	1.192E-03	4.191E-09	1.877E-07
All Other Buses	Natural Gas	1.042E-08	3.001E-07	3.092E-06	0.000E+00	5.819E-10	1.200E-08	4.614E-08	5.872E-08	5.350E-10	3.000E-09	1.615E-08	1.968E-08	1.074E-03	7.295E-07	2.189E-07
LDA	Gasoline	1.531E-08	6.882E-08	9.038E-07	2.923E-09	1.600E-09	8.000E-09	6.780E-09	1.638E-08	1.471E-09	2.000E-09	2.373E-09	5.844E-09	2.954E-04	3.663E-09	6.198E-09
LDA	Diesel	3.527E-08	3.300E-07	3.797E-07	2.309E-09	2.221E-08	8.000E-09	6.853E-09	3.707E-08	2.125E-08	2.000E-09	2.399E-09	2.565E-08	2.439E-04	1.638E-09	3.839E-08
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.360E-09	1.236E-08	0.000E+00	2.000E-09	1.526E-09	3.526E-09	0.000E+00	0.000E+00	0.000E+00
LDA	Plug-in Hybrid	1.475E-09	3.486E-09	2.191E-07	1.445E-09	9.839E-10	8.000E-09	3.721E-09	1.270E-08	9.046E-10	2.000E-09	1.302E-09	4.207E-09	1.460E-04	4.671E-10	6.350E-10
LDT1	Gasoline	4.564E-08	2.067E-07	1.952E-06	3.455E-09	2.502E-09	8.000E-09	8.313E-09	1.882E-08	2.301E-09	2.000E-09	2.910E-09	7.211E-09	3.491E-04	9.792E-09	1.352E-08
LDT1	Diesel	3.295E-07	1.716E-06	1.750E-06	4.001E-09	2.596E-07	8.000E-09	9.747E-09	2.773E-07	2.483E-07	2.000E-09	3.411E-09	2.538E-07	4.227E-04	1.530E-08	6.653E-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	1.486E-09	3.512E-09	2.207E-07	1.455E-09	1.077E-09	8.000E-09	3.719E-09	1.280E-08	9.900E-10	2.000E-09	1.302E-09	4.292E-09	1.471E-04	4.714E-10	6.421E-10
LDT2	Gasoline	1.683E-08	1.061E-07	1.011E-06	3.672E-09	1.622E-09	8.000E-09	7.948E-09	1.757E-08	1.492E-09	2.000E-09	2.782E-09	6.273E-09	3.710E-04	3.994E-09	7.810E-09
LDT2	Diesel	1.595E-08	6.820E-08	1.411E-07	3.199E-09	7.011E-09	8.000E-09	7.922E-09	2.293E-08	6.708E-09	2.000E-09	2.773E-09	1.148E-08	3.379E-04	7.407E-10	5.319E-08
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.349E-09	1.235E-08	0.000E+00	2.000E-09	1.522E-09	3.522E-09	0.000E+00	0.000E+00	0.000E+00
LDT2	Plug-in Hybrid	1.454E-09	3.436E-09	2.160E-07	1.424E-09	1.044E-09	8.000E-09	3.723E-09	1.277E-08	9.596E-10	2.000E-09	1.303E-09	4.263E-09	1.439E-04	4.638E-10	6.348E-10
LHD1	Gasoline	5.935E-08	2.385E-07	1.438E-06	9.190E-09	1.898E-09	8.000E-09	7.800E-08	8.790E-08	1.746E-09	2.000E-09	2.730E-08	3.105E-08	9.287E-04	1.164E-08	1.333E-08
LHD1	Diesel	2.478E-07	2.961E-06	7.475E-07	6.141E-09	5.676E-08	1.200E-08	7.800E-08	1.468E-07	5.431E-08	3.000E-09	2.730E-08	8.461E-08	6.487E-04	1.151E-08	1.021E-07
LHD2	Gasoline	5.915E-08	2.835E-07	1.385E-06	1.044E-08	1.899E-09	8.000E-09	9.100E-08	1.009E-07	1.746E-09	2.000E-09	3.185E-08	3.560E-08	1.055E-03	1.210E-08	1.576E-08
LHD2	Diesel	2.022E-07	2.046E-06	5.527E-07	7.531E-09	4.516E-08	1.200E-08	9.100E-08	1.482E-07	4.320E-08	3.000E-09	3.185E-08	7.805E-08	7.955E-04	9.393E-09	1.252E-07
MCY	Gasoline	1.443E-06	7.029E-07	1.650E-05	1.932E-09	1.997E-09	4.000E-09	1.200E-08	1.800E-08	1.880E-09	1.000E-09	4.200E-09	7.080E-09	1.952E-04	2.059E-07	4.515E-08
MDV	Gasoline	2.647E-08	1.520E-07	1.220E-06	4.411E-09	1.714E-09	8.000E-09	8.051E-09	1.777E-08	1.577E-09	2.000E-09	2.818E-09	6.395E-09	4.458E-04	5.684E-09	1.006E-08
MDV	Diesel	1.258E-08	6.645E-08	1.942E-07	4.105E-09	6.184E-09	8.000E-09	7.884E-09	2.207E-08	5.917E-09	2.000E-09	2.759E-09	1.068E-08	4.336E-04	5.844E-10	6.826E-08
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.429E-09	1.243E-08	0.000E+00	2.000E-09	1.550E-09	3.550E-09	0.000E+00	0.000E+00	0.000E+00
MDV	Plug-in Hybrid	1.477E-09	3.492E-09	2.195E-07	1.447E-09	1.081E-09	8.000E-09	3.717E-09	1.280E-08	9.937E-10	2.000E-09	1.301E-09	4.295E-09	1.463E-04	4.728E-10	6.488E-10
MH	Gasoline	2.154E-07	9.013E-07	6.182E-06	1.933E-08	3.084E-09	1.200E-08	4.502E-08	6.010E-08	2.846E-09	3.000E-09	1.576E-08	2.160E-08	1.953E-03	4.052E-08	4.520E-08
MH	Diesel	1.161E-07	4.115E-06	3.862E-07	1.026E-08	9.844E-08	1.600E-08	4.479E-08	1.592E-07	9.418E-08	4.000E-09	1.567E-08	1.139E-07	1.083E-03	5.395E-09	1.705E-07
Motor Coach	Diesel	1.775E-07	4.329E-06	6.233E-07	1.664E-08	1.079E-07	1.200E-08	7.908E-08	1.989E-07	1.032E-07	3.000E-09	2.768E-08	1.339E-07	1.759E-03	8.243E-09	2.769E-07
OBUS	Gasoline	6.773E-08	4.438E-07	1.527E-06	1.790E-08	9.707E-10	1.200E-08	4.480E-08	5.777E-08	8.932E-10	3.000E-09	1.568E-08	1.957E-08	1.808E-03	1.394E-08	2.307E-08
PTO	Diesel	3.047E-07	5.643E-06	1.145E-06	2.062E-08	1.024E-07	0.000E+00	0.000E+00	1.024E-07	9.801E-08	0.000E+00	0.000E+00	9.801E-08	2.180E-03	1.415E-08	3.431E-07
SBUS	Gasoline	4.112E-07	1.745E-06	1.011E-05	8.426E-09	3.467E-09	8.000E-09	4.492E-08	5.638E-08	3.188E-09	2.000E-09	1.572E-08	2.091E-08	8.515E-04	7.639E-08	7.512E-08
SBUS	Diesel	7.654E-08	6.030E-06	2.238E-07	1.104E-08	3.088E-08	1.200E-08	4.492E-08	8.779E-08	2.954E-08	3.000E-09	1.572E-08	4.826E-08	1.167E-03	3.555E-09	1.837E-07
SBUS	Natural Gas	5.225E-08	6.462E-07	1.268E-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	1.299E-03	3.657E-06	2.649E-07
T6 CAIRP Class 4	Diesel	8.785E-08	2.174E-06	3.118E-07	1.079E-08	7.440E-08	1.200E-08	4.231E-08	1.287E-07	7.118E-08	3.000E-09	1.481E-08	8.899E-08	1.140E-03	4.080E-09	1.794E-07
T6 CAIRP Class 5	Diesel	5.993E-08	1.634E-06	2.281E-07	1.073E-08	5.444E-08	1.200E-08	4.231E-08	1.088E-07	5.208E-08	3.000E-09	1.481E-08	6.989E-08	1.134E-03	2.783E-09	1.785E-07
T6 CAIRP Class 6	Diesel	8.556E-08	2.138E-06	3.178E-07	1.060E-08	7.668E-08	1.200E-08	4.231E-08	1.310E-07	7.336E-08	3.000E-09	1.481E-08	9.117E-08	1.121E-03	3.974E-09	1.764E-07
T6 CAIRP Class 7	Diesel	8.481E-08	2.275E-06	2.892E-07	9.986E-09	6.942E-08	1.200E-08	4.231E-08	1.237E-07	6.642E-08	3.000E-09	1.481E-08	8.423E-08	1.055E-03	3.939E-09	1.661E-07
T6 Instate Delivery Class 4	Diesel	5.950E-07	7.550E-06	1.563E-06	1.196E-08	2.406E-07	1.200E-08	4.756E-08	3.002E-07	2.302E-07	3.000E-09	1.665E-08	2.499E-07	1.264E-03	2.763E-08	1.990E-07
T6 Instate Delivery Class 4	Natural Gas	1.038E-08	2.994E-07	3.246E-06	0.000E+00	6.387E-10	1.200E-08	4.756E-08	6.020E-08	5.873E-10	3.000E-09	1.665E-08	2.023E-08	1.111E-03	7.268E-07	2.265E-07
T6 Instate Delivery Class 5	Diesel	2.552E-07	3.674E-06	6.877E-07	1.169E-08	1.001E-07	1.200E-08	4.756E-08	1.597E-07	9.578E-08	3.000E-09	1.665E-08	1.154E-07	1.236E-03	1.185E-08	1.945E-07
T6 Instate Delivery Class 5	Natural Gas	1.038E-08	2.994E-07	3.246E-06	0.000E+00	6.387E-10	1.200E-08	4.756E-08	6.020E-08	5.873E-10	3.000E-09	1.665E-08	2.023E-08	1.109E-03	7.268E-07	2.260E-07
T6 Instate Delivery Class 6	Diesel	4.045E-07	5.169E-06	1.064E-06	1.172E-08	1.646E-07	1.200E-08	4.756E-08	2.242E-07	1.575E-07	3.000E-09	1.665E-08	1.771E-07	1.239E-03	1.879E-08	1.951E-07
T6 Instate Delivery Class 6	Natural Gas	1.042E-08	2.949E-07	3.257E-06	0.000E+00	6.646E-10	1.200E-08	4.756E-08	6.023E-08	6.111E-10	3.000E-09	1.665E-08	2.026E-08	1.109E-03	7.295E-07	2.262E-07
T6 Instate Delivery Class 7	Diesel	2.682E-07	4.209E-06	7.058E-07	1.162E-08	1.136E-07	1.200E-08	4.756E-08	1.732E-07	1.087E-07	3.000E-09	1.665E-08	1.284E-07	1.229E-03	1.246E-08	1.934E-07
T6 Instate Delivery Class 7	Natural Gas	1.152E-08	1.702E-07	3.571E-06	0.000E+00	1.390E-09	1.200E-08	4.756E-08	6.095E-08	1.278E-09	3.000E-09	1.665E-08	2.093E-08	1.089E-03	8.064E-07	2.221E-07
T6 Instate Other Class 4	Diesel	4.866E-07	7.579E-06	1.371E-06	1.120E-08	2.477E-07	1.200E-08	4.486E-08	3.046E-07	2.370E-07	3.000E-09	1.570E-08	2.557E-07	1.184E-03	2.260E-08	1.863E-07
T6 Instate Other Class 4	Natural Gas	7.975E-09	2.268E-07	2.831E-06	0.000E+00	5.147E-10	1.200E-08	4.486E-08	5.738E-08	4.732E-10	3.000E-09	1.570E-08	1.918E-08	9.658E-04	5.582E-07	1.969E-07
T6 Instate Other Class 5	Diesel	1.611E-07	2.822E-06	4.797E-07	1.106E-08	8.118E-08	1.200E-08	4.486E-08	1.380E-07	7.767E-08	3.000E-09	1.570E-08	9.637E-08	1.169E-03	7.482E-09	1.841E-07
T6 Instate Other Class 5	Natural Gas	7.945E-09	2.294E-07	2.834E-06	0.000E+00	4.990E-10	1.200E-08	4.486E-08	5.736E-08	4.588E-10	3.000E-09	1.570E-08	1.916E-08	9.646E-04	5.561E-07	1.966E-07
T6 Instate Other Class 6	Diesel	2.680E-07	4.324E-06	7.767E-07	1.102E-08	1.403E-07	1.200E-08	4.486E-08	1.971E-07	1.342E-07	3.000E-09	1.570E-08	1.529E-07	1.165E-03	1.245E-08	1.834E-07
T6 Instate Other Class 6	Natural Gas	7.999E-09	2.247E-07	2.829E-06	0.000E+00	5.273E-10	1.200E-08	4.486E-08	5.739E-08	4.848E-10	3.000E-09	1.570E-08	1.919E-08	9.643E-04	5.599E-07	1.966E-07
T6 Instate Other Class 7	Diesel	2.006E-07	3.445E-06	5.549E-07	1.097E-08	1.082E-07	1.200E-08	4.486E-08	1.651E-07	1.035E-07	3.000E-09	1.570E-08	1.222E-07	1.160E-03	9.318E-09	1.826E-07
T6 Instate Other Class 7	Natural Gas	8.631E-09	1.734E-07	2.821E-06	0.000E+00	8.648E-10	1.200E-08	4.486E-08	5.773E-08	7.952E-10	3.000E-09	1.570E-08	1.950E-08	9.313E-04	6.041E-07	1.899E-07
T6 Instate Tractor Class 6	Diesel	2.302E-07	3.633E-06	6.739E-07	1.117E-08	1.191E-07	1.200E-08	4.486E-08	1.759E-07	1.139E-07	3.000E-09	1.570E-08	1.326E-07	1.181E-03	1.069E-08	1.858E-07
T6 Instate Tractor Class 6	Natural Gas	7.934E-09	2.304E-07	2.835E-06	0.000E+00	4.933E-10	1.200E-08	4.486E-08	5.736E-08	4.536E-10	3.000E-09	1.570E-08	1.916E-08	9.606E-04	5.553E-07	1.958E-07
T6 Instate Tractor Class 7	Diesel	1.408E-07	3.301E-06	4.230E-07	1.044E-08	7.438E-08	1.200E-08	4.486E-08	1.312E-07	7.116E-08	3.000E-09	1.570E-08	8.986E-08	1.103E-03	6.539E-09	1.737E-07
T6 Instate Tractor Class 7	Natural Gas	8.132E-09	2.146E-07	2.835E-06	0.000E+00	5.994E-10	1.200E-08	4.486E-08	5.746E-08	5.511E-10	3.000E-09	1.570E-08	1.925E-08	9.309E-04	5.692E-07	1.898E-07
T6 OOS Class 4	Diesel	8.785E-08	2.174E-06	3.118E-07	1.079E-08	7.440E-08	1.200E-08	4.231E-08	1.287E-07	7.118E-08	3.000E-09	1.481E-08	8.899E-08	1.140E-03	4.080E-09	1.794E-07
T6 OOS Class 5	Diesel	5.993E-08	1.634E-06	2.281E-07	1.073E-08	5.444E-08	1.200E-08	4.231E-08	1.088E-07	5.208E-08	3.000E-09	1.481E-08	6.989E-08	1.134E-03	2.783E-09	1.785E-07
T6 OOS Class 6	Diesel	8.556E-08	2.138E-06	3.178E-07	1.060E-08	7.668E-08	1.200E-08	4.231E-08	1.310E-07	7.336E-08	3.000E-09	1.481E-08	9.117E-08	1.121E-03	3.974E-09	1.764E-07
T6 OOS Class 7	Diesel	9.387E-08	2.391E-06	3.194E-07	9.979E-09	7.658E-08	1.200E-08	4.231E-08	1.309E-07	7.327E-08	3.000E-09	1.481E-08	9.108E-08	1.055E-03	4.360E-09	1.660E-07
T6 Public Class 4	Diesel	1.086E-07	8.304E-06	2.476E-07	1.225E-08	4.002E-08	1.200E-08	4.617E-08	9.819E-08	3.829E-08	3.000E-09	1.616E-08	5.745E-08	1.295E-03	5.042E-09	2.038E-07
T6 Public Class 4	Natural Gas	1.228E-08	1.144E-07	3.052E-06	0.000E+00	1.527E-09	1.200E-08	4.617E-08	5.970E-08	1.404E-09	3.000E-09	1.616E-08	2.056E-08	1.065E-03	8.592E-07	2.171E-07
T6 Public Class 5	Diesel	5.694E-08	3.552E-06	1.616E-07	1.165E-08	1.692E-08	1.200E-08	4.617E-08	7.509E-08	1.618E-08	3.000E-09	1.616E-08	3.534E-08	1.232E-03	2.645E-09	1.939E-07
T6 Public Class 5	Natural Gas	1.206E-08	1.514E-07	3.089E-06	0.000E+00	1.351E-09	1.200E-08	4.617E-08	5.952E-08	1.242E-09	3.000E-09	1.616E-08	2.040E-08	1.051E-03	8.437E-07	2.143E-07

T6 Public Class 6	Diesel	1.216E-07	8.137E-06	2.761E-07	1.214E-08	5.174E-08	1.200E-08	4.617E-08	1.099E-07	4.951E-08	3.000E-09	1.616E-08	6.867E-08	1.283E-03	5.649E-09	2.020E-07
T6 Public Class 6	Natural Gas	1.200E-08	1.610E-07	3.090E-06	0.000E+00	1.306E-09	1.200E-08	4.617E-08	5.948E-08	1.201E-09	3.000E-09	1.616E-08	2.036E-08	1.048E-03	8.397E-07	2.137E-07
T6 Public Class 7	Diesel	1.434E-07	9.623E-06	3.016E-07	1.247E-08	6.575E-08	1.200E-08	4.617E-08	1.239E-07	6.290E-08	3.000E-09	1.616E-08	8.206E-08	1.318E-03	6.662E-09	2.074E-07
T6 Public Class 7	Natural Gas	1.240E-08	9.501E-08	3.066E-06	0.000E+00	1.619E-09	1.200E-08	4.617E-08	5.979E-08	1.489E-09	3.000E-09	1.616E-08	2.065E-08	1.067E-03	8.677E-07	2.174E-07
T6 Utility Class 5	Diesel	2.450E-08	1.270E-06	9.542E-08	1.078E-08	6.143E-09	1.200E-08	4.550E-08	6.364E-08	5.877E-09	3.000E-09	1.592E-08	2.480E-08	1.140E-03	1.138E-09	1.794E-07
T6 Utility Class 5	Natural Gas	9.343E-09	2.693E-07	2.894E-06	0.000E+00	5.178E-10	1.200E-08	4.550E-08	5.801E-08	4.761E-10	3.000E-09	1.592E-08	1.940E-08	1.011E-03	6.539E-07	2.061E-07
T6 Utility Class 6	Diesel	3.709E-08	2.079E-06	1.240E-07	1.103E-08	1.076E-08	1.200E-08	4.550E-08	6.826E-08	1.029E-08	3.000E-09	1.592E-08	2.922E-08	1.165E-03	1.723E-09	1.834E-07
T6 Utility Class 6	Natural Gas	9.343E-09	2.693E-07	2.894E-06	0.000E+00	5.178E-10	1.200E-08	4.550E-08	5.801E-08	4.761E-10	3.000E-09	1.592E-08	1.940E-08	9.948E-04	6.539E-07	2.028E-07
T6 Utility Class 7	Diesel	2.797E-08	1.915E-06	1.002E-07	1.102E-08	1.031E-08	1.200E-08	4.550E-08	6.781E-08	9.866E-09	3.000E-09	1.592E-08	2.879E-08	1.165E-03	1.299E-09	1.834E-07
T6 Utility Class 7	Natural Gas	9.343E-09	2.693E-07	2.894E-06	0.000E+00	5.178E-10	1.200E-08	4.550E-08	5.801E-08	4.761E-10	3.000E-09	1.592E-08	1.940E-08	1.001E-03	6.539E-07	2.041E-07
T6TS	Gasoline	2.145E-07	1.154E-06	4.793E-06	1.866E-08	1.897E-09	1.200E-08	4.502E-08	5.891E-08	1.749E-09	3.000E-09	1.576E-08	2.051E-08	1.886E-03	4.022E-08	4.919E-08
T7 CAIRP Class 8	Diesel	8.807E-08	3.574E-06	3.238E-07	1.515E-08	6.621E-08	3.600E-08	7.731E-08	1.795E-07	6.334E-08	9.000E-09	2.706E-08	9.940E-08	1.601E-03	4.091E-09	2.520E-07
T7 CAIRP Class 8	Natural Gas	1.319E-08	2.616E-07	4.596E-06	0.000E+00	1.736E-09	3.600E-08	7.410E-08	1.118E-07	1.596E-09	9.000E-09	2.593E-08	3.653E-08	1.181E-03	9.233E-07	2.408E-07
T7 NNOOS Class 8	Diesel	1.451E-07	3.842E-06	5.721E-07	1.525E-08	1.094E-07	3.600E-08	7.818E-08	2.236E-07	1.047E-07	9.000E-09	2.736E-08	1.411E-07	1.611E-03	6.741E-09	2.537E-07
T7 NOOS Class 8	Diesel	1.029E-07	3.739E-06	3.750E-07	1.515E-08	7.379E-08	3.600E-08	7.747E-08	1.873E-07	7.060E-08	9.000E-09	2.711E-08	1.067E-07	1.601E-03	4.777E-09	2.520E-07
T7 Other Port Class 8	Diesel	1.191E-07	4.459E-06	3.802E-07	1.631E-08	3.111E-08	3.600E-08	9.404E-08	1.611E-07	2.976E-08	9.000E-09	3.291E-08	7.168E-08	1.723E-03	5.533E-09	2.713E-07
T7 POAK Class 8	Diesel	1.474E-07	4.965E-06	4.689E-07	1.632E-08	4.140E-08	3.600E-08	9.605E-08	1.735E-07	3.961E-08	9.000E-09	3.362E-08	8.223E-08	1.725E-03	6.845E-09	2.716E-07
T7 POAK Class 8	Natural Gas	1.696E-08	7.040E-07	1.102E-05	0.000E+00	1.355E-09	3.600E-08	8.524E-08	1.226E-07	1.246E-09	9.000E-09	2.983E-08	4.008E-08	1.492E-03	1.187E-06	3.042E-07
T7 Public Class 8	Diesel	1.564E-07	1.162E-05	5.060E-07	1.859E-08	7.508E-08	3.600E-08	1.190E-07	2.301E-07	7.184E-08	9.000E-09	4.166E-08	1.225E-07	1.965E-03	7.263E-09	3.093E-07
T7 Public Class 8	Natural Gas	2.622E-08	7.744E-07	1.074E-05	0.000E+00	2.424E-09	3.600E-08	1.060E-07	1.444E-07	2.228E-09	9.000E-09	3.709E-08	4.832E-08	1.670E-03	1.835E-06	3.404E-07
T7 Single Concrete/Transit Mix Cla	Diesel	1.741E-08	1.118E-06	9.040E-08	1.620E-08	1.920E-08	3.600E-08	8.116E-08	1.364E-07	1.837E-08	9.000E-09	2.841E-08	5.578E-08	1.712E-03	8.088E-10	2.695E-07
T7 Single Concrete/Transit Mix Cla	Natural Gas	1.517E-08	3.591E-07	6.650E-06	0.000E+00	1.828E-09	3.600E-08	8.072E-08	1.186E-07	1.681E-09	9.000E-09	2.825E-08	3.893E-08	1.266E-03	1.062E-06	2.581E-07
T7 Single Dump Class 8	Diesel	1.661E-07	4.858E-06	5.826E-07	1.606E-08	9.306E-08	3.600E-08	8.782E-08	2.169E-07	8.904E-08	9.000E-09	3.074E-08	1.288E-07	1.698E-03	7.714E-09	2.673E-07
T7 Single Dump Class 8	Natural Gas	1.513E-08	4.267E-07	7.638E-06	0.000E+00	1.669E-09	3.600E-08	8.267E-08	1.203E-07	1.535E-09	9.000E-09	2.894E-08	3.947E-08	1.313E-03	1.059E-06	2.677E-07
T7 Single Other Class 8	Diesel	1.578E-07	4.328E-06	5.790E-07	1.605E-08	9.653E-08	3.600E-08	8.757E-08	2.201E-07	9.235E-08	9.000E-09	3.065E-08	1.320E-07	1.697E-03	7.332E-09	2.671E-07
T7 Single Other Class 8	Natural Gas	1.514E-08	4.291E-07	7.564E-06	0.000E+00	1.677E-09	3.600E-08	8.270E-08	1.204E-07	1.542E-09	9.000E-09	2.894E-08	3.949E-08	1.300E-03	1.060E-06	2.650E-07
T7 SWCV Class 8	Diesel	4.378E-08	8.244E-06	1.202E-07	3.889E-08	1.019E-08	3.600E-08	2.100E-07	2.562E-07	9.754E-09	9.000E-09	7.350E-08	9.225E-08	4.111E-03	2.033E-09	6.471E-07
T7 SWCV Class 8	Natural Gas	1.688E-07	3.353E-06	2.632E-05	0.000E+00	3.508E-09	3.600E-08	2.100E-07	2.495E-07	3.226E-09	9.000E-09	7.350E-08	8.573E-08	1.804E-03	6.107E-06	3.677E-07
T7 Tractor Class 8	Diesel	1.488E-07	4.878E-06	5.392E-07	1.511E-08	8.693E-08	3.600E-08	8.538E-08	2.083E-07	8.317E-08	9.000E-09	2.988E-08	1.220E-07	1.597E-03	6.911E-09	2.514E-07
T7 Tractor Class 8	Natural Gas	1.423E-08	5.637E-07	9.756E-06	0.000E+00	1.241E-09	3.600E-08	7.846E-08	1.157E-07	1.141E-09	9.000E-09	2.746E-08	3.760E-08	1.222E-03	9.956E-07	2.491E-07
T7 Utility Class 8	Diesel	4.099E-08	2.462E-06	1.983E-07	1.681E-08	1.136E-08	3.600E-08	9.840E-08	1.458E-07	1.087E-08	9.000E-09	3.444E-08	5.431E-08	1.777E-03	1.904E-09	2.797E-07
T7IS	Gasoline	1.239E-06	5.424E-06	4.552E-05	2.326E-08	2.698E-09	2.000E-08	9.164E-08	1.143E-07	2.512E-09	5.000E-09	3.208E-08	3.959E-08	2.350E-03	1.849E-07	1.721E-07
UBUS	Gasoline	7.870E-09	5.339E-08	5.669E-07	1.046E-08	7.171E-10	8.290E-09	9.238E-08	1.014E-07	6.594E-10	2.073E-09	3.233E-08	3.506E-08	1.057E-03	2.635E-09	6.278E-09
UBUS	Diesel	1.616E-07	5.421E-06	3.110E-07	1.442E-08	9.040E-09	3.179E-08	1.100E-07	1.508E-07	8.649E-09	7.948E-09	3.850E-08	5.510E-08	1.524E-03	7.505E-09	2.398E-07
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	5.500E-08	9.100E-08	0.000E+00	9.000E-09	1.925E-08	2.825E-08	0.000E+00	0.000E+00	0.000E+00

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2040
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	0.01334618	0.50024792	0.08127863	0.00971388	0.00364617	0.012	0.0461373	6.18E-02	0.00348844	0.003	0.01614806	2.26E-02	1025.81784	0.0006199	0.16161802	68,924	0.350%
All Other Buses	Natural Gas	0.01215435	0.07922587	3.41832093	0	0.00172963	0.012	0.0461373	5.99E-02	0.00159033	0.003	0.01614806	2.07E-02	899.167166	0.85066713	0.18330111	1,276	0.006%
LDA	Gasoline	0.002851	0.01949512	0.43035809	0.00221937	0.00054791	0.008	0.00681325	1.54E-02	0.00050379	0.002	0.00238464	4.89E-03	224.49575	0.0009123	0.00292407	5,833,280	29.613%
LDA	Diesel	0.00534929	0.02493682	0.14221828	0.00175617	0.00172176	0.008	0.00686473	1.66E-02	0.00164727	0.002	0.00240265	6.05E-03	185.337833	0.00024846	0.02920005	3,702	0.019%
LDA	Electricity	0	0	0	0	0	0.008	0.00438639	1.24E-02	0	0.002	0.00153524	3.54E-03	0	0	0	875,819	4.446%
LDA	Plug-in Hybrid	0.00113655	0.0026759	0.16817577	0.00110839	0.00022918	0.008	0.00391252	1.21E-02	0.00021072	0.002	0.00136938	3.58E-03	112.116585	0.00032605	0.00040088	281,077	1.427%
LDT1	Gasoline	0.00364626	0.02358625	0.4839539	0.00258139	0.00060168	0.008	0.00826558	1.69E-02	0.00055322	0.002	0.00289295	5.45E-03	261.115255	0.00109815	0.00320762	705,649	3.582%
LDT1	Diesel	0.01195255	0.02660206	0.12328523	0.00318971	0.00397563	0.008	0.00816438	2.01E-02	0.00380365	0.002	0.00285753	8.66E-03	336.626688	0.00055517	0.05303567	8	0.000%
LDT1	Electricity	0	0	0	0	0	0.008	0.00438913	1.24E-02	0	0.002	0.00153619	3.54E-03	0	0	0	22,339	0.113%
LDT1	Plug-in Hybrid	0.00112403	0.00264642	0.16631491	0.00109616	0.0002027	0.008	0.00391998	1.21E-02	0.00018637	0.002	0.00137199	3.56E-03	110.87982	0.00032177	0.00039468	15,547	0.079%
LDT2	Gasoline	0.00408575	0.02393031	0.51886024	0.00267386	0.00056277	0.008	0.008199	1.68E-02	0.00051744	0.002	0.00286965	5.39E-03	270.468513	0.00124763	0.00321541	6,086,991	30.901%
LDT2	Diesel	0.01200888	0.02721418	0.12479376	0.00237512	0.00402062	0.008	0.00819041	2.02E-02	0.00384669	0.002	0.00286665	8.71E-03	250.658766	0.00055779	0.03949139	23,202	0.118%
LDT2	Electricity	0	0	0	0	0	0.008	0.00439111	1.24E-02	0	0.002	0.00153689	3.54E-03	0	0	0	179,285	0.910%
LDT2	Plug-in Hybrid	0.00113006	0.00266063	0.16719846	0.00110202	0.00021531	0.008	0.00392025	1.21E-02	0.00019797	0.002	0.00137209	3.57E-03	111.473079	0.00032203	0.00039313	161,728	0.821%
LHD1	Gasoline	0.00401723	0.01892416	0.59248327	0.00744321	0.00128291	0.008	0.07800002	8.73E-02	0.00117959	0.002	0.02730001	3.05E-02	752.902897	0.00114083	0.00150956	306,742	1.557%
LHD1	Diesel	0.08711647	0.25752873	0.218704	0.00570546	0.01803987	0.012	0.07800002	1.08E-01	0.01725948	0.003	0.02730001	4.76E-02	602.127171	0.00404639	0.09486538	184,764	0.938%
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	293,604	1.490%
LHD2	Gasoline	0.00363114	0.02238521	0.5955606	0.00837847	0.00125894	0.008	0.09100003	1.00E-01	0.00115755	0.002	0.03185001	3.50E-02	847.507512	0.00105504	0.00198533	34,025	0.173%
LHD2	Diesel	0.10100701	0.30857275	0.25530291	0.00664075	0.02097521	0.012	0.09100003	1.24E-01	0.02006783	0.003	0.03185001	5.49E-02	700.832769	0.00469158	0.11041649	84,902	0.431%
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	70,466	0.358%
MCY	Gasoline	0.74799415	0.45790234	9.35911672	0.00183236	0.00214499	0.004	0.012	1.81E-02	0.00199978	0.001	0.0042	7.20E-03	185.348611	0.12531148	0.03468199	92,749	0.471%
MDV	Gasoline	0.0042214	0.02487057	0.52993193	0.00324077	0.00056762	0.008	0.00830071	1.69E-02	0.0005219	0.002	0.00290525	5.43E-03	327.813049	0.00128192	0.00328642	3,533,747	17.939%
MDV	Diesel	0.00433423	0.00960663	0.13590628	0.00309904	0.00099079	0.008	0.00832006	1.73E-02	0.00094793	0.002	0.00291202	5.86E-03	327.057576	0.00020132	0.05152805	38,378	0.195%
MDV	Electricity	0	0	0	0	0	0.008	0.00439636	1.24E-02	0	0.002	0.00153873	3.54E-03	0	0	0	163,991	0.833%
MDV	Plug-in Hybrid	0.00112942	0.0026591	0.16710448	0.0011014	0.00021653	0.008	0.00392365	1.21E-02	0.00019909	0.002	0.00137328	3.57E-03	111.409612	0.00032287	0.00039551	102,722	0.521%
MH	Gasoline	0.01168099	0.10412525	0.15995233	0.01922673	0.00149118	0.012	0.04501744	5.85E-02	0.00137109	0.003	0.0157561	2.01E-02	1944.84098	0.00407457	0.01236424	10,018	0.051%
MH	Diesel	0.07869023	2.45036835	0.22641149	0.01031241	0.01973011	0.016	0.04478528	8.05E-02	0.01887659	0.004	0.01567485	3.86E-02	1088.32296	0.00365501	0.17146572	5,325	0.027%
Motor Coach	Diesel	0.01066015	0.99200931	0.03802564	0.0147306	0.02441419	0.012	0.08072442	1.17E-01	0.02335805	0.003	0.02825355	5.46E-02	1555.59987	0.00049514	0.24508539	10,276	0.052%
OBUS	Gasoline	0.01787828	0.11892206	0.36181651	0.01527091	0.00131878	0.012	0.0447987	5.81E-02	0.00121257	0.003	0.01567955	1.99E-02	1544.69812	0.00414751	0.0081918	5,871	0.030%
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	4,910	0.025%
PTO	Diesel	0.01696958	2.82616395	0.20685869	0.01729902	0.00453598	0	0	4.54E-03	0.00433975	0	0	4.34E-03	1826.8337	0.00078819	0.28781839	3,984	0.020%
PTO	Electricity	0	0	0	0	0	0	0	0.00E+00	0	0	0	0.00E+00	0	0	0	2,334	0.012%
SBUS	Gasoline	0.00891594	0.08805086	0.18504588	0.00709853	0.00123556	0.008	0.04491714	5.42E-02	0.00113605	0.002	0.015721	1.89E-02	718.037049	0.00204542	0.00902638	3,828	0.019%
SBUS	Diesel	0.01702162	0.74961055	0.08025546	0.01008918	0.00514978	0.012	0.04491714	6.21E-02	0.00492701	0.003	0.015721	2.36E-02	1065.45089	0.00079061	0.16786222	2,634	0.013%
SBUS	Electricity	0	0	0	0	0	0.00950219	0.02245857	3.20E-02	0	0.00237555	0.0078605	1.02E-02	0	0	0	3,060	0.016%
SBUS	Natural Gas	0.04022974	0.34141862	8.72643145	0	0.00367426	0.012	0.04491714	6.06E-02	0.00337835	0.003	0.015721	2.21E-02	1149.67628	2.81562607	0.23436903	164	0.001%
T6 CAIRP Class 4	Diesel	0.00565164	0.19295927	0.02857247	0.00973324	0.00565363	0.012	0.04231382	6.00E-02	0.00540906	0.003	0.01480984	2.32E-02	1027.86209	0.0002625	0.16194009	82	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	87	0.000%
T6 CAIRP Class 5	Diesel	0.00559067	0.19462736	0.02846544	0.00974389	0.00563724	0.012	0.04231382	6.00E-02	0.00539337	0.003	0.01480984	2.32E-02	1028.98716	0.00025967	0.16211735	113	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	118	0.001%
T6 CAIRP Class 6	Diesel	0.00554233	0.18788336	0.02822002	0.00970387	0.00558146	0.012	0.04231382	5.99E-02	0.00534001	0.003	0.01480984	2.31E-02	1024.7602	0.00025743	0.16145139	291	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	313	0.002%
T6 CAIRP Class 7	Diesel	0.00581962	0.20301557	0.02983924	0.00856452	0.00584039	0.012	0.04231382	6.02E-02	0.00558774	0.003	0.01480984	2.34E-02	904.441338	0.00027031	0.1424951	2,959	0.015%
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	834	0.004%
T6 Instate Delivery Class 4	Diesel	0.00900783	0.44240884	0.06282248	0.0101609	0.00306976	0.012	0.04756293	6.26E-02	0.00293696	0.003	0.01664703	2.26E-02	1073.02442	0.00041839	0.16905543	9,201	0.047%
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	6,673	0.034%
T6 Instate Delivery Class 4	Natural Gas	0.01245779	0.06157767	3.81375222	0	0.00200607	0.012	0.04756293	6.16E-02	0.00184451	0.003	0.01664703	2.15E-02	1009.86019	0.87190429	0.20586661	114	0.001%
T6 Instate Delivery Class 5	Diesel	0.0068932	0.41588677	0.05716589	0.01019244	0.00222164	0.012	0.04756293	6.18E-02	0.00212554	0.003	0.01664703	2.18E-02	1076.35534	0.00032017	0.16958022	7,503	0.038%
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	5,442	0.028%
T6 Instate Delivery Class 5	Natural Gas	0.01244982	0.06249155	3.81156993	0	0.00200081	0.012	0.04756293	6.16E-02	0.00183967	0.003	0.01664703	2.15E-02	1007.40548	0.87134667	0.2053662	88	0.000%
T6 Instate Delivery Class 6	Diesel	0.00702862	0.42527393	0.05789712	0.01017387	0.00229809	0.012	0.04756293	6.19E-02	0.00219868	0.003	0.01664703	2.18E-02	1074.3945	0.00032646	0.16927129	15,553	0.079%
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	11,308	0.057%
T6 Instate Delivery Class 6	Natural Gas	0.01245613	0.0617681	3.81329746	0	0.00200497	0.012	0.04756293	6.16E-02	0.0018435	0.003	0.01664703	2.15E-02	1008.32758	0.87178809	0.20555417	185	0.001%
T6 Instate Delivery Class 7	Diesel	0.00891629	0.75359111	0.07737455	0.01050559	0.00274781	0.012	0.04756293	6.23E-02	0.00262894	0.003	0.01664703	2.23E-02	1109.42469	0.00041414	0.17479031	7,751	0.039%
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	2,884	0.015%
T6 Instate Delivery Class 7	Natural Gas	0.01169549	0.14990201	3.61545415	0	0.00150483	0.012	0.04756293	6.11E-02	0.00138364	0.003	0.01664703	2.10E-02	1052.22305	0.81855168	0.21450255	184	0.001%
T6 Instate Other Class 4	Diesel	0.00715351	0.33473053	0.04801904	0.00978865	0.00391256	0.012	0.04486375	6.08E-02	0.0037433	0.003	0.01570231	2.24E-02	1033.714	0.00033226	0.16286206	12,297	0.062%
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	9,455	0.048%
T6 Instate Other Class 4	Natural Gas	0.00995506	0.05269097	2.6723457	0	0.00155244	0.012	0.04486375	5.84E-02	0.00142741	0.003	0.01570231	2.01E-02	880.549413	0.6967414	0.17950576	157	0.001%
T6 Instate Other Class 5	Diesel	0.00598033	0.30578835	0.04451414	0.00981862	0.00339031	0.012	0.04486375	6.03E-02	0.00324364	0.003	0.01570231	2.19E-02	1036.87895	0.00027777	0.1633607	31,601	0.160%
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	24,372	0.124%
T6 Instate Other Class 5	Natural Gas	0.00995004	0.05313238	2.67274905	0	0.00154981	0.012	0.04486375	5.84E-02	0.001425	0.003	0.01570231	2.01E-02	878.314683	0.69639003	0.17905019	390	0.002%
T6 Instate Other Class 6	Diesel	0.00623621	0.31652662	0.04538307	0.00980297	0.00350085	0.012	0.04486375	6.04E-02	0.00334941	0.003	0.01570231	2.21E-02	1035.22625	0.00028966	0.16310032	19,969	0.101%
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	15,374	0.078%
T6 Instate Other Class 6	Natural Gas	0.00994858	0.05326045	2.67286607	0	0.00154905	0.012	0.04486375	5.84E-02	0.00142429	0.003	0.01570231	2.01E-02	878.455658	0.69628808	0.17907893	248	0.001%
T6 Instate Other Class 7	Diesel	0.00812447	0.54525064	0.05715501	0.00993301	0.00441192	0.012	0.04486375	6.13E-02	0.00422106	0.003	0.01570231	2.29E-02	1048.95901	0.00037736	0.16526392	11,025	0.056%

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	5,744	0.029%
T6 Instate Other Class 7	Natural Gas	0.00933529	0.10882084	2.73823765	0	0.00123	0.012	0.04486375	5.81E-02	0.00113094	0.003	0.01570231	1.98E-02	903.086435	0.65336466	0.18410008	245	0.001%
T6 Instate Tractor Class 6	Diesel	0.00673036	0.28981446	0.04532752	0.00985221	0.00366586	0.012	0.04486375	6.05E-02	0.00350728	0.003	0.01570231	2.22E-02	1040.42582	0.00031261	0.16391951	376	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	315	0.002%
T6 Instate Tractor Class 6	Natural Gas	0.00994384	0.0536772	2.67324689	0	0.00154656	0.012	0.04486375	5.84E-02	0.00142201	0.003	0.01570231	2.01E-02	877.139052	0.69595632	0.17881053	5	0.000%
T6 Instate Tractor Class 7	Diesel	0.00765668	0.59127735	0.05782909	0.00917782	0.00443371	0.012	0.04486375	6.13E-02	0.00424191	0.003	0.01570231	2.29E-02	969.208271	0.00035563	0.15269916	4,137	0.021%
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	733	0.004%
T6 Instate Tractor Class 7	Natural Gas	0.00934477	0.10728491	2.73057675	0	0.00123394	0.012	0.04486375	5.81E-02	0.00113456	0.003	0.01570231	1.98E-02	886.025433	0.65402818	0.18062208	80	0.000%
T6 OOS Class 4	Diesel	0.00602887	0.24395281	0.0288823	0.0090856	0.00598727	0.012	0.04231382	6.03E-02	0.00572827	0.003	0.01480984	2.35E-02	959.468946	0.00028003	0.15116472	94	0.000%
T6 OOS Class 5	Diesel	0.00558614	0.23682194	0.02779053	0.00909784	0.00577202	0.012	0.04231382	6.01E-02	0.00552233	0.003	0.01480984	2.33E-02	960.762343	0.00025946	0.1513685	129	0.001%
T6 OOS Class 6	Diesel	0.00562774	0.23050878	0.02780688	0.00904892	0.00576519	0.012	0.04231382	6.01E-02	0.00551579	0.003	0.01480984	2.33E-02	955.595447	0.00026139	0.15055445	338	0.002%
T6 OOS Class 7	Diesel	0.0056729	0.2358367	0.02909449	0.00820031	0.00592554	0.012	0.04231382	6.02E-02	0.0056692	0.003	0.01480984	2.35E-02	865.979778	0.00026349	0.13643547	2,459	0.012%
T6 Public Class 4	Diesel	0.02302736	1.16363448	0.0790161	0.01059514	0.00706104	0.012	0.04616939	6.52E-02	0.00675558	0.003	0.01615929	2.59E-02	1118.88149	0.00106956	0.17628023	784	0.004%
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	459	0.002%
T6 Public Class 4	Natural Gas	0.01259505	0.0624283	3.05733314	0	0.00177402	0.012	0.04616939	5.99E-02	0.00163115	0.003	0.01615929	2.08E-02	989.210771	0.88151115	0.20165709	54	0.000%
T6 Public Class 5	Diesel	0.01743166	0.81685325	0.07147426	0.01058307	0.00510399	0.012	0.04616939	6.33E-02	0.0048832	0.003	0.01615929	2.40E-02	1117.60707	0.00080966	0.17607945	2,685	0.014%
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	1,576	0.008%
T6 Public Class 5	Natural Gas	0.0124412	0.08787252	3.06913493	0	0.00165306	0.012	0.04616939	5.98E-02	0.00151993	0.003	0.01615929	2.07E-02	1003.27567	0.87074326	0.20452431	227	0.001%
T6 Public Class 6	Diesel	0.01910918	0.97474483	0.0728299	0.01055032	0.00594445	0.012	0.04616939	6.41E-02	0.00568729	0.003	0.01615929	2.48E-02	1114.14821	0.00088757	0.1755345	1,585	0.008%
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	910	0.005%
T6 Public Class 6	Natural Gas	0.01254584	0.07060273	3.06245233	0	0.00173514	0.012	0.04616939	5.99E-02	0.0015954	0.003	0.01615929	2.08E-02	989.725046	0.87806669	0.20176193	112	0.001%
T6 Public Class 7	Diesel	0.01632499	0.85682853	0.06377335	0.01043953	0.00529261	0.012	0.04616939	6.35E-02	0.00506366	0.003	0.01615929	2.42E-02	1102.44841	0.00075825	0.1736912	4,501	0.023%
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	2,333	0.012%
T6 Public Class 7	Natural Gas	0.01258407	0.06427951	3.05950544	0	0.00176521	0.012	0.04616939	5.99E-02	0.00162304	0.003	0.01615929	2.08E-02	996.552238	0.88074249	0.20315369	349	0.002%
T6 Utility Class 5	Diesel	0.00516336	0.20143095	0.03605799	0.00973195	0.0023529	0.012	0.0454967	5.98E-02	0.00225112	0.003	0.01592385	2.12E-02	1027.72607	0.00023982	0.16191866	175	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	189	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	916.208669	0.77945454	0.18677513	1	0.000%
T6 Utility Class 6	Diesel	0.0051625	0.1951802	0.03605199	0.00972862	0.00232369	0.012	0.0454967	5.98E-02	0.00222317	0.003	0.01592385	2.11E-02	1027.3747	0.00023978	0.1618633	33	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	36	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	916.355932	0.77945454	0.18680515	0	0.000%
T6 Utility Class 7	Diesel	0.00510715	0.19007141	0.03566546	0.00972543	0.00230936	0.012	0.0454967	5.98E-02	0.00220946	0.003	0.01592385	2.11E-02	1027.03692	0.00023721	0.16181009	44	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	51	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	916.412599	0.77945454	0.1868167	0	0.000%
T6TS	Gasoline	0.01262177	0.08210157	0.20555964	0.01543612	0.00149035	0.012	0.04501744	5.85E-02	0.00137032	0.003	0.0157561	2.01E-02	1561.40971	0.00322473	0.00728003	32,720	0.166%
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	26,746	0.136%
T7 CAIRP Class 8	Diesel	0.01150415	1.21651699	0.03903093	0.01216446	0.03017864	0.03600001	0.08158414	1.48E-01	0.02887313	0.009	0.02855445	6.64E-02	1284.60657	0.00053434	0.20239029	18,679	0.095%
T7 CAIRP Class 8	Electricity	0	0	0	0	0	0.03600001	0.04094388	7.69E-02	0	0.009	0.01433036	2.33E-02	0	0	0	5,008	0.025%
T7 CAIRP Class 8	Natural Gas	0.01336169	0.15337108	2.89316157	0	0.00196489	0.03600001	0.081554	1.20E-01	0.00180665	0.009	0.0285439	3.94E-02	1024.78338	0.93516719	0.2089088	34	0.000%
T7 NNOOS Class 8	Diesel	0.01117313	1.3319583	0.03796197	0.01165528	0.0295415	0.03600001	0.08160938	1.47E-01	0.02826355	0.009	0.02856328	6.58E-02	1230.83551	0.00051896	0.19391864	28,165	0.143%
T7 NOOS Class 8	Diesel	0.01151972	1.3693814	0.03906448	0.01164598	0.03127624	0.03600001	0.08161705	1.49E-01	0.02992324	0.009	0.02856597	6.75E-02	1229.85427	0.00053506	0.19376404	10,234	0.052%
T7 Other Port Class 8	Diesel	0.01001227	1.23108955	0.06334857	0.01302458	0.01648651	0.03600001	0.09400111	1.46E-01	0.01577331	0.009	0.03290039	5.77E-02	1375.43887	0.00046504	0.21670095	1,988	0.010%
T7 Other Port Class 8	Electricity	0	0	0	0	0	0.03600001	0.04707212	8.31E-02	0	0.009	0.01647524	2.55E-02	0	0	0	470	0.002%
T7 POAK Class 8	Diesel	0.01027911	1.2984531	0.06503691	0.01299459	0.0174648	0.03600001	0.09380232	1.47E-01	0.01670928	0.009	0.03283081	5.85E-02	1372.27115	0.00047744	0.21620188	6,410	0.033%
T7 POAK Class 8	Electricity	0	0	0	0	0	0.03600001	0.04706132	8.31E-02	0	0.009	0.01647146	2.55E-02	0	0	0	1,259	0.006%
T7 POAK Class 8	Natural Gas	0.0167608	0.17252782	4.97691357	0	0.00252429	0.03600001	0.09380232	1.32E-01	0.00232099	0.009	0.03283081	4.42E-02	1151.85156	1.17306642	0.23481248	14	0.000%
T7 Public Class 8	Diesel	0.03832255	2.79130452	0.16959946	0.01582657	0.01302325	0.03600001	0.10680577	1.56E-01	0.01245987	0.009	0.03738202	5.88E-02	1671.33765	0.00177998	0.26331993	10,722	0.054%
T7 Public Class 8	Electricity	0	0	0	0	0	0.03600001	0.05425694	9.03E-02	0	0.009	0.01898993	2.80E-02	0	0	0	4,716	0.024%
T7 Public Class 8	Natural Gas	0.02455703	0.31652779	8.33101697	0	0.00320577	0.03600001	0.10497811	1.44E-01	0.00294759	0.009	0.03674234	4.87E-02	1484.16534	1.71871365	0.30255681	80	0.000%
T7 Single Concrete/Transit Mix Class 8	Diesel	0.00872336	0.83069974	0.04438677	0.01386452	0.01414638	0.03600001	0.0881318	1.38E-01	0.01353441	0.009	0.03084613	5.34E-02	1464.13859	0.00040518	0.23067563	1,831	0.009%
T7 Single Concrete/Transit Mix Class 8	Electricity	0	0	0	0	0	0.03600001	0.04438002	8.04E-02	0	0.009	0.01553301	2.45E-02	0	0	0	2,011	0.010%
T7 Single Concrete/Transit Mix Class 8	Natural Gas	0.01524528	0.16574612	4.07094137	0	0.00225072	0.03600001	0.08812786	1.26E-01	0.00206945	0.009	0.03084475	4.19E-02	1127.04033	1.06699698	0.22975454	113	0.001%
T7 Single Dump Class 8	Diesel	0.01111939	1.18501995	0.06229165	0.01444519	0.01830659	0.03600001	0.08592572	1.40E-01	0.01751466	0.009	0.030074	5.66E-02	1525.46007	0.00051647	0.24033686	7,176	0.036%
T7 Single Dump Class 8	Electricity	0	0	0	0	0	0.03600001	0.04434463	8.03E-02	0	0.009	0.01552062	2.45E-02	0	0	0	4,280	0.022%
T7 Single Dump Class 8	Natural Gas	0.01522128	0.22136462	4.83168539	0	0.00212676	0.03600001	0.08606633	1.24E-01	0.00195547	0.009	0.03012321	4.11E-02	1166.85009	1.06531697	0.23787002	431	0.002%
T7 Single Other Class 8	Diesel	0.01155941	1.23537527	0.06467355	0.01456978	0.01910795	0.03600001	0.08509749	1.40E-01	0.01828135	0.009	0.02978412	5.71E-02	1538.61698	0.0005369	0.24240973	9,873	0.050%
T7 Single Other Class 8	Electricity	0	0	0	0	0	0.03600001	0.04435226	8.04E-02	0	0.009	0.01552329	2.45E-02	0	0	0	5,464	0.028%
T7 Single Other Class 8	Natural Gas	0.01521572	0.24053243	5.05812503	0	0.00208846	0.03600001	0.08485291	1.23E-01	0.00192026	0.009	0.02969852	4.06E-02	1179.48356	1.0649282	0.24044544	640	0.003%
T7 SWCV Class 8	Diesel	0.04285501	7.03211868	0.11551794	0.03815183	0.01142089	0.03600001	0.21000006	2.57E-01	0.01092683	0.009	0.07350002	9.34E-02	4028.95919	0.0019905	0.63476416	2,066	0.010%
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	4,963	0.025%
T7 SWCV Class 8	Natural Gas	0.01971484	0.46430424	11.354172	0	0.00134594	0.03600001	0.21000006	2.47E-01	0.00123754	0.009	0.07350002	8.37E-02	1353.09566	0.8643645	0.2758374	10,259	0.052%
T7 Tractor Class 8	Diesel	0.01055562	1.22655584	0.05022589	0.01243295	0.02234185	0.03600001	0.08454952	1.43E-01	0.02137535	0.009	0.02959233	6.00E-02	1312.96086	0.00049028	0.20685752	17,252	0.088%
T7 Tractor Class 8	Electricity	0	0	0	0	0	0.03600001	0.04326145	7.93E-02	0	0.009	0.01514151	2.41E-02	0	0	0	2,940	0.015%
T7 Tractor Class 8	Natural Gas	0.01454457	0.21046573	4.41510178	0	0.0020506	0.03600001	0.08419169	1.22E-01	0.00188545	0.009	0.02946709	4.04E-02	1093.65615	1.01795508	0.22294896	1,556	0.008%
T7 Utility Class 8	Diesel	0.01138272	1.10896208	0.10632165	0.01496958	0.00733113	0.03600001	0.09974064	1.43E-01	0.00701398	0.009	0.03490922	5.09E-02	1580.83671	0.0005287	0.24906147	189	0.001%
T7 Utility Class 8	Electricity	0	0	0	0	0	0.03600001	0.05191179	8.79E-02	0	0.009	0.01816913	2.72E-02	0	0	0	100	0.001%
T7IS	Gasoline	0.47241493	2.63160568	31.7799214	0.01878825	0.00152359	0.02000001	0.09423691	1.16E-01	0.00140088	0.005	0.03298292	3.94E-02	1900.48717	0.10115389	0.11785006	135	0.001%
T7IS	Electricity	0	0	0	0	0	0.02000001	0.04849451	6.85E-02	0	0.005	0.01697308	2.20E-02	0	0	0	83	0.000%
UBUS	Gasoline	0.00345148	0.01665258	0.5797688	0.00840478	0.00130237	0.008	0.09100003	1.00E-01	0.00119748	0.002	0.03185001	3.50E-02	850.168129	0.00129465	0.00285104	4,001	0.020%
UBUS	Diesel	0.06718368	0.37172218	0.07641424	0.01112061	0.00706242	0.032096	0.11000003	1.49E-01	0.00675691	0.008024	0.03850001	5.33E-02	1173.6167	0.00312051	0.18490379	2,095	0.011%
UBUS	Electricity	0	0	0	0	0	0.03154412	0.05500002	8.65E-02	0	0.00788603	0.01925001	2.71E-02	0	0	0	28,184	0.143%
UBUS	Natural Gas	0.05992098	0.05757977	48.1350051	0	0.0002913	0.032096	0.11000003	1.42E-01	0.00027869	0.008024	0.03850001	4.68E-02	1286.07865	4.19378943	0.26217555	847	0.004%
																	19,698,386	100.000%

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2040
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	2.942E-05	1.103E-03	1.792E-04	2.142E-05	8.038E-06	2.646E-05	1.017E-04	1.362E-04	7.691E-06	6.614E-06	3.560E-05	4.990E-05	2.262E+00	1.367E-06	3.563E-04	
All Other Buses	Natural Gas	2.680E-05	1.747E-04	7.536E-03	0.000E+00	3.813E-06	2.646E-05	1.017E-04	1.320E-04	3.506E-06	6.614E-06	3.560E-05	4.572E-05	1.982E+00	1.875E-03	4.041E-04	
LDA	Gasoline	6.285E-06	4.298E-05	9.488E-04	4.893E-06	1.208E-06	1.764E-05	1.502E-05	3.387E-05	1.111E-06	4.409E-06	5.257E-06	1.078E-05	4.949E-01	2.011E-06	6.446E-06	
LDA	Diesel	1.179E-05	5.498E-05	3.135E-04	3.872E-06	3.796E-06	1.764E-05	1.513E-05	3.657E-05	3.632E-06	4.409E-06	5.297E-06	1.334E-05	4.086E-01	5.478E-07	6.437E-05	
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.670E-06	2.731E-05	0.000E+00	4.409E-06	3.385E-06	7.794E-06	0.000E+00	0.000E+00	0.000E+00	
LDA	Plug-in Hybrid	2.506E-06	5.899E-06	3.708E-04	2.444E-06	5.053E-07	1.764E-05	8.626E-06	2.677E-05	4.646E-07	4.409E-06	3.019E-06	7.893E-06	2.472E-01	7.188E-07	8.838E-07	
LDT1	Gasoline	8.039E-06	5.200E-05	1.067E-03	5.691E-06	1.326E-06	1.764E-05	1.822E-05	3.719E-05	1.220E-06	4.409E-06	6.378E-06	1.201E-05	5.757E-01	2.421E-06	7.072E-06	
LDT1	Diesel	2.635E-05	5.865E-05	2.718E-04	7.032E-06	8.765E-06	1.764E-05	1.800E-05	4.440E-05	8.386E-06	4.409E-06	6.300E-06	1.909E-05	7.421E-01	1.224E-06	1.169E-04	
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.676E-06	2.731E-05	0.000E+00	4.409E-06	3.387E-06	7.796E-06	0.000E+00	0.000E+00	0.000E+00	
LDT1	Plug-in Hybrid	2.478E-06	5.834E-06	3.667E-04	2.417E-06	4.469E-07	1.764E-05	8.642E-06	2.673E-05	4.109E-07	4.409E-06	3.025E-06	7.845E-06	2.444E-01	7.094E-07	8.701E-07	
LDT2	Gasoline	9.007E-06	5.276E-05	1.144E-03	5.895E-06	1.241E-06	1.764E-05	1.808E-05	3.695E-05	1.141E-06	4.409E-06	6.326E-06	1.188E-05	5.963E-01	2.751E-06	7.089E-06	
LDT2	Diesel	2.647E-05	6.000E-05	2.751E-04	5.236E-06	8.864E-06	1.764E-05	1.806E-05	4.456E-05	8.480E-06	4.409E-06	6.320E-06	1.921E-05	5.526E-01	1.230E-06	8.706E-05	
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.681E-06	2.732E-05	0.000E+00	4.409E-06	3.388E-06	7.797E-06	0.000E+00	0.000E+00	0.000E+00	
LDT2	Plug-in Hybrid	2.491E-06	5.866E-06	3.686E-04	2.430E-06	4.747E-07	1.764E-05	8.643E-06	2.675E-05	4.364E-07	4.409E-06	3.025E-06	7.871E-06	2.458E-01	7.099E-07	8.667E-07	
LHD1	Gasoline	8.856E-06	4.172E-05	1.306E-03	1.641E-05	2.828E-06	1.764E-05	1.720E-04	1.924E-04	2.601E-06	4.409E-06	6.019E-05	6.720E-05	1.660E+00	2.515E-06	3.328E-06	
LHD1	Diesel	1.921E-04	5.677E-04	4.822E-04	1.258E-05	3.977E-05	2.646E-05	1.720E-04	2.382E-04	3.805E-05	6.614E-06	6.019E-05	1.048E-04	1.327E+00	8.921E-06	2.091E-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	8.005E-06	4.935E-05	1.313E-03	1.847E-05	2.775E-06	1.764E-05	2.006E-04	2.210E-04	2.552E-06	4.409E-06	7.022E-05	7.718E-05	1.868E+00	2.326E-06	4.377E-06	
LHD2	Diesel	2.227E-04	6.803E-04	5.628E-04	1.464E-05	4.624E-05	2.646E-05	2.006E-04	2.733E-04	4.424E-05	6.614E-06	7.022E-05	1.211E-04	1.545E+00	1.034E-05	2.434E-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	1.649E-03	1.009E-03	2.063E-02	4.040E-06	4.729E-06	8.818E-06	2.646E-05	4.000E-05	4.409E-06	2.205E-06	9.259E-06	1.587E-05	4.086E-01	2.763E-04	7.646E-05	
MDV	Gasoline	9.307E-06	5.483E-05	1.168E-03	7.145E-06	1.251E-06	1.764E-05	1.830E-05	3.719E-05	1.151E-06	4.409E-06	6.405E-06	1.196E-05	7.227E-01	2.826E-06	7.245E-06	
MDV	Diesel	9.555E-06	2.118E-05	2.996E-04	6.832E-06	2.184E-06	1.764E-05	1.834E-05	3.816E-05	2.090E-06	4.409E-06	6.420E-06	1.292E-05	7.210E-01	4.438E-07	1.136E-04	
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.764E-05	9.692E-06	2.733E-05	0.000E+00	4.409E-06	3.392E-06	7.801E-06	0.000E+00	0.000E+00	0.000E+00	
MDV	Plug-in Hybrid	2.490E-06	5.862E-06	3.684E-04	2.428E-06	4.774E-07	1.764E-05	8.650E-06	2.676E-05	4.389E-07	4.409E-06	3.028E-06	7.876E-06	2.456E-01	7.118E-07	8.719E-07	
MH	Gasoline	2.575E-05	2.296E-04	3.526E-04	4.239E-05	3.287E-06	2.646E-05	9.925E-05	1.290E-04	3.023E-06	6.614E-06	3.474E-05	4.437E-05	4.288E+00	8.983E-06	2.726E-05	
MH	Diesel	1.735E-04	5.402E-03	4.991E-04	2.273E-05	4.350E-05	3.527E-05	9.873E-05	1.775E-04	4.162E-05	8.818E-06	3.456E-05	8.499E-05	2.399E+00	8.058E-06	3.780E-04	
Motor Coach	Diesel	2.350E-05	2.187E-03	8.383E-05	3.248E-05	5.382E-05	2.646E-05	1.780E-04	2.582E-04	5.150E-05	6.614E-06	6.229E-05	1.204E-04	3.429E+00	1.092E-06	5.403E-04	
OBUS	Gasoline	3.941E-05	2.622E-04	7.977E-04	3.367E-05	2.907E-06	2.646E-05	9.876E-05	1.281E-04	2.673E-06	6.614E-06	3.457E-05	4.385E-05	3.405E+00	9.144E-06	1.806E-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	3.741E-05	6.231E-03	4.560E-04	3.814E-05	1.000E-05	0.000E+00	0.000E+00	1.000E-05	9.567E-06	0.000E+00	0.000E+00	9.567E-06	4.027E+00	1.738E-06	6.345E-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	1.966E-05	1.941E-04	4.080E-04	1.565E-05	2.724E-06	1.764E-05	9.902E-05	1.194E-04	2.505E-06	4.409E-06	3.466E-05	4.157E-05	1.583E+00	4.509E-06	1.990E-05	
SBUS	Diesel	3.753E-05	1.653E-03	1.769E-04	2.224E-05	1.135E-05	2.646E-05	9.902E-05	1.368E-04	1.086E-05	6.614E-06	3.466E-05	5.213E-05	2.349E+00	1.743E-06	3.701E-04	
SBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.095E-05	4.951E-05	7.046E-05	0.000E+00	5.237E-06	1.733E-05	2.257E-05	0.000E+00	0.000E+00	0.000E+00	
SBUS	Natural Gas	8.869E-05	7.527E-04	1.924E-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	2.535E+00	6.207E-03	5.167E-04	
T6 CAIRP Class 4	Diesel	1.246E-05	4.254E-04	6.299E-05	2.146E-05	1.246E-05	2.646E-05	9.329E-05	1.322E-04	1.192E-05	6.614E-06	3.265E-05	5.119E-05	2.266E+00	5.787E-07	3.570E-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	1.233E-05	4.291E-04	6.275E-05	2.148E-05	1.243E-05	2.646E-05	9.329E-05	1.322E-04	1.189E-05	6.614E-06	3.265E-05	5.115E-05	2.269E+00	5.725E-07	3.574E-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	1.222E-05	4.142E-04	6.221E-05	2.139E-05	1.230E-05	2.646E-05	9.329E-05	1.320E-04	1.177E-05	6.614E-06	3.265E-05	5.104E-05	2.259E+00	5.675E-07	3.559E-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	1.283E-05	4.476E-04	6.578E-05	1.888E-05	1.288E-05	2.646E-05	9.329E-05	1.326E-04	1.232E-05	6.614E-06	3.265E-05	5.158E-05	1.994E+00	5.959E-07	3.141E-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	1.986E-05	9.753E-04	1.385E-04	2.240E-05	6.768E-06	2.646E-05	1.049E-04	1.381E-04	6.475E-06	6.614E-06	3.670E-05	4.979E-05	2.366E+00	9.224E-07	3.727E-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	2.746E-05	1.358E-04	8.408E-03	0.000E+00	4.423E-06	2.646E-05	1.049E-04	1.357E-04	4.066E-06	6.614E-06	3.670E-05	4.738E-05	2.226E+00	1.922E-03	4.539E-04	
T6 Instate Delivery Class 5	Diesel	1.520E-05	9.169E-04	1.260E-04	2.247E-05	4.898E-06	2.646E-05	1.049E-04	1.362E-04	4.686E-06	6.614E-06	3.670E-05	4.800E-05	2.373E+00	7.058E-07	3.739E-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	2.745E-05	1.378E-04	8.403E-03	0.000E+00	4.411E-06	2.646E-05	1.049E-04	1.357E-04	4.056E-06	6.614E-06	3.670E-05	4.737E-05	2.221E+00	1.921E-03	4.528E-04	
T6 Instate Delivery Class 6	Diesel	1.550E-05	9.376E-04	1.276E-04	2.243E-05	5.066E-06	2.646E-05	1.049E-04	1.364E-04	4.847E-06	6.614E-06	3.670E-05	4.816E-05	2.369E+00	7.197E-07	3.732E-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	2.746E-05	1.362E-04	8.407E-03	0.000E+00	4.420E-06	2.646E-05	1.049E-04	1.357E-04	4.064E-06	6.614E-06	3.670E-05	4.738E-05	2.223E+00	1.922E-03	4.532E-04	
T6 Instate Delivery Class 7	Diesel	1.966E-05	1.661E-03	1.706E-04	2.316E-05	6.058E-06	2.646E-05	1.049E-04	1.374E-04	5.796E-06	6.614E-06	3.670E-05	4.911E-05	2.446E+00	9.130E-07	3.853E-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	2.578E-05	3.305E-04	7.971E-03	0.000E+00	3.318E-06	2.646E-05	1.049E-04	1.346E-04	3.050E-06	6.614E-06	3.670E-05	4.636E-05	2.320E+00	1.805E-03	4.729E-04	
T6 Instate Other Class 4	Diesel	1.577E-05	7.379E-04	1.059E-04	2.158E-05	8.626E-06	2.646E-05	9.891E-05	1.340E-04	8.252E-06	6.614E-06	3.462E-05	4.948E-05	2.279E+00	7.325E-07	3.590E-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	2.195E-05	1.162E-04	5.891E-03	0.000E+00	3.423E-06	2.646E-05	9.891E-05	1.288E-04	3.147E-06	6.614E-06	3.462E-05	4.438E-05	1.941E+00	1.536E-03	3.957E-04	
T6 Instate Other Class 5	Diesel	1.318E-05	6.741E-04	9.814E-05	2.165E-05	7.474E-06	2.646E-05	9.891E-05	1.328E-04	7.151E-06	6.614E-06	3.462E-05	4.838E-05	2.286E+00	6.124E-07	3.601E-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	2.194E-05	1.171E-04	5.892E-03	0.000E+00	3.417E-06	2.646E-05	9.891E-05	1.288E-04	3.142E-06	6.614E-06	3.462E-05	4.437E-05	1.936E+00	1.535E-03	3.947E-04	
T6 Instate Other Class 6	Diesel	1.375E-05	6.978E-04	1.001E-04	2.161E-05	7.718E-06	2.646E-05	9.891E-05	1.331E-04	7.384E-06	6.614E-06	3.462E-05	4.862E-05	2.282E+00	6.386E-07	3.596E-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	2.193E-05	1.174E-04	5.893E-03	0.000E+00	3.415E-06	2.646E-05	9.891E-05	1.288E-04	3.140E-06	6.614E-06	3.462E-05	4.437E-05	1.937E+00	1.535E-03	3.948E-04	
T6 Instate Other Class 7	Diesel	1.791E-05	1.202E-03	1.260E-04	2.190E-05	9.727E-06	2.646E-05	9.891E-05	1.351E-04	9.306E-06	6.614E-06	3.462E-05	5.054E-05	2.313E+00	8.319E-07	3.643E-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	2.058E-05	2.399E-04	6.037E-03	0.000E+00	2.712E-06	2.646E-05	9.891E-05	1.281E-04	2.493E-06	6.614E-06	3.462E-05	4.372E-05	1.991E+00	1.440E-03	4.059E-04	
T6 Instate Tractor Class 6	Diesel	1.484E-05	6.389E-04	9.993E-05	2.172E-05	8.082E-06	2.646E-05	9.891E-05	1.334E-04	7.732E-06	6.614E-06	3.462E-05	4.896E-05	2.294E+00	6.892E-07	3.614E-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	2.192E-05	1.183E-04	5.893E-03	0.000E+00	3.410E-06	2.646E-05	9.891E-05	1.288E-04	3.135E-06	6.614E-06	3.462E-05	4.437E-05	1.934E+00	1.534E-03	3.942E-04	
T6 Instate Tractor Class 7	Diesel	1.688E-05	1.304E-03	1.275E-04	2.023E-05	9.775E-06	2.646E-05	9.891E-05	1.351E-04	9.352E-06	6.614E-06	3.462E-05	5.058E-05	2.137E+00	7.840E-07	3.366E-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	2.060E-05	2.365E-04	6.020E-03	0.000E+00	2.720E-06	2.646E-05	9.891E-05	1.281E-04	2.501E-06	6.614E-06	3.462E-05	4.373E-05	1.953E+00	1.442E-03	3.982E-04	
T6 OOS Class 4	Diesel	1.329E-05	5.378E-04	6.367E-05	2.003E-05	1.320E-05	2.646E-05	9.329E-05	1.329E-04	1.263E-05	6.614E-06	3.265E-05	5.189E-05	2.115E+00	6.173E-07	3.333E-04	
T6 OOS Class 5	Diesel	1.232E-05	5.221E-04	6.127E-05	2.006E-05	1.273E-05	2.646E-05	9.329E-05	1.325E-04	1.217E-05	6.614E-06	3.265E-05	5.144E-05	2.118E+00	5.720E-07	3.337E-04	
T6 OOS Class 6	Diesel	1.241E-05	5.082E-04	6.130E-05	1.995E-05	1.271E-05	2.646E-05	9.329E-05	1.325E-04	1.216E-05	6.614E-06	3.265E-05	5.142E-05	2.107E+00	5.763E-07	3.319E-04	
T6 OOS Class 7	Diesel	1.251E-05	5.199E-04	6.414E-05	1.808E-05	1.306E-05	2.646E-05	9.329E-05	1.328E-04	1.250E-05	6.614E-06	3.265E-05	5.176E-05	1.909E+00	5.809E-07	3.008E-04	
T6 Public Class 4	Diesel	5.077E-05	2.565E-03	1.742E-04	2.336E-05	1.557E-05	2.646E-05	1.018E-04	1.438E-04	1.489E-05	6.614E-06	3.562E-05	5.713E-05	2.467E+00	2.358E-06	3.886E-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	2.777E-05	1.376E-04	6.740E-03	0.000E+00	3.911E-06	2.646E-05	1.018E-04	1.322E-04	3.596E-06	6.614E-06	3.562E-05	4.583E-05	2.181E+00	1.943E-03	4.446E-04	
T6 Public Class 5	Diesel	3.843E-05	1.801E-03	1.576E-04	2.333E-05	1.125E-05	2.646E-05	1.018E-04	1.395E-04	1.077E-05	6.614E-06	3.562E-05	5.300E-05	2.464E+00	1.785E-06	3.882E-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	2.743E-05	1.937E-04	6.766E-03	0.000E+00	3.644E-06	2.646E-05	1.018E-04	1.319E-04	3.351E-06	6.614E-06	3.562E-05	4.559E-05	2.212E+00	1.920E-03	4.509E-04	
T6 Public Class 6	Diesel	4.213E-05	2.149E-03	1.606E-04	2.326E-05	1.311E-05	2.646E-05	1.018E-04	1.413E-04	1.254E-05	6.614E-06	3.562E-05	5.478E-05	2.456E+00	1.957E-06	3.870E-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	2.766E-05	1.557E-04	6.751E-03	0.000E+00	3.825E-06	2.646E-05	1.018E-04	1.321E-04	3.517E-06	6.614E-06	3.562E-05	4.576E-05	2.182E+00	1.936E-03	4.448E-04	
T6 Public Class 7	Diesel	3.599E-05	1.889E-03	1.406E-04	2.301E-05	1.167E-05	2.646E-05	1.018E-04	1.399E-04	1.116E-05	6.614E-06	3.562E-05	5.340E-05	2.430E+00	1.672E-06	3.829E-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	2.774E-05	1.417E-04	6.745E-03	0.000E+00	3.892E-06	2.646E-05	1.018E-04	1.321E-04	3.578E-06	6.614E-06	3.562E-05	4.582E-05	2.197E+00	1.942E-03	4.479E-04	
T6 Utility Class 5	Diesel	1.138E-05	4.441E-04	7.949E-05	2.146E-05	5.187E-06	2.646E-05	1.003E-04	1.319E-04	4.963E-06	6.614E-06	3.511E-05	4.668E-05	2.266E+00	5.287E-07	3.570E-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	2.020E+00	1.718E-03	4.118E-04	
T6 Utility Class 6	Diesel	1.138E-05	4.303E-04	7.948E-05	2.145E-05	5.123E-06	2.646E-05	1.003E-04	1.319E-04	4.901E-06	6.614E-06	3.511E-05	4.662E-05	2.265E+00	5.286E-07	3.568E-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	2.020E+00	1.718E-03	4.118E-04	
T6 Utility Class 7	Diesel	1.126E-05	4.190E-04	7.863E-05	2.144E-05	5.091E-06	2.646E-05	1.003E-04	1.318E-04	4.871E-06	6.614E-06	3.511E-05	4.659E-05	2.264E+00	5.230E-07	3.567E-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	2.020E+00	1.718E-03	4.119E-04	
T6TS	Gasoline	2.783E-05	1.810E-04	4.532E-04	3.403E-05	3.286E-06	2.646E-05	9.925E-05	1.290E-04	3.021E-06	6.614E-06	3.474E-05	4.437E-05	3.442E+00	7.109E-06	1.605E-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	2.536E-05	2.682E-03	8.605E-05	2.682E-05	6.653E-05	7.937E-05	1.799E-04	3.258E-04	6.365E-05	1.984E-05	6.295E-05	1.464E-04	2.832E+00	1.178E-06	4.462E-04	
T7 CAIRP Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.026E-05	1.696E-04	0.000E+00	1.984E-05	3.159E-05	5.143E-05	0.000E+00	0.000E+00	0.000E+00	
T7 CAIRP Class 8	Natural Gas	2.946E-05	3.381E-04	6.378E-03	0.000E+00	4.332E-06	7.937E-05	1.798E-04	2.635E-04	3.983E-06	1.984E-05	6.293E-05	8.675E-05	2.259E+00	2.062E-03	4.606E-04	
T7 NNOOS Class 8	Diesel	2.463E-05	2.936E-03	8.369E-05	2.570E-05	6.513E-05	7.937E-05	1.799E-04	3.244E-04	6.231E-05	1.984E-05	6.297E-05	1.451E-04	2.713E+00	1.144E-06	4.275E-04	
T7 NOOS Class 8	Diesel	2.540E-05	3.019E-03	8.612E-05	2.567E-05	6.895E-05	7.937E-05	1.799E-04	3.283E-04	6.597E-05	1.984E-05	6.298E-05	1.488E-04	2.711E+00	1.180E-06	4.272E-04	
T7 Other Port Class 8	Diesel	2.207E-05	2.714E-03	1.397E-04	2.871E-05	3.635E-05	7.937E-05	2.072E-04	3.229E-04	3.477E-05	1.984E-05	7.253E-05	1.271E-04	3.032E+00	1.025E-06	4.777E-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	1.038E-04	1.831E-04	0.000E+00	1.984E-05	3.632E-05	5.616E-05	0.000E+00	0.000E+00	0.000E+00	
T7 POAK Class 8	Diesel	2.266E-05	2.863E-03	1.434E-04	2.865E-05	3.850E-05	7.937E-05	2.068E-04	3.247E-04	3.684E-05	1.984E-05	7.238E-05	1.291E-04	3.025E+00	1.053E-06	4.766E-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	1.831E-04	0.000E+00	1.984E-05	3.631E-05	5.615E-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	2.068E-04	2.917E-04	5.117E-06	1.984E-05	7.238E-05	9.734E-05	2.539E+00	2.586E-03	5.177E-04	
T7 Public Class 8	Diesel	8.449E-05	6.154E-03	3.739E-04	3.489E-05	2.871E-05	7.937E-05	2.355E-04	3.435E-04	2.747E-05	1.984E-05	8.241E-05	1.297E-04	3.685E+00	3.924E-06	5.805E-04	
T7 Public Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.196E-04	1.990E-04	0.000E+00	1.984E-05	4.187E-05	6.171E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Public Class 8	Natural Gas	5.414E-05	6.978E-04	1.837E-02	0.000E+00	7.067E-06	7.937E-05	2.314E-04	3.179E-04	6.498E-06	1.984E-05	8.100E-05	1.073E-04	3.272E+00	3.789E-03	6.670E-04	
T7 Single Concrete/Transit Mix Class 8	Diesel	1.923E-05	1.831E-03	9.786E-05	3.057E-05	3.119E-05	7.937E-05	1.943E-04	3.048E-04	2.984E-05	1.984E-05	6.800E-05	1.177E-04	3.228E+00	8.933E-07	5.085E-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	9.784E-05	1.772E-04	0.000E+00	1.984E-05	3.424E-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	3.654E-04	8.975E-03	0.000E+00	4.962E-06	7.937E-05	1.943E-04	2.786E-04	4.562E-06	1.984E-05	6.800E-05	9.240E-05	2.485E+00	2.352E-03	5.065E-04	
T7 Single Dump Class 8	Diesel	2.451E-05	2.612E-03	1.373E-04	3.185E-05	4.036E-05	7.937E-05	1.894E-04	3.092E-04	3.861E-05	1.984E-05	6.630E-05	1.248E-04	3.363E+00	1.139E-06	5.298E-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	9.776E-05	1.771E-04	0.000E+00	1.984E-05	3.422E-05	5.406E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Single Dump Class 8	Natural Gas	3.356E-05	4.880E-04	1.065E-02	0.000E+00	4.689E-06	7.937E-05	1.897E-04	2.738E-04	4.311E-06	1.984E-05	6.641E-05	9.056E-05	2.572E+00	2.349E-03	5.244E-04	
T7 Single Other Class 8	Diesel	2.548E-05	2.724E-03	1.426E-04	3.212E-05	4.213E-05	7.937E-05	1.876E-04	3.091E-04	4.030E-05	1.984E-05	6.566E-05	1.258E-04	3.392E+00	1.184E-06	5.344E-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	9.778E-05	1.771E-04	0.000E+00	1.984E-05	3.422E-05	5.406E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Single Other Class 8	Natural Gas	3.354E-05	5.303E-04	1.115E-02	0.000E+00	4.604E-06	7.937E-05	1.871E-04	2.710E-04	4.233E-06	1.984E-05	6.547E-05	8.955E-05	2.600E+00	2.348E-03	5.301E-04	
T7 SWCV Class 8	Diesel	9.448E-05	1.550E-02	2.547E-04	8.411E-05	2.518E-05	7.937E-05	4.630E-04	5.675E-04	2.409E-05	1.984E-05	1.620E-04	2.060E-04	8.882E+00	4.388E-06	1.399E-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	4.346E-05	1.024E-03	2.503E-02	0.000E+00	2.967E-06	7.937E-05	4.630E-04	5.453E-04	2.728E-06	1.984E-05	1.620E-04	1.846E-04	2.983E+00	1.906E-03	6.081E-04	
T7 Tractor Class 8	Diesel	2.327E-05	2.704E-03	1.107E-04	2.741E-05	4.925E-05	7.937E-05	1.864E-04	3.150E-04	4.712E-05	1.984E-05	6.524E-05	1.322E-04	2.895E+00	1.081E-06	4.560E-04	
T7 Tractor Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	9.537E-05	1.747E-04	0.000E+00	1.984E-05	3.338E-05	5.322E-05	0.000E+00	0.000E+00	0.000E+00	
T7 Tractor Class 8	Natural Gas	3.206E-05	4.640E-04	9.734E-03	0.000E+00	4.521E-06	7.937E-05	1.856E-04	2.695E-04	4.157E-06	1.984E-05	6.496E-05	8.896E-05	2.411E+00	2.244E-03	4.915E-04	
T7 Utility Class 8	Diesel	2.509E-05	2.445E-03	2.344E-04	3.300E-05	1.616E-05	7.937E-05	2.199E-04	3.154E-04	1.546E-05	1.984E-05	7.696E-05	1.123E-04	3.485E+00	1.166E-06	5.491E-04	
T7 Utility Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.937E-05	1.144E-04	1.938E-04	0.000E+00	1.984E-05	4.006E-05	5.990E-05	0.000E+00	0.000E+00	0.000E+00	
T7IS	Gasoline	1.041E-03	5.802E-03	7.006E-02	4.142E-05	3.359E-06	4.409E-05	2.078E-04	2.552E-04	3.088E-06	1.102E-05	7.271E-05	8.683E-05	4.190E+00	2.230E-04	2.598E-04	
T7IS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.409E-05	1.069E-04	1.510E-04	0.000E+00	1.102E-05	3.742E-05	4.844E-05	0.000E+00	0.000E+00	0.000E+00	
UBUS	Gasoline	7.609E-06	3.671E-05	1.278E-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	2.854E-06	6.285E-06	
UBUS	Diesel	1.481E-04	8.195E-04	1.685E-04	2.452E-05	1.557E-05	7.076E-05	2.425E-04	3.288E-04	1.490E-05	1.769E-05	8.488E-05	1.175E-04	2.587E+00	6.879E-06	4.076E-04	
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.954E-05	1.213E-04	1.908E-04	0.000E+00	1.739E-05	4.244E-05	5.982E-05	0.000E+00	0.000E+00	0.000E+00	
UBUS	Natural Gas	1.321E-04	1.269E-04	1.061E-01	0.000E+00	6.422E-07	7.076E-05	2.425E-04	3.139E-04	6.144E-07	1.769E-05	8.488E-05	1.032E-04	2.835E+00	9.246E-03	5.780E-04	

Source: EMFAC2021 (v1.0.2) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2040
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	1.335E-08	5.002E-07	8.128E-08	9.714E-09	3.646E-09	1.200E-08	4.614E-08	6.178E-08	3.488E-09	3.000E-09	1.615E-08	2.264E-08	1.026E-03	6.199E-10	1.616E-07
All Other Buses	Natural Gas	1.215E-08	7.923E-08	3.418E-06	0.000E+00	1.730E-09	1.200E-08	4.614E-08	5.987E-08	1.590E-09	3.000E-09	1.615E-08	2.074E-08	8.992E-04	8.507E-07	1.833E-07
LDA	Gasoline	2.851E-09	1.950E-08	4.304E-07	2.219E-09	5.479E-10	8.000E-09	6.813E-09	1.536E-08	5.038E-10	2.000E-09	2.385E-09	4.888E-09	2.245E-04	9.123E-10	2.924E-09
LDA	Diesel	5.349E-09	2.494E-08	1.422E-07	1.756E-09	1.722E-09	8.000E-09	6.865E-09	1.659E-08	1.647E-09	2.000E-09	2.403E-09	6.050E-09	1.853E-04	2.485E-10	2.920E-08
LDA	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.386E-09	1.239E-08	0.000E+00	2.000E-09	1.535E-09	3.535E-09	0.000E+00	0.000E+00	0.000E+00
LDA	Plug-in Hybrid	1.137E-09	2.676E-09	1.682E-07	1.108E-09	2.292E-10	8.000E-09	3.913E-09	1.214E-08	2.107E-10	2.000E-09	1.369E-09	3.580E-09	1.121E-04	3.261E-10	4.009E-10
LDT1	Gasoline	3.646E-09	2.359E-08	4.840E-07	2.581E-09	6.017E-10	8.000E-09	8.266E-09	1.687E-08	5.532E-10	2.000E-09	2.893E-09	5.446E-09	2.611E-04	1.098E-09	3.208E-09
LDT1	Diesel	1.195E-08	2.660E-08	1.233E-07	3.190E-09	3.976E-09	8.000E-09	8.164E-09	2.014E-08	3.804E-09	2.000E-09	2.858E-09	8.661E-09	3.366E-04	5.552E-10	5.304E-08
LDT1	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.389E-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
LDT1	Plug-in Hybrid	1.124E-09	2.646E-09	1.663E-07	1.096E-09	2.027E-10	8.000E-09	3.920E-09	1.212E-08	1.864E-10	2.000E-09	1.372E-09	3.558E-09	1.109E-04	3.218E-10	3.947E-10
LDT2	Gasoline	4.086E-09	2.393E-08	5.189E-07	2.674E-09	5.628E-10	8.000E-09	8.199E-09	1.676E-08	5.174E-10	2.000E-09	2.870E-09	5.387E-09	2.705E-04	1.248E-09	3.215E-09
LDT2	Diesel	1.201E-08	2.721E-08	1.248E-07	2.375E-09	4.021E-09	8.000E-09	8.190E-09	2.021E-08	3.847E-09	2.000E-09	2.867E-09	8.713E-09	2.507E-04	5.578E-10	3.949E-08
LDT2	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.391E-09	1.239E-08	0.000E+00	2.000E-09	1.537E-09	3.537E-09	0.000E+00	0.000E+00	0.000E+00
LDT2	Plug-in Hybrid	1.130E-09	2.661E-09	1.672E-07	1.102E-09	2.153E-10	8.000E-09	3.920E-09	1.214E-08	1.980E-10	2.000E-09	1.372E-09	3.570E-09	1.115E-04	3.220E-10	3.931E-10
LHD1	Gasoline	4.017E-09	1.892E-08	5.925E-07	7.443E-09	1.283E-09	8.000E-09	7.800E-08	8.728E-08	1.180E-09	2.000E-09	2.730E-08	3.048E-08	7.529E-04	1.141E-09	1.510E-09
LHD1	Diesel	8.712E-08	2.575E-07	2.187E-07	5.705E-09	1.804E-08	1.200E-08	7.800E-08	1.080E-07	1.726E-08	3.000E-09	2.730E-08	4.756E-08	6.021E-04	4.046E-09	9.487E-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	3.631E-09	2.239E-08	5.956E-07	8.378E-09	1.259E-09	8.000E-09	9.100E-08	1.003E-07	1.158E-09	2.000E-09	3.185E-08	3.501E-08	8.475E-04	1.055E-09	1.985E-09
LHD2	Diesel	1.010E-07	3.086E-07	2.553E-07	6.641E-09	2.098E-08	1.200E-08	9.100E-08	1.240E-07	2.007E-08	3.000E-09	3.185E-08	5.492E-08	7.008E-04	4.692E-09	1.104E-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	7.480E-07	4.579E-07	9.359E-06	1.832E-09	2.145E-09	4.000E-09	1.200E-08	1.814E-08	2.000E-09	1.000E-09	4.200E-09	7.200E-09	1.853E-04	1.253E-07	3.468E-08
MDV	Gasoline	4.221E-09	2.487E-08	5.299E-07	3.241E-09	5.676E-10	8.000E-09	8.301E-09	1.687E-08	5.219E-10	2.000E-09	2.905E-09	5.427E-09	3.278E-04	1.282E-09	3.286E-09
MDV	Diesel	4.334E-09	9.607E-09	1.359E-07	3.099E-09	9.908E-10	8.000E-09	8.320E-09	1.731E-08	9.479E-10	2.000E-09	2.912E-09	5.860E-09	3.271E-04	2.013E-10	5.153E-08
MDV	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.000E-09	4.396E-09	1.240E-08	0.000E+00	2.000E-09	1.539E-09	3.539E-09	0.000E+00	0.000E+00	0.000E+00
MDV	Plug-in Hybrid	1.129E-09	2.659E-09	1.671E-07	1.101E-09	2.165E-10	8.000E-09	3.924E-09	1.214E-08	1.991E-10	2.000E-09	1.373E-09	3.572E-09	1.114E-04	3.229E-10	3.955E-10
MH	Gasoline	1.168E-08	1.041E-07	1.600E-07	1.923E-08	1.491E-09	1.200E-08	4.502E-08	5.851E-08	1.371E-09	3.000E-09	1.576E-08	2.013E-08	1.945E-03	4.075E-09	1.236E-08
MH	Diesel	7.869E-08	2.450E-06	2.264E-07	1.031E-08	1.973E-08	1.600E-08	4.479E-08	8.052E-08	1.888E-08	4.000E-09	1.567E-08	3.855E-08	1.088E-03	3.655E-09	1.715E-07
Motor Coach	Diesel	1.066E-08	9.920E-07	3.803E-08	1.473E-08	2.441E-08	1.200E-08	8.072E-08	1.171E-07	2.336E-08	3.000E-09	2.825E-08	5.461E-08	1.556E-03	4.951E-10	2.451E-07
OBUS	Gasoline	1.788E-08	1.189E-07	3.618E-07	1.527E-08	1.319E-09	1.200E-08	4.480E-08	5.812E-08	1.213E-09	3.000E-09	1.568E-08	1.989E-08	1.545E-03	4.148E-09	8.192E-09
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	1.697E-08	2.826E-06	2.069E-07	1.730E-08	4.536E-09	0.000E+00	0.000E+00	4.536E-09	4.340E-09	0.000E+00	0.000E+00	4.340E-09	1.827E-03	7.882E-10	2.878E-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	8.916E-09	8.805E-08	1.850E-07	7.099E-09	1.236E-09	8.000E-09	4.492E-08	5.415E-08	1.136E-09	2.000E-09	1.572E-08	1.886E-08	7.180E-04	2.045E-09	9.026E-09
SBUS	Diesel	1.702E-08	7.496E-07	8.026E-08	1.009E-08	5.150E-09	1.200E-08	4.492E-08	6.207E-08	4.927E-09	3.000E-09	1.572E-08	2.365E-08	1.065E-03	7.906E-10	1.679E-07
SBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.502E-09	2.246E-08	3.196E-08	0.000E+00	2.376E-09	7.860E-09	1.024E-08	0.000E+00	0.000E+00	0.000E+00
SBUS	Natural Gas	4.023E-08	3.414E-07	8.726E-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	1.150E-03	2.816E-06	2.344E-07
T6 CAIRP Class 4	Diesel	5.652E-09	1.930E-07	2.857E-08	9.733E-09	5.654E-09	1.200E-08	4.231E-08	5.997E-08	5.409E-09	3.000E-09	1.481E-08	2.322E-08	1.028E-03	2.625E-10	1.619E-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	5.591E-09	1.946E-07	2.847E-08	9.744E-09	5.637E-09	1.200E-08	4.231E-08	5.995E-08	5.393E-09	3.000E-09	1.481E-08	2.320E-08	1.029E-03	2.597E-10	1.621E-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	5.542E-09	1.879E-07	2.822E-08	9.704E-09	5.581E-09	1.200E-08	4.231E-08	5.990E-08	5.340E-09	3.000E-09	1.481E-08	2.315E-08	1.025E-03	2.574E-10	1.615E-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	5.820E-09	2.030E-07	2.984E-08	8.565E-09	5.840E-09	1.200E-08	4.231E-08	6.015E-08	5.588E-09	3.000E-09	1.481E-08	2.340E-08	9.044E-04	2.703E-10	1.425E-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	9.008E-09	4.424E-07	6.282E-08	1.016E-08	3.070E-09	1.200E-08	4.756E-08	6.263E-08	2.937E-09	3.000E-09	1.665E-08	2.258E-08	1.073E-03	4.184E-10	1.691E-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	1.246E-08	6.158E-08	3.814E-06	0.000E+00	2.006E-09	1.200E-08	4.756E-08	6.157E-08	1.845E-09	3.000E-09	1.665E-08	2.149E-08	1.010E-03	8.719E-07	2.059E-07
T6 Instate Delivery Class 5	Diesel	6.893E-09	4.159E-07	5.717E-08	1.019E-08	2.222E-09	1.200E-08	4.756E-08	6.178E-08	2.126E-09	3.000E-09	1.665E-08	2.177E-08	1.076E-03	3.202E-10	1.696E-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	1.245E-08	6.249E-08	3.812E-06	0.000E+00	2.001E-09	1.200E-08	4.756E-08	6.156E-08	1.840E-09	3.000E-09	1.665E-08	2.149E-08	1.007E-03	8.713E-07	2.054E-07
T6 Instate Delivery Class 6	Diesel	7.029E-09	4.253E-07	5.790E-08	1.017E-08	2.298E-09	1.200E-08	4.756E-08	6.186E-08	2.199E-09	3.000E-09	1.665E-08	2.185E-08	1.074E-03	3.265E-10	1.693E-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	1.246E-08	6.177E-08	3.813E-06	0.000E+00	2.005E-09	1.200E-08	4.756E-08	6.157E-08	1.843E-09	3.000E-09	1.665E-08	2.149E-08	1.008E-03	8.718E-07	2.056E-07
T6 Instate Delivery Class 7	Diesel	8.916E-09	7.536E-07	7.737E-08	1.051E-08	2.748E-09	1.200E-08	4.756E-08	6.231E-08	2.629E-09	3.000E-09	1.665E-08	2.228E-08	1.109E-03	4.141E-10	1.748E-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	1.170E-08	1.499E-07	3.615E-06	0.000E+00	1.505E-09	1.200E-08	4.756E-08	6.107E-08	1.384E-09	3.000E-09	1.665E-08	2.103E-08	1.052E-03	8.186E-07	2.145E-07
T6 Instate Other Class 4	Diesel	7.154E-09	3.347E-07	4.802E-08	9.789E-09	3.913E-09	1.200E-08	4.486E-08	6.078E-08	3.743E-09	3.000E-09	1.570E-08	2.245E-08	1.034E-03	3.323E-10	1.629E-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	9.955E-09	5.269E-08	2.672E-06	0.000E+00	1.552E-09	1.200E-08	4.486E-08	5.842E-08	1.427E-09	3.000E-09	1.570E-08	2.013E-08	8.805E-04	6.967E-07	1.795E-07
T6 Instate Other Class 5	Diesel	5.980E-09	3.058E-07	4.451E-08	9.819E-09	3.390E-09	1.200E-08	4.486E-08	6.025E-08	3.244E-09	3.000E-09	1.570E-08	2.195E-08	1.037E-03	2.778E-10	1.634E-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	9.950E-09	5.313E-08	2.673E-06	0.000E+00	1.550E-09	1.200E-08	4.486E-08	5.841E-08	1.425E-09	3.000E-09	1.570E-08	2.013E-08	8.783E-04	6.964E-07	1.791E-07
T6 Instate Other Class 6	Diesel	6.236E-09	3.165E-07	4.538E-08	9.803E-09	3.501E-09	1.200E-08	4.486E-08	6.036E-08	3.349E-09	3.000E-09	1.570E-08	2.205E-08	1.035E-03	2.897E-10	1.631E-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	9.949E-09	5.326E-08	2.673E-06	0.000E+00	1.549E-09	1.200E-08	4.486E-08	5.841E-08	1.424E-09	3.000E-09	1.570E-08	2.013E-08	8.785E-04	6.963E-07	1.791E-07
T6 Instate Other Class 7	Diesel	8.124E-09	5.453E-07	5.716E-08	9.933E-09	4.412E-09	1.200E-08	4.486E-08	6.128E-08	4.221E-09	3.000E-09	1.570E-08	2.292E-08	1.049E-03	3.774E-10	1.653E-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	9.335E-09	1.088E-07	2.738E-06	0.000E+00	1.230E-09	1.200E-08	4.486E-08	5.809E-08	1.131E-09	3.000E-09	1.570E-08	1.983E-08	9.031E-04	6.534E-07	1.841E-07
T6 Instate Tractor Class 6	Diesel	6.730E-09	2.898E-07	4.533E-08	9.852E-09	3.666E-09	1.200E-08	4.486E-08	6.053E-08	3.507E-09	3.000E-09	1.570E-08	2.221E-08	1.040E-03	3.126E-10	1.639E-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	9.944E-09	5.368E-08	2.673E-06	0.000E+00	1.547E-09	1.200E-08	4.486E-08	5.841E-08	1.422E-09	3.000E-09	1.570E-08	2.012E-08	8.771E-04	6.960E-07	1.788E-07
T6 Instate Tractor Class 7	Diesel	7.657E-09	5.913E-07	5.783E-08	9.178E-09	4.434E-09	1.200E-08	4.486E-08	6.130E-08	4.242E-09	3.000E-09	1.570E-08	2.294E-08	9.692E-04	3.556E-10	1.527E-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	9.345E-09	1.073E-07	2.731E-06	0.000E+00	1.234E-09	1.200E-08	4.486E-08	5.810E-08	1.135E-09	3.000E-09	1.570E-08	1.984E-08	8.860E-04	6.540E-07	1.806E-07
T6 OOS Class 4	Diesel	6.029E-09	2.440E-07	2.888E-08	9.086E-09	5.987E-09	1.200E-08	4.231E-08	6.030E-08	5.728E-09	3.000E-09	1.481E-08	2.354E-08	9.595E-04	2.800E-10	1.512E-07
T6 OOS Class 5	Diesel	5.586E-09	2.368E-07	2.779E-08	9.098E-09	5.772E-09	1.200E-08	4.231E-08	6.009E-08	5.522E-09	3.000E-09	1.481E-08	2.333E-08	9.608E-04	2.595E-10	1.514E-07
T6 OOS Class 6	Diesel	5.628E-09	2.305E-07	2.781E-08	9.049E-09	5.765E-09	1.200E-08	4.231E-08	6.008E-08	5.516E-09	3.000E-09	1.481E-08	2.333E-08	9.556E-04	2.614E-10	1.506E-07
T6 OOS Class 7	Diesel	5.673E-09	2.358E-07	2.909E-08	8.200E-09	5.926E-09	1.200E-08	4.231E-08	6.024E-08	5.669E-09	3.000E-09	1.481E-08	2.348E-08	8.660E-04	2.635E-10	1.364E-07
T6 Public Class 4	Diesel	2.303E-08	1.164E-06	7.902E-08	1.060E-08	7.061E-09	1.200E-08	4.617E-08	6.523E-08	6.756E-09	3.000E-09	1.616E-08	2.591E-08	1.119E-03	1.070E-09	1.763E-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	1.260E-08	6.243E-08	3.057E-06	0.000E+00	1.774E-09	1.200E-08	4.617E-08	5.994E-08	1.631E-09	3.000E-09	1.616E-08	2.079E-08	9.892E-04	8.815E-07	2.017E-07
T6 Public Class 5	Diesel	1.743E-08	8.169E-07	7.147E-08	1.058E-08	5.104E-09	1.200E-08	4.617E-08	6.327E-08	4.883E-09	3.000E-09	1.616E-08	2.404E-08	1.118E-03	8.097E-10	1.761E-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	1.244E-08	8.787E-08	3.069E-06	0.000E+00	1.653E-09	1.200E-08	4.617E-08	5.982E-08	1.520E-09	3.000E-09	1.616E-08	2.068E-08	1.003E-03	8.707E-07	2.045E-07
T6 Public Class 6	Diesel	1.911E-08	9.747E-07	7.283E-08	1.055E-08	5.944E-09	1.200E-08	4.617E-08	6.411E-08	5.687E-09	3.000E-09	1.616E-08	2.485E-08	1.114E-03	8.876E-10	1.755E-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	1.255E-08	7.060E-08	3.062E-06	0.000E+00	1.735E-09	1.200E-08	4.617E-08	5.990E-08	1.595E-09	3.000E-09	1.616E-08	2.075E-08	9.897E-04	8.781E-07	2.018E-07
T6 Public Class 7	Diesel	1.632E-08	8.568E-07	6.377E-08	1.044E-08	5.293E-09	1.200E-08	4.617E-08	6.346E-08	5.064E-09	3.000E-09	1.616E-08	2.422E-08	1.102E-03	7.583E-10	1.737E-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	1.258E-08	6.428E-08	3.060E-06	0.000E+00	1.765E-09	1.200E-08	4.617E-08	5.993E-08	1.623E-09	3.000E-09	1.616E-08	2.078E-08	9.966E-04	8.807E-07	2.032E-07
T6 Utility Class 5	Diesel	5.163E-09	2.014E-07	3.606E-08	9.732E-09	2.353E-09	1.200E-08	4.550E-08	5.985E-08	2.251E-09	3.000E-09	1.592E-08	2.117E-08	1.028E-03	2.398E-10	1.619E-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	9.162E-04	7.795E-07	1.868E-07
T6 Utility Class 6	Diesel	5.162E-09	1.952E-07	3.605E-08	9.729E-09	2.324E-09	1.200E-08	4.550E-08	5.982E-08	2.223E-09	3.000E-09	1.592E-08	2.115E-08	1.027E-03	2.398E-10	1.619E-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	9.164E-04	7.795E-07	1.868E-07
T6 Utility Class 7	Diesel	5.107E-09	1.901E-07	3.567E-08	9.725E-09	2.309E-09	1.200E-08	4.550E-08	5.981E-08	2.209E-09	3.000E-09	1.592E-08	2.113E-08	1.027E-03	2.372E-10	1.618E-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	9.164E-04	7.795E-07	1.868E-07
T6TS	Gasoline	1.262E-08	8.210E-08	2.056E-07	1.544E-08	1.490E-09	1.200E-08	4.502E-08	5.851E-08	1.370E-09	3.000E-09	1.576E-08	2.013E-08	1.561E-03	3.225E-09	7.280E-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	1.150E-08	1.217E-06	3.903E-08	1.216E-08	3.018E-08	3.600E-08	8.158E-08	1.478E-07	2.887E-08	9.000E-09	2.855E-08	6.643E-08	1.285E-03	5.343E-10	2.024E-07
T7 CAIRP Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.094E-08	7.694E-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	1.534E-07	2.893E-06	0.000E+00	1.965E-09	3.600E-08	8.155E-08	1.195E-07	1.807E-09	9.000E-09	2.854E-08	3.935E-08	1.025E-03	9.352E-07	2.089E-07
T7 NNOOS Class 8	Diesel	1.117E-08	1.332E-06	3.796E-08	1.166E-08	2.954E-08	3.600E-08	8.161E-08	1.472E-07	2.826E-08	9.000E-09	2.856E-08	6.583E-08	1.231E-03	5.190E-10	1.939E-07
T7 NOOS Class 8	Diesel	1.152E-08	1.369E-06	3.906E-08	1.165E-08	3.128E-08	3.600E-08	8.162E-08	1.489E-07	2.992E-08	9.000E-09	2.857E-08	6.749E-08	1.230E-03	5.351E-10	1.938E-07
T7 Other Port Class 8	Diesel	1.001E-08	1.231E-06	6.335E-08	1.302E-08	1.649E-08	3.600E-08	9.400E-08	1.465E-07	1.577E-08	9.000E-09	3.290E-08	5.767E-08	1.375E-03	4.650E-10	2.167E-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	4.707E-08	8.307E-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	1.028E-08	1.298E-06	6.504E-08	1.299E-08	1.746E-08	3.600E-08	9.380E-08	1.473E-07	1.671E-08	9.000E-09	3.283E-08	5.854E-08	1.372E-03	4.774E-10	2.162E-07
T7 POAK Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.706E-08	8.306E-08	0.000E+00	9.000E-09	1.647E-08	2.547E-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	9.380E-08	1.323E-07	2.321E-09	9.000E-09	3.283E-08	4.415E-08	1.152E-03	1.173E-06	2.348E-07
T7 Public Class 8	Diesel	3.832E-08	2.791E-06	1.696E-07	1.583E-08	1.302E-08	3.600E-08	1.068E-07	1.558E-07	1.246E-08	9.000E-09	3.738E-08	5.884E-08	1.671E-03	1.780E-09	2.633E-07
T7 Public Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	5.426E-08	9.026E-08	0.000E+00	9.000E-09	1.899E-08	2.799E-08	0.000E+00	0.000E+00	0.000E+00
T7 Public Class 8	Natural Gas	2.456E-08	3.165E-07	8.331E-06	0.000E+00	3.206E-09	3.600E-08	1.050E-07	1.442E-07	2.948E-09	9.000E-09	3.674E-08	4.869E-08	1.484E-03	1.719E-06	3.026E-07
T7 Single Concrete/Transit Mix Class 8	Diesel	8.723E-09	8.307E-07	4.439E-08	1.386E-08	1.415E-08	3.600E-08	8.813E-08	1.383E-07	1.353E-08	9.000E-09	3.085E-08	5.338E-08	1.464E-03	4.052E-10	2.307E-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	4.438E-08	8.038E-08	0.000E+00	9.000E-09	1.553E-08	2.453E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Concrete/Transit Mix Class 8	Natural Gas	1.525E-08	1.657E-07	4.071E-06	0.000E+00	2.251E-09	3.600E-08	8.813E-08	1.264E-07	2.069E-09	9.000E-09	3.084E-08	4.191E-08	1.127E-03	1.067E-06	2.298E-07
T7 Single Dump Class 8	Diesel	1.112E-08	1.185E-06	6.229E-08	1.445E-08	1.831E-08	3.600E-08	8.593E-08	1.402E-07	1.751E-08	9.000E-09	3.007E-08	5.659E-08	1.525E-03	5.165E-10	2.403E-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	4.434E-08	8.034E-08	0.000E+00	9.000E-09	1.552E-08	2.452E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Dump Class 8	Natural Gas	1.522E-08	2.214E-07	4.832E-06	0.000E+00	2.127E-09	3.600E-08	8.607E-08	1.242E-07	1.955E-09	9.000E-09	3.012E-08	4.108E-08	1.167E-03	1.065E-06	2.379E-07
T7 Single Other Class 8	Diesel	1.156E-08	1.235E-06	6.467E-08	1.457E-08	1.911E-08	3.600E-08	8.510E-08	1.402E-07	1.828E-08	9.000E-09	2.978E-08	5.707E-08	1.539E-03	5.369E-10	2.424E-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	4.435E-08	8.035E-08	0.000E+00	9.000E-09	1.552E-08	2.452E-08	0.000E+00	0.000E+00	0.000E+00
T7 Single Other Class 8	Natural Gas	1.522E-08	2.405E-07	5.058E-06	0.000E+00	2.088E-09	3.600E-08	8.485E-08	1.229E-07	1.920E-09	9.000E-09	2.970E-08	4.062E-08	1.179E-03	1.065E-06	2.404E-07
T7 SWCV Class 8	Diesel	4.286E-08	7.032E-06	1.155E-07	3.815E-08	1.142E-08	3.600E-08	2.100E-07	2.574E-07	1.093E-08	9.000E-09	7.350E-08	9.343E-08	4.029E-03	1.991E-09	6.348E-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	1.971E-08	4.643E-07	1.135E-05	0.000E+00	1.346E-09	3.600E-08	2.100E-07	2.473E-07	1.238E-09	9.000E-09	7.350E-08	8.374E-08	1.353E-03	8.644E-07	2.758E-07
T7 Tractor Class 8	Diesel	1.056E-08	1.227E-06	5.023E-08	1.243E-08	2.234E-08	3.600E-08	8.455E-08	1.429E-07	2.138E-08	9.000E-09	2.959E-08	5.997E-08	1.313E-03	4.903E-10	2.069E-07
T7 Tractor Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	4.326E-08	7.926E-08	0.000E+00	9.000E-09	1.514E-08	2.414E-08	0.000E+00	0.000E+00	0.000E+00
T7 Tractor Class 8	Natural Gas	1.454E-08	2.105E-07	4.415E-06	0.000E+00	2.051E-09	3.600E-08	8.419E-08	1.222E-07	1.885E-09	9.000E-09	2.947E-08	4.035E-08	1.094E-03	1.018E-06	2.229E-07
T7 Utility Class 8	Diesel	1.138E-08	1.109E-06	1.063E-07	1.497E-08	7.331E-09	3.600E-08	9.974E-08	1.431E-07	7.014E-09	9.000E-09	3.491E-08	5.092E-08	1.581E-03	5.287E-10	2.491E-07
T7 Utility Class 8	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.600E-08	5.191E-08	8.791E-08	0.000E+00	9.000E-09	1.817E-08	2.717E-08	0.000E+00	0.000E+00	0.000E+00
T7IS	Gasoline	4.724E-07	2.632E-06	3.178E-05	1.879E-08	1.524E-09	2.000E-08	9.424E-08	1.158E-07	1.401E-09	5.000E-09	3.298E-08	3.938E-08	1.900E-03	1.012E-07	1.179E-07
T7IS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.000E-08	4.849E-08	6.849E-08	0.000E+00	5.000E-09	1.697E-08	2.197E-08	0.000E+00	0.000E+00	0.000E+00
UBUS	Gasoline	3.451E-09	1.665E-08	5.798E-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	1.295E-09	2.851E-09
UBUS	Diesel	6.718E-08	3.717E-07	7.641E-08	1.112E-08	7.062E-09	3.210E-08	1.100E-07	1.492E-07	6.757E-09	8.024E-09	3.850E-08	5.328E-08	1.174E-03	3.121E-09	1.849E-07
UBUS	Electricity	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.154E-08	5.500E-08	8.654E-08	0.000E+00	7.886E-09	1.925E-08	2.714E-08	0.000E+00	0.000E+00	0.000E+00
UBUS	Natural Gas	5.992E-08	5.758E-08	4.814E-05	0.000E+00	2.913E-10	3.210E-08	1.100E-07	1.424E-07	2.787E-10	8.024E-09	3.850E-08	4.680E-08	1.286E-03	4.194E-06	2.622E-07

City Limits - With CAP	2019	2030	2040	2045
Residential built environment	114,620	74,750	36,430	390
Commercial/ industrial built environment	83,660	62,080	46,240	28,700
On-road transportation	276,560	134,800	40,730	12,020
Off-road equipment	14,400	20,100	19,480	20,470
Rail	4,440	1,670	1,880	2,000
Solid waste generation	21,910	13,310	13,040	12,580
Landfill	4,180	4,470	3,660	3,310
Water and wastewater	1,660	1,820	2,020	2,150
Land use and sequestration	-1,050	-1,050	-1,050	-1,050
Total	**520,380**	**311,950**	**162,430**	**80,570**
Point sources	*18,090*	*18,090*	*18,090*	*18,090*

SOI - CAP	2019	2030	2040	2045
Residential built environment	3,700	2,510	1,700	920
Commercial/ industrial built environment	1,480	1,160	880	590
On-road transportation	7,720	3,360	1,090	460
Off-road equipment	180	320	260	270
Rail	110	30	30	30
Solid waste generation	610	330	280	250
Landfill	0	0	0	0
Water and wastewater	50	50	40	40
Land use and sequestration	-270	-270	-270	-270
Total	**13,580**	**7,490**	**4,010**	**2,290**
Point sources	*0*	*0*	*0*	*0*

adapted to ensure that they are appropriate for San Mateo and meet the CEQA requirements for community-wide plans as well as individual development projects. These targets are:

- 2030: Reduce emissions to 40 percent below 1990 levels (49 percent below baseline 2005 levels), equal to 339,880 $MTCO_2e$.
- 2045: Reduce emissions to 85 percent below 1990 levels (87 percent below baseline 2005 levels), equal to 84,970 $MTCO_2e$.

Existing and Planned Accomplishments

The forecast represents a "worst case" scenario if no action is taken to reduce GHG emissions. However, San Mateo, along with regional and State agencies, have already taken actions to reduce GHG emissions below their 2019 limit and to close the gap to the City's GHG reduction targets. The 2020 CAP identifies the GHG reductions from these existing and planned accomplishments. **Table ES-1** shows the reductions from these accomplishments and San Mateo's projected future emissions affect taking these accomplishments into account.

Table ES-1: Reductions from Existing and Planned Accomplishments

	2030	2040	2045
Forecasted Emissions	605,420 $MTCO_2e$	696,810 $MTCO_2e$	750,400 $MTCO_2e$
Reductions from State existing and planned accomplishments	-72,900 $MTCO_2e$	-147,970 $MTCO_2e$	-196,140 $MTCO_2e$
Reductions from local and regional existing and planned accomplishments	-23,980 $MTCO_2e$	-18,360 $MTCO_2e$	-4,950 $MTCO_2e$
Emissions with existing and planned accomplishments	508,380 $MTCO_2e$	530,510 $MTCO_2e$	549,320 $MTCO_2e$

Reduction Measures

The 2020 CAP builds on the GHG reduction measures in the 2015 CAP, as well as the existing and planned accomplishments, to provide an updated suite of GHG reduction measures that meet the City's targets. These measures are informed by several sources, including discussions with City staff, feedback from public engagement efforts, and direction from the Sustainability and Infrastructure Commission. The 2020 CAP contains 29 GHG reduction measures, all of which also provide additional community benefits such as financial savings and improvements to public health. **Table ES-2** shows these measures and the GHG reductions they allow.

Table ES-2: Reductions by Measure

Measure	2030	2040	2045
BE 1: All-electric new construction	-21,070	-38,450	-47,250
BE 2: All-electric existing buildings	-102,210	-184,610	-221,260
RE 1: Peninsula Clean Energy	-160	-170	0
RE 2: Renewable energy systems for new and existing residences	-70	-160	0
RE 3: Renewable energy systems for new and existing nonresidential buildings	-60	-90	0
EE 1: Residential energy efficiency retrofits	-6,160	-7,020	-6,790
EE 2: Nonresidential energy efficiency retrofits	-3,800	-8,860	-13,380
EE 3: Residential tree planting	Less than -10	Less than -10	0
ME 1: Energy efficiency for new municipal buildings	Supportive (no measurable GHG reductions)		
ME 2: Energy efficiency at existing municipal buildings	-10	-30	-40
ME 3: All-electric municipal buildings	-130	-200	-270
CF 1: Electric vehicle charging infrastructure	-24,420	-49,390	-69,780
CF 2: Electric vehicle education and outreach	-4,910	-8,030	-12,360
CF 3: Clean city fleet	-130	-200	-270
CF 4: Clean fuel and vehicle emissions	-4,210	-16,920	-26,360
ST 1: Bicycle mode share	-80	-170	-180
ST 2: Pedestrian mode share	-110	-120	-130
ST 3: Micromobility and shared mobility	Supportive (no measurable GHG reductions)		
ST 4: Public transit service	-3,610	-5,660	-6,910
ST 5: Commuter programs	Less than -10	-70	-160
ST 6: Transportation Demand Management	-2,010	-7,950	-13,410
ST 7: Transit-oriented development	-10,200	-18,920	-23,700

EXECUTIVE SUMMARY

Measure	2030	2040	2045
SW 1: Composting program	-1,030	-1,710	-1,850
SW 2: Expanded recycling service	-6,070	-7,730	-8,820
SW 3: Waste awareness and source reduction	-2,080	-4,050	-5,590
WW 1: Water efficiency retrofits for existing buildings	-170	-300	-360
WW 2: Water-efficient landscaping	Less than -10	-10	0
WW 3: Water efficiency in new construction	Less than -10	-10	-20
OR 1: Alternative fuel lawn and garden equipment	-3,660	-7,130	-9,890
Total	**-196,360**	**-367,960**	**-468,780**

Note: Due to rounding, totals may not equal the sum of the component parts.

When the 2020 CAP is fully implemented, it is projected to reduce GHG emissions to meet or exceed San Mateo's reduction targets:

- Projected 2030 emissions with the CAP are 311,990 $MTCO_2e$, below the reduction target of 339,880 $MTCO_2e$.
- Projected 2045 emissions with the CAP are 80,550 $MTCO_2e$, below the City's reduction target of 84,970 $MTCO_2e$

use leakage refers to the unintentional release of methane from the final use of natural gas, such as from pipelines, storage facilities, and appliances.

2019 Inventory

The project team prepared a 2019 GHG inventory to provide the most up-to-date available measurement of how San Mateo's GHG emissions have changed over time, including since the 2015 CAP. This inventory uses the same methods as the updated prior inventories, ensuring that all four inventories in the 2020 CAP are consistent with each other.

Inventory Results

The community-wide inventories in the 2020 CAP include the following sectors, consistent with guidance in the US Community Protocol:

- **On-road transportation:** on-road vehicle trips on local roads and State highways within the city limits.
- **Commercial/industrial built environment**: electricity and natural gas used in nonresidential settings (e.g., industrial, commercial), including direct access electricity.
- **Residential built environment**: electricity and natural gas used in residential settings.
- **Off-road equipment**: the use of portable equipment and vehicles that do not travel on roads (e.g., construction or lawn and garden equipment).
- **Solid waste generation**: material produced by the community that is deposited in landfills which decompose and produce methane.
- **Landfills**: emissions that occur in the inventory year as a result of waste-in-place at a landfill that is within the community boundary or operated by the City.
- **Rail**: emissions resulting from Caltrain trips generated by passengers at three stations: San Mateo, Hayward Park, and Hillsdale, as well as emissions from freight trains.
- **Water and wastewater**: energy used to treat and pump water used and wastewater created, along with emissions from the processing of wastewater.
- **Land use and sequestration**: emissions resulting from development of previously undeveloped land and sinks (negative emissions) from carbon sequestration of open space and urban trees.
- **Point sources**: stationary source emissions resulting from fossil fuel combustion within the county as reported by BAAQMD. These emissions are included as an informational item and are not counted as part of the City's total emissions based on guidance from BAAQMD as they are not under the jurisdiction of the City.

Greenhouse Gas Inventories, Forecasts, and Reduction Targets

Table 2 shows the number of residents in San Mateo for the inventory years.

Table 2: San Mateo Population (2005 – 2019)

Indicator	2005 Value	2010 Value	2015 Value	2017 Value	2019 Value	Percentage Change, 2005–2019	Source
Population	93,400	97,110	101,610	103,470	104,599	12%	CA Dept. of Finance, ABAG

In the baseline year of 2005, the GHG emissions from the covered activities totaled 666,410 $MTCO_2e$, as shown in **Table 3** and **Figure 5**. The sector with the largest portion of emissions was on-road transportation, which produced 282,370 $MTCO_2e$, or 42 percent of all community emissions. The next largest sector, commercial/industrial built environment, produced 169,000 $MTCO_2e$, 25 percent of the total. The residential built environment was the third largest sector with 25 percent of total emissions (163,770 $MTCO_2e$) followed by solid waste generation (22,180 or 3 percent), the off-road equipment (15,900 $MTCO_2e$ or 2 percent), and landfill (7,370 $MTCO_2e$ or 1 percent) sectors. Rail emissions totaled 4,350 $MTCO_2e$ (1 percent) and water and wastewater emissions totaled 2,520 $MTCO_2e$ (less than 1 percent of total emissions). Finally, land use and sequestration were responsible for a reduction in emissions of 1,050 $MTCO_2e$, equivalent to removing 1 percent of total emissions.

Table 3: San Mateo 2005 Community-Wide GHG Emissions

Sector	$MTCO_2e$ (Absolute)	Percentage
On-road transportation	282,370	42%
Commercial/industrial built environment	169,000	25%
Residential built environment	163,770	25%
Solid waste generation	22,180	3%
Off-road equipment	15,900	2%
Landfill	7,370	1%
Rail	4,350	1%
Water and wastewater	2,520	0%
Land use and sequestration	-1,050	-1%
Total	**666,410**	**100%**
Informational Items		
Point sources	7,390	1%

Note: Due to rounding, totals may not equal the sum of the component parts.

Greenhouse Gas Inventories, Forecasts, and Reduction Targets

Table 4: San Mateo 2005-2019 Community-Wide Emissions (Absolute)

Sector	2005 ($MTCO_2e$)	2010 ($MTCO_2e$)	2015 ($MTCO_2e$)	2017 ($MTCO_2e$)	2019 ($MTCO_2e$)	Percentage Change, 2005 to 2019
On-road transportation	282,370	287,550	280,570	269,110	276,560	-2%
Commercial/industrial built environment	169,000	151,200	137,350	101,720	83,660	-50%
Residential built environment	163,770	165,800	131,660	118,980	114,630	-30%
Off-road equipment	15,900	17,840	14,960	14,940	14,400	-9%
Solid waste generation	22,180	16,580	15,860	17,890	21,910	-1%
Landfill	7,370	6,670	6,030	5,800	4,180	-43%
Rail	4,350	4,480	4,410	4,520	4,440	2%
Water and wastewater	2,520	2,380	2,220	1,810	1,670	-34%
Land use and sequestration	-1050	-1,050	-1,050	-1,040	-1040	-1%
Total	666,410	651,450	592,010	533,730	520,410	-22%
Informational Item						
Point sources	7,390	7,390	11,610	14,230	18,090	145%

Note: Due to rounding, totals may not equal the sum of the component parts.

Greenhouse Gas Inventories, Forecasts, and Reduction Targets

Table 5: San Mateo 2005and 2019 Community Emissions (Per-Capita)

	2005	2019
$MTCO_2e$ per-capita	7.14	4.98

Greenhouse Gas Emissions Forecast

A forecast of future GHG emissions helps to ensure consistency with the guidelines for a Qualified GHG Reduction Strategy put forward by BAAQMD, as described in **Chapter 1**. A forecast allows elected officials, City staff, and community members to identify the amount of reductions necessary in order to achieve future GHG reduction targets and can help support long-range community planning efforts. The CAP update includes a forecast for the calendar years 2030 2040, and 2045.

A GHG emissions forecast estimates how emissions would grow over time if no action is taken at the federal, State, or local level to reduce them. A set of indicators determines the extent of growth that could occur and how resulting emissions may change. An emissions forecast was prepared for San Mateo using the best available information regarding indicators and growth rates. The forecast relies on growth assumptions from the buildout projections in the Strive San Mateo General Plan 2040. Activity data rates in the forecast, such as household energy use, vehicle miles travelled, or per person waste disposal, are based on the 2019 emissions inventory.

Table 6 presents data from 2019 and projections for the years 2030, 2040, and 2045.

Table 6: San Mateo 2019, 2030, 2040, and 2045 Growth Indicators

Indicator	2019 Value	2030 Value	2040 Value	2045 Value	Percentage Change, 2019–2045
Population	104,599	129,210	156,585	172,370	65%
Households	39,771	49,260	59,843	65,960	66%
Jobs	61,232	69,400	77,760	82,310	34%
Service population[1]	165,831	198,610	234,345	254,680	54%

[1] *Service population is the sum of the residential population and the number of jobs.*

CHAPTER 2

Each indicator is used to project future emissions for the following sectors:

- Population: off-road equipment (lawn and garden equipment, pleasure crafts, portable equipment, and recreational equipment).
- Households: Residential built environment.
- Jobs: Commercial/industrial built environment, off-road equipment (industrial equipment and light commercial equipment).
- Service population: On-road transportation, rail (Caltrain), off-road equipment (construction and mining equipment, transportation refrigeration units), solid waste generation, water and wastewater.

Emissions from direct access electricity, point sources, and freight trains are held constant, and are not projected to change over time. Construction and mining emissions, part of the off-road equipment sector, are forecasted by the change in service population. Landfill emissions are based on decomposition rates provided by CARB and are not forecasted by an indicator. Land use and sequestration emissions are based on the acreage of forested land, developed land, and urban areas, as projected by the Strive San Mateo General Plan 2040.

The project team applied these indicators to forecast future GHG emissions. Relative to 2019 emissions, San Mateo's GHG emissions are expected to rise by more than 44 percent by 2045 if no action is taken. The forecast assumes that each person in San Mateo will continue to contribute the same amount of GHGs to the community's total, so that the amount of GHGs increase as the demographics of the community change. **Tables 7** and **8** show San Mateo's forecasted community-wide GHG emissions

Greenhouse Gas Inventories, Forecasts, and Reduction Targets

Table 7: San Mateo Community-Wide BAU GHG Emissions Sector Totals (Absolute)

Sector	2019 ($MTCO_2e$)	2030 ($MTCO_2e$)	2040 ($MTCO_2e$)	2045 ($MTCO_2e$)	Percentage Change, 2019–2045
On-road transportation	276,560	308,930	351,730	375,310	36%
Commercial/industrial built environment	83,660	93,710	104,010	109,610	31%
Residential built environment	114,630	141,960	172,460	190,110	66%
Off-road equipment	14,400	23,770	26,620	30,360	111%
Solid waste generation	21,910	26,240	30,960	33,650	54%
Landfill	4,180	4,470	3,660	3,310	-21%
Rail	4,440	5,220	6,080	6,560	48%
Water and wastewater	1,670	1,990	2,340	2,540	53%
Land use and sequestration	-1,040	-1,050	-1,050	-1,050	0%
Total	**520,400**	**605,240**	**696,810**	**750,400**	**44%**
Percentage Change from 2005	-22%	-9%	5%	13%	
Informational Item					
Point sources	18,090	18,090	18,090	18,090	0%

Note: Due to rounding, totals may not equal the sum of the component parts.

CHAPTER 2

GHG EMISSIONS REDUCTION TARGETS

The California Environmental Quality Act (CEQA) Guidelines Section 15183.5(b) requires that a Qualified GHG Reduction Strategy contain a goal for substantive GHG reductions, although the guidelines do not set a specific level for what these goals should be. In the Climate Change Scoping Plan (Scoping Plan), the State provides its statewide GHG reduction targets and guidance for local communities. The CAP uses 2005 as a baseline year for measuring progress towards emission targets. In the 2015 CAP, the City adopted a GHG reduction target of 15 percent below the baseline 2005 GHG emission levels by 2020. The City chose this reduction target to remain consistent with the state-recommended target at the time, which was a reduction of 15 percent below existing levels by 2020, which is the local equivalent of the state's own adopted reduction target of reducing emissions to 1990 levels. Although "existing emission levels" was not formally defined by the Scoping Plan, agencies throughout California have often interpreted it as referring to emissions occurring between 2005 and 2008. San Mateo's GHG reduction strategies have used 2005 emissions as the "existing" levels and the State targets to inform the 2030 and 2045 targets listed below.

These statewide targets are:

- 2030: Reduce emissions 40 percent below 1990 levels, codified into law by SB 32 (2016)
- 2045: Reduce emissions 85 percent below 1990 levels and achieve carbon neutrality, codified into law by AB 1279 (2022).

Based on the results of the quantification process to identify the GHG reduction potential from the 2020 CAP (see Chapter 3), the City determined that the statewide targets for 2030 and 2045 were appropriate for San Mateo. To ensure that the CAP can continue to serve as a Qualified GHG Reduction Strategy, San Mateo has set its 2030 and 2045 targets to align with the State's targets. In the quantification of the CAP measures, 2040 is used as an interim benchmark as it aligns with the horizon of Strive San Mateo General Plan 2040 and tracks progress towards the 2045 target. These targets are meant to serve as ceilings for future GHG emissions. As discussed in the following chapter, the City has the potential to achieve greater GHG reductions, decreasing emissions below these levels.

Previous versions of the Scoping Plan have recommended per-capita targets for community-wide plans, such as a CAP. The 2020 CAP used per-capita targets as recommended by the most recently adopted version of the Scoping Plan at the time it was written. With the adoption of AB 1279 and the 2022 Scoping Plan, State guidance recommends that local governments use "absolute" GHG reduction targets consistent with statewide GHG reduction goals. This version of the CAP uses absolute GHG reduction targets.

Greenhouse Gas Inventories, Forecasts, and Reduction Targets

Qualified GHG Reduction Strategies

These revised targets help ensure that the 2020 CAP will continue to serve as San Mateo's Qualified GHG Reduction Strategy, which allows developments that are consistent with the CAP to streamline their environmental review. As noted in Chapter 1, the requirements for a Qualified GHG Reduction Strategy are:

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

Chapter 3

Strategies to Achieve the Targets

To understand the level of action necessary to achieve the City's reduction targets this updated CAP analyzes existing, planned, and future actions. By first looking at these accomplishments, the City can understand progress achieved and outstanding opportunities. Existing and current efforts provide a foundation for this CAP. New measures can further close the gap and guide future programs. Together, these efforts serve as the City's multipronged strategy to achieve reduction targets.

Table 8 shows the GHG emission levels that are expected to result when this CAP is fully implemented, based on the results of the analyses in this chapter, along with the GHG reduction targets.

Table 8: San Mateo Emissions with 2020 CAP Implementation (2030 – 2045)

	2030	2045
Projected Emission level	311,990 $MTCO_2e$	80,550 $MTCO_2e$
Target	339,880 $MTCO_2e$	84,970 $MTCO_2e$
Target achieved?	Yes	Yes
Gap to target	-27,890 $MTCO_2e$	-4,420 $MTCO_2e$

The CAP achieves these reductions by accounting for the GHG reductions from existing and planned State, regional, and local activities, along with the reduction measures in the CAP itself. **Table 9** shows the reduction levels achieved by the individual measures in the CAP. More details about the measures and all other reductions are given below.

CHAPTER 3

Table 9: Reductions from CAP Measures (2030 – 2045)

Measure	2030	2040	2045
BE 1: All-electric new construction	-21,070	-38,450	-47,250
BE 2: All-electric existing buildings	-102,210	-184,610	-221,260
RE 1: Peninsula Clean Energy	-160	-170	0
RE 2: Renewable energy systems for new and existing residences	-70	-160	0
RE 3: Renewable energy systems for new and existing nonresidential buildings	-60	-90	0
EE 1: Residential energy efficiency retrofits	-6,160	-7,020	-6,790
EE 2: Nonresidential energy efficiency retrofits	-3,800	-8,860	-13,380
EE 3: Residential tree planting	Less than -10	Less than -10	Less than-10
ME 1: Energy efficiency for new municipal buildings	Supportive (no measurable GHG reductions)		
ME 2: Energy efficiency at existing municipal buildings	-10	-30	-40
ME 3: All-electric municipal buildings	-130	-200	-270
CF 1: Electric vehicle charging infrastructure	-24,420	-49,390	-69,780
CF 2: Electric vehicle education and outreach	-4,910	-8,030	-12,360
CF 3: Clean city fleet	-130	-200	-270
CF 4: Clean fuel and vehicle emissions	-4,210	-16,920	-26,360
ST 1: Bicycle mode share	-80	-170	-180
ST 2: Pedestrian mode share	-110	-120	-130
ST 3: Micromobility and shared mobility	Supportive (no measurable GHG reductions)		
ST 4: Public transit service	-3,610	-5,660	-6,910
ST 5: Commuter programs	Less than -10	-70	-160
ST 6: Transportation Demand Management	-2,010	-7,950	-13,410
ST 7: Transit-oriented development	-10,200	-18,920	-23,700
SW 1: Composting program	-1,030	-1,710	-1,850

Measure	2030	2040	2045
SW 2: Expanded recycling service	-6,070	-7,730	-8,820
SW 3: Waste awareness and source reduction	-2,080	-4,050	-5,590
WW 1: Water efficiency retrofits for existing buildings	-170	-300	-360
WW 2: Water-efficient landscaping	Less than -10	-10	0
WW 3: Water efficiency in new construction	Less than -10	-10	-20
OR 1: Alternative fuel lawn and garden equipment	-3,660	-7,130	-9,890
Total	**-196,360**	**-367,960**	**-468,780**

Note: Due to rounding, totals may not equal the sum of the component parts.

Existing and Planned Accomplishments

Both State and local efforts have achieved additional progress toward the reduction target, reducing the outstanding gap of emissions to achieve the City's reduction targets described in the previous chapter.

As mentioned in Chapter 2, the GHG emissions forecast is based on the results of the 2019 inventory and assumes that per-capita activity remains constant, so that changes in projected emissions are based on expected changes in San Mateo's demographics. This approach means that any action taken through 2019 to reduce GHG emissions is already taken into consideration for the forecast. For example, if homes installed solar energy systems in 2018, the effect of that action (lower residential electricity use) will already show up in the 2019 inventory, and by extension will be carried through into the forecast.

State Existing and Planned Accomplishments

Since passing AB 32, the State has enacted regulations and programs to reduce GHG emissions. Although statewide in scope, these actions affect several sources of San Mateo's emissions, and so the local benefits of these State efforts can be "credited" to San Mateo even in cases where the community has not needed to take any action. This CAP includes the local benefits from five State policies:

- **Renewables Portfolio Standard:** The Renewables Portfolio Standard (RPS) was first established in 2002 and has been amended multiple times, most recently by SB 100 in 2018. It requires all electricity providers in the State to obtain at least 33% of their electricity from eligible renewable resources by the end of 2020, 60% of their electricity from eligible renewable resources by the end of 2030, and all of their electricity from carbon-free (although not necessarily eligible renewable) resources by the end of 2045.

Table 10: San Mateo Community-Wide GHG Emissions Reductions from State Programs

Policy	2030 Emissions ($MTCO_2e$)	2040 Emissions ($MTCO_2e$)	2045 Emissions ($MTCO_2e$)
Forecasted emissions	605,240	696,810	750,400
Clean Car Standards	-55,030	-95,730	-109,680
Renewables Portfolio Standard	-4,720	-15,330	-39,860
Title 24	-9,380	-32,480	-41,790
SB 1383	-3,760	-4,430	-4,820
Total reductions from existing State programs	-72,890	-147,970	-196,150
Emissions with existing State programs	**532,340**	**548,840**	**554,260**

Note: Due to rounding, totals may not equal the sum of the component parts.

There are other programs that reduce GHG emissions that State agencies have adopted or are planning to put into effect. These are not included in this section because of uncertainty about how these programs will be applied. In many cases, State programs may be implemented by local actions, and reductions associated with these programs are included in the local reduction measures discussed later in this chapter.

Existing and Planned Local and Regional Accomplishments

The City of San Mateo has a successful history of developing and implementing sustainability policies. The City's adopted plans, along with leadership from community members and businesses have been partially responsible for the decline in GHG emissions since 2005. Several policies are currently in place that are expected to further reduce San Mateo's GHG emissions. Some of these accomplishments were established before the City adopted its first CAP in 2015, while others were implemented in response to the 2015 CAP.

Collectively, San Mateo's existing and planned local and regional accomplishments are expected to reduce emissions by 23,990 $MTCO_2e$ in 2030, 18,360 $MTCO_2e$ in 2040, and 4,950 $MTCO_2e$ in 2045, in addition to the reductions achieved by State accomplishments. **Table 11** shows the reductions from each local and regional accomplishment.

Table 11: Emissions Reductions from Local and Regional Programs

Policy	2030 GHG Emissions ($MTCO_2e$)	2040 GHG Emissions ($MTCO_2e$)	2045 GHG Emissions ($MTCO_2e$)
Emissions with Existing State Programs	**532,340**	**548,840**	**554,260**
Peninsula Clean Energy	-20,000	-13,750	0
Energy efficiency retrofits	-30	-30	-30
Solar energy installations	-20	-10	0
Municipal energy retrofits	-160	-160	-160
Public access EV chargers	0	0	0
Transportation Demand Management	-220	-200	-190
Caltrain electrification (planned)	-3,560	-4,200	-4,560
Total reductions from existing and planned local and regional programs	-23,990	-18,330	-4,940
Emissions with existing and planned local and regional programs	**508,380**	**530,510**	**549,320**

Note: Due to rounding, totals may not equal the sum of the component parts.

Existing and planned local, regional, and State accomplishments reduce San Mateo's forecasted GHG emissions by a significant amount. **Table 12** shows the benefit of these accomplishments relative to San Mateo's baseline.

Table 12: Emissions with Existing and Planned Efforts

Policy	2030	2040	2045
2005 (baseline) emissions ($MTCO_2e$)	666,430	666,430	666,430
Emissions with existing and planned programs ($MTCO_2e$)	508,380	530,510	549,320
Percent below baseline emissions	-24%	-20%	-18%

City of San Mateo
Climate Action Plan

Appendix 1:

Technical Appendix: Methods and Assumptions

GHG Reduction Measure Quantification

This appendix summarizes data sources, assumptions, and performance metrics used to calculate greenhouse gas emissions reductions for the City of San Mateo Climate Action Plan. The sources and metrics are organized by measure and rely on four primary types of data and research: (1) San Mateo's GHG emissions inventory and forecast, (2) government agency tools and reports, (3) case studies in similar jurisdictions, and (4) scholarly research.

Further, the quantification approaches are consistent with guidance provided by the Bay Area Air Quality Management District (BAAQMD) for development of a Qualified GHG Reduction Strategy. The baseline GHG inventory and forecast serve as the foundation for the quantification of the City's GHG reduction measures. Activity data from the inventory form the basis of measure quantification, including vehicle miles traveled (VMT), kilowatt-hours (kWh) of electricity or therms of natural gas consumed, and tons of waste disposed. Activity data were combined with the performance targets and indicators identified by the City and consultants. The activity data and performance targets and indicators were used throughout the quantification process to calculate the

APPENDIX 1

emissions reduction benefit of each measure. This approach ensures that San Mateo's GHG emissions reductions are tied to the baseline and to future activities occurring within the City.

Emissions Factors

Table 1-1 lists the emissions factors used to quantify emissions reductions in the CAP. These emission factors reflect the GHG reductions from existing and planned accomplishments, as well as PCE, to the extent feasible. They do not reflect the average emission factors with full implementation of this CAP.

Table 1-1: Emissions Coefficients for CAP Measures

Source	2005	2019	2030	2040	2045	Source
$MTCO_2e$ per mile driven (with Pavley)	0.000464	0.000392	0.000312	0.000277	0.000269	EMFAC 2021
$MTCO_2e$ per Caltrain passenger mile	0.004371	0.002506	0.000629	0.000627	0.000626	Caltrain, US Community Protocol
$MTCO_2e$ per kWh (PCE)	-	0.000045	0.000000	0.000000	0.000000	PCE, US EPA
$MTCO_2e$ per kWh (PG&E)	0.000223	0.000002	0.000002	0.000001	0.000000	PG&E, US EPA
$MTCO_2e$ per kWh (direct access)	0.000057	0.000212	0.000152	0.000095	0.000000	CEC, US EPA
$MTCO_2e$ per kWh (weighted community average)	0.000160	0.000054	0.000010	0.000006	0.000000	PCE, PG&E, CEC, US EPA
$MTCO_2e$ per therm	0.005292	0.005319	0.005319	0.005319	0.005319	US Community Protocol
$MTCO_2e$ per ton of waste	0.207521	0.253266	0.236134	0.236134	0. 236134	CARB Landfill Emissions Tool v1.3

These emissions coefficients were calculated as follows, using data from the GHG inventory and forecast:

- **$MTCO_2e$ per mile driven:** Divide the emissions from on-road transportation by the number of on-road vehicle miles traveled.

- **$MTCO_2e$ per passenger mile**: For Caltrain, divide the emissions from Caltrain activities related to San Mateo by the number of passenger miles attributed to San Mateo.
- **$MTCO_2e$ per kWh:** Divide the sum of the emissions for residential and commercial electricity use by the sum of the kWh for these two sources, for each electricity provider.
- **$MTCO_2e$ per therm:** Divide the sum of the emissions from residential and commercial natural gas by the sum of the therms used by these two sources.
- **$MTCO_2e$ per ton of waste:** Divide the sum of the emissions from landfilled waste and waste in place by the sum of the tons of waste in these sources.

TECHNICAL DATA FOR EXISTING AND PLANNED LOCAL AND REGIONAL ACTIVITIES

Data sources, methods, and assumptions for the quantification of the existing and planned local and regional activities are provided below. Note that some existing and planned local activities may not have assumptions and/or performance metrics. The GHG reductions shown for existing and planned local and regional activities are only in addition to any reductions achieved by existing or planned State efforts.

Peninsula Clean Energy

GHG Reduction

	2030	2040	2045
Emissions reduction ($MTCO_2e$)	20,000	13,750	0

Performance Indicators

	2030	2040	2045
Electricity supplied by PCE (kWh)	495,153,490	487,569,650	501,096,050
PCE electricity supplied to ECO100 customers (kWh)	27,614,500	27,614,500	27,614,500

GHG Method

For overall electricity supplied by PCE, the project team identified the current fraction of community electricity supplied by PCE and applied this ratio to future projections of electricity use. The team subtracted the amount of PCE-supplied electricity in 2020 from this future projection to obtain the increase in PCE electricity supplies,

then multiplied this value by an emissions factor that reflects PCE's future energy procurement plans. For ECO100, the project team identified how much electricity is served to ECO100 and applied an emissions factor that reflects the community's weighted average of electricity sources to determine the overall amount of averted emissions.

GHG Sources

California Energy Commission. 2023. *2019 Power Content Label: Peninsula Clean Energy*. https://www.energy.ca.gov/filebrowser/download/3244.

Doubrovskaia, M. 2023. Peninsula Clean Energy. Personal communication to A. Chow, City of San Mateo. April 19.

Technical Appendix: Methods and Assumptions

Energy-efficiency retrofits

Activity and GHG Reductions

	2030	2040	2045
Electricity savings (kWh)	136,470	136,470	136,470
Natural gas savings (therms)	5,910	5,910	5,910
Emissions reduction ($MTCO_2e$)	30	30	30

GHG Method

The project team collected data on the savings from energy efficiency retrofits, as reported by the San Mateo County Energy Watch and BayREN. The team then multiplied these values by the appropriate emissions factor in order to calculate GHG reductions.

GHG Sources

City of San Mateo. 2021. *Climate Action Plan Progress Report*. https://sanmateo.primegov.com/Portal/viewer?id=4766&type=2

APPENDIX 1

Solar energy installation

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	5,695,620	5,695,620	5,695,620
Emissions reduction ($MTCO_2e$)	20	10	0

GHG Method

The project team obtained data on the number and generation potential of new solar energy installations in San Mateo. The team then used a National Renewables Energy Laboratory tool to determine how much electricity can be produced in San Mateo, on average, per kilowatt of generation potential, and calculated the total electricity generated annually from these installations. The project team applied a weighted average community electricity emissions factor to this total to determine GHG reductions.

GHG Sources

California Solar Initiative. 2023. "California Distributed Generation Statistics." https://www.californiadgstats.ca.gov/downloads/

City of San Mateo. 2022. *Climate Action Plan Progress Report*. https://sanmateo.primegov.com/Portal/viewer?id=6472&type=2

National Renewable Energy Laboratory. n.d. "PVWatts Calculator." https://pvwatts.nrel.gov/.

Municipal energy-efficiency retrofits

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	1,831,170	1,831,170	1,831,170
Natural gas savings (therms)	22,870	22,870	22,870
Emissions reduction ($MTCO_2e$)	160	160	160

GHG Method

The project team reviewed the results of the energy efficiency analysis provided by PG&E, which identifies anticipated electricity and natural gas savings from implementing the SST retrofits. The team applied the appropriate electricity and natural gas emissions factor to determine the overall GHG reduction.

GHG Sources

City of San Mateo. 2021. *Climate Action Plan Progress Report*. https://sanmateo.primegov.com/Portal/viewer?id=4766&type=2

APPENDIX 1

Public-access EV chargers

GHG Reduction

	2030	2040	2045
Emissions reduction ($MTCO_2e$)	Less than 10	Less than 10	Less than 10

Performance Indicators

	2030	2040	2045
Net increase in EV VMT	258,720	258,720	258,720
Net increase in electricity use (kWh)	87,960	87,960	87,960

GHG Method

The project team collected information on the number of public EV chargers in San Mateo and used factors about the average charging use of public EV chargers to estimate how many VMT of EV use the public chargers in the community support annually. The project team then estimated the electricity use from these EV chargers. Next, the team applied the appropriate emissions factors to the VMT and electricity use figures and took the difference between the two as the net reduction in GHG emissions.

GHG Sources

Chow, A. 2023. City of San Mateo. Personal communication to E. Krispi, PlaceWorks. April 14.

ICLEI – Local Governments for Sustainability. n.d. Climate and Air Pollution Planning Assistant v 1.5.

US Environmental Protection Agency. n.d. "Interactive Version of the Electric Vehicle Label." https://www.epa.gov/fueleconomy/interactive-version-electric-vehicle-label.

Transportation Demand Management

Activity and GHG Reduction

	2030	2040	2045
Transportation savings (VMT)	725,620	700,370	687,710
Emissions reduction ($MTCO_2e$)	190	170	160

GHG Method

The project team obtained information from the San Mateo Rail Corridor Area Transportation Management Agency to identify the mandatory reductions in trip generation as a result of existing and under-construction developments subject to TDM provisions and combined this information with results from the inventory and forecast to estimate the decrease in VMT resulting from TDM. The project team applied the community-wide VMT emissions coefficient to this figure to determine the GHG reductions.

GHG Sources

Lim, L. 2019. City of San Mateo. Personal communication to A. Chow, City of San Mateo. January 3.

APPENDIX 1

Additional Bicycle Lanes

Activity and GHG Reduction

	2030	2040	2045
VMT savings	97,990	111,570	119,050
Emissions reduction ($MTCO_2e$)	30	30	30

Performance Indicators

	2030	2040	2045
Additional bicycle lanes (miles)	6.4	6.4	6.4

GHG Method

The project team reviewed the Bicycle Master Plan showing the increase in bicycle lanes planned for 2020 along with the number of bicycle lanes that have been constructed since the 2019 inventory. The team used this information and the proposed methodology from the California Air Pollution Control Officers Association to calculate the percentage increase in VMT associated with an increase in bicycle lanes and applied the VMT emissions factor for personal vehicles to determine the GHG reductions associated with this existing accomplishment.

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

Chow, A. 2023. City of San Mateo. Personal communication to E. Krispi, PlaceWorks. April 14

U.S. Census Bureau. 2023. 2014 – 2019 American Community Survey 5-Year Estimates, B08006: Sex of Workers by Means of Transportation to Work [data table].

Caltrain electrification

Activity and GHG Reduction

	2030	2040	2045
Electricity use increase (kWh)	11,852,700	11,852,700	11,852,700
Emissions reduction ($MTCO_2e$)	3,560	4,200	4,560

GHG Method

The project team reviewed information from the Caltrain electrification project EIR to estimate decreases in diesel use and increases in electricity use from electrification. The team combined these data with information from the inventory to scale these changes in activity data specifically to San Mateo. The team applied the Caltrain emissions factors from the inventory to determine net GHG reductions from electrification.

GHG Sources

Peninsula Corridor Joint Powers Board. 2014. *Peninsula Corridor Electrification Project Draft Environmental Impact Report.* http://www.caltrain.com/projectsplans/CaltrainModernization/Modernization/PeninsulaCorridorElectrificationProject/PCEP_DEIR_2014.html.

APPENDIX 1

TECHNICAL DATA FOR QUANTIFIED MEASURES

Data sources, methods, and assumptions for the quantification of CAP measures are provided below.

BE 1 All-electric new construction

Assumptions

	2030	2040	2045
Cumulative % of residential construction influenced by energy efficiency reach code:	90%	95%	95%
Cumulative % of office commercial construction influenced by energy efficiency reach code:	85%	90%	95%
Cumulative % of non-office commercial construction influenced by energy efficiency reach code:	40%	60%	90%
Cumulative % new non-residential buildings that are office space:	59%	64%	64%

Activity and GHG reductions

	2030	2040	2045
Electricity savings (kWh)	-8,588,290	-15,674,440	-19,303,790
Natural gas savings (therms)	3,099,740	5,653,260	6,936,870
Emissions reduction ($MTCO_2e$)	21,070	38,450	47,250

TECHNICAL APPENDIX: METHODS AND ASSUMPTIONS

Performance indicators

	2030	2040	2045
Number of all-electric new construction residential housing units	8,280 new construction residential housing units built all-electric.	19,360 new construction residential housing units built all-electric.	25,500 new construction residential housing units built all-electric.
Square feet of all-electric new construction non-residential buildings	837,280 square feet of new construction non-residential buildings built all-electric.	2,264,130 square feet of new construction non-residential buildings built all-electric.	3,424,010 square feet of new construction non-residential buildings built all-electric.

GHG Method

The project team obtained data from Strive San Mateo General Plan 2040 Land Use Element on projected buildout of nonresidential buildings in San Mateo and data from Association of Bay Area Governments (ABAG) Plan Bay Area on projected buildout of households in San Mateo out to 2045, and used these data to estimate the number of new buildings that would be impacted by an all-electric new construction reach code. The team identified the average amount of natural gas used per household are per nonresidential square foot and data on the equivalent amount of electricity that would be required in an all-electric version of similar buildings, and applied this information to the projected number of new buildings built in order to estimate the projected reduction in natural gas consumption and the projected increase in electricity consumption resulting from the policy. The team then applied the emission factor for avoided natural gas consumption to estimate the emissions reduction associated with reduced natural gas consumption, and the emission factor for electricity use to estimate the emissions increase associated with increased electricity consumption. The net resulting emissions is the estimated emissions avoided from the policy.

GHG Sources

California Energy Commission. 2006. "California Commercial End-Use Survey." https://ww2.energy.ca.gov/ceus/2006_enduse.html

California Energy Commission. 2009. "2009 California Residential Appliance Saturation Study." https://ww2.energy.ca.gov/appliances/rass/previous_rass.html

APPENDIX 1

BE 2 All-electric existing buildings

Assumptions

	2030	2040	2045
Cumulative percent of commercial buildings that are office space	59%	64%	64%
Cumulative percent of residential gas equipment reaching end of life replaced with electric due to panel incentive	35%	40%	50%
Cumulative percent of residential electrical panel upgrades resulting in EV purchase	50%	35%	20%
Cumulative percent of office gas equipment reaching end of life replaced with electric due to panel incentive	70%	75%	90%
Cumulative percent of office electrical panel upgrades resulting in EV charging installation	40%	30%	20%
Cumulative percent of EV purchases replacing gasoline vehicle	98%	97%	96%
Cumulative percent of EV purchases replacing diesel vehicle	3%	3%	4%

Activity and GHG reductions

	2030	2040	2045
Electricity savings (kWh)	-80,105,780	-125,747,100	-133,624,540
Natural gas savings (therms)	5,002,490	11,459,340	17,775,000
Emissions reduction ($MTCO_2e$)	102,210	184,610	221,260

Performance indicators

	2030	2040	2045
Existing residential gas to electric HVAC conversions	9,890 existing residential gas HVAC systems replaced with electric HVAC systems.	22,620 existing residential gas HVAC systems replaced with electric HVAC systems.	35,340 existing residential gas HVAC systems replaced with electric HVAC systems.
Existing residential gas to electric water heating conversions	14,840 existing residential gas water heaters replaced with electric HVAC systems.	33,920 existing residential gas water heaters replaced with electric HVAC systems.	53,000 existing residential gas water heaters replaced with electric HVAC systems.
Existing residential gas to electric clothes drying conversions	7,420 existing residential gas clothes dryers replaced with electric clothes dryers.	16,960 existing residential gas clothes dryers replaced with electric clothes dryers.	26,500 existing residential gas clothes dryers replaced with electric clothes dryers.
Existing residential gas to electric cooking conversions	5,940 existing residential gas ranges and ovens replaced with electric ranges and ovens.	13,570 existing residential gas ranges and ovens replaced with electric ranges and ovens.	21,200 existing residential gas ranges and ovens replaced with electric ranges and ovens.
Existing residential electrical panel upgrades	19,050 existing residential electrical panels upgraded.	43,530 existing residential electrical panels upgraded.	68,020 existing residential electrical panels upgraded.
Square feet of existing offices receiving gas to electric HVAC conversions	5,523,120 square feet of existing office buildings replace existing gas HVAC systems with electric HVAC systems.	12,778,100 square feet of existing office buildings replace existing gas HVAC systems with electric HVAC systems.	19,167,150 square feet of existing office buildings replace existing gas HVAC systems with electric HVAC systems.
Square feet of existing offices receiving gas to electric water heating conversions	8,284,680 square feet of existing office buildings replace existing gas water heaters with electric water heaters.	19,167,150 square feet of existing office buildings replace existing gas water heaters with electric water heaters.	28,750,730 square feet of existing office buildings replace existing gas water heaters with electric water heaters.

APPENDIX 1

	2030	2040	2045
Square feet of existing offices receiving gas to electric cooking conversions	6,627,740 square feet of existing office buildings replace existing gas ranges and ovens with electric ranges and ovens.	15,333,720 square feet of existing office buildings replace existing gas ranges and ovens with electric ranges and ovens.	23,000,580 square feet of existing office buildings replace existing gas ranges and ovens with electric ranges and ovens.
Square feet of existing offices receiving electrical panel upgrades	10,217,770 square feet of existing office buildings electrical panels upgraded.	23,639,490 square feet of existing office buildings electrical panels upgraded.	35,459,230 square feet of existing office buildings electrical panels upgraded.
Number of electric vehicles purchased/leased to replace internal combustion engine (ICE) vehicles	16,750 electric vehicles purchased or leased by residents or commuters to replace internal combustion engine vehicles.	27,780 electric vehicles purchased or leased by residents or commuters to replace internal combustion engine vehicles.	26,150 electric vehicles purchased or leased by residents or commuters to replace internal combustion engine vehicles.
Existing office parking spaces with EV charging:	8,170 EV charging ports installed at existing office buildings.	14,180 EV charging ports installed at existing office buildings.	14,180 EV charging ports installed at existing office buildings.
Existing residential parking spaces with EV charging:	9,520 EV charging ports installed at existing residential buildings.	15,240 EV charging ports installed at existing residential buildings.	13,600 EV charging ports installed at existing residential buildings.

GHG Method

The project team used data from Strive San Mateo General Plan 2040 Land Use Element on projected buildout of residential and nonresidential buildings in San Mateo and data from Association of Bay Area Governments (ABAG) Plan Bay Area on projected buildout of households in San Mateo out to 2045 to estimate the number of existing buildings that would be impacted by a policy aimed at providing incentives to encourage residents and businesses to upgrade electric panels and adopt all-electric technologies. The team identified the percent of natural gas equipment (e.g., water heaters) that would be replaced at end of life if this policy existed, using the average life of natural gas equipment to estimate the number of each type of equipment type that would be replaced per year. Next, the project team consulted reports on the average amount of natural gas consumed by each type of equipment to estimate the natural gas consumption avoided through electrification of natural gas

equipment. The team used data on energy factors by equipment type to estimate the resulting increase in electricity use resulting from the replacement of natural gas equipment with electric equipment. The team also identified performance indicators for the percent of EV chargers that would be installed as a result of this policy and the resulting number of EVs that would be purchased due to accessibility of charging. The team used data on the average VMT by a passenger vehicle, average efficiency of gasoline vehicles, average efficiency of diesel vehicles, and average efficiency of electric vehicles to estimate the resulting gasoline and diesel consumption avoided and increase in electricity use resulting from the replacement of gasoline and diesel vehicles with electric vehicles. Last, the team applied the appropriate emission factors for natural gas consumption, electricity use, gasoline consumption, and diesel consumption to estimate the emissions reduction associated with a reduction in natural gas consumption, gasoline consumption, and diesel consumption and the increase in emissions associated with an increase in electricity consumption. The net resulting emissions is the estimated emissions avoided from the policy.

GHG Sources

California Energy Commission. 2006. "California Commercial End-Use Survey." https://ww2.energy.ca.gov/ceus/2006_enduse.html

California Energy Commission. 2009. "2009 California Residential Appliance Saturation Study." https://ww2.energy.ca.gov/appliances/rass/previous_rass.html

RSMeans. 2019 RSMeans Online, 2019 [software package].

ASHRAE, 2017. "ASHRAE Technical FAQ". https://www.ashrae.org/technical-resources/technical-faqs.

US Department of Energy. 2019. www.fueleconomy.gov. https://www.fueleconomy.gov/.

California Air Resources Board. 2022. "EMFAC2021 Web Database". https://arb.ca.gov/emfac/.

National Renewable Energy Laboratory. 2018. "CEC EV Infrastructure Projection Tool (EVI-Pro)." https://afdc.energy.gov/evi-pro-lite.

APPENDIX 1

RE I Peninsula Clean Energy

GHG Assumptions

	2030	2040	2045
Percent of residents enrolling in PCE	98%	99%	99.5%
Percent of businesses enrolling in PCE	98%	99%	99.5%
Percent of direct access customers switching to PCE	2%	4%	5%

GHG Reductions

	2030	2040	2045
Emissions reduction ($MTCO_2e$)	160	170	0

Performance Indicators

	2030	2040	2045
PCE opt-out rate	1.0%	1.0%	0.5%
kWh supplied by ECO 100	32,959,210	43,792,410	55,425,750

GHG Method

The project team identified the amount of electricity from San Mateo customers projected to switch from PG&E to PCE service, and PCE customers upgrading to ECO100. The team next applied the difference in PG&E and PCE emissions factors for both regular and ECO100 service to identify the decrease in GHG emissions.

GHG Sources

California Energy Commission. 2018. *2017 Power Content Label: Peninsula Clean Energy*. https://ww2.energy.ca.gov/pcl/labels/2017_labels/PCE_2017_PCL.pdf.

City of San Mateo. 2020. *2020 Climate Action Plan Annual Progress Report*. https://www.cityofsanmateo.org/3962/CAP-Progress-Updates.

TECHNICAL APPENDIX: METHODS AND ASSUMPTIONS

RE 2 Renewable energy systems for new and existing residences

GHG Assumptions

	2030	2040	2045
Percent of existing homes installing solar energy systems	15%	25%	30%
Percent of existing homes with solar energy systems installing battery storage systems	20%	35%	50%
Percent of new homes installing battery storage systems	25%	40%	60%

GHG Reduction

	2030	2040	2045
Emissions reduction ($MTCO_2e$)	70	160	0

Performance Indicators

	2030	2040	2045
Number of homes built before 2018 with solar panels	4,960	8,540	10,530
Number of total homes (existing and new) with battery energy systems	1,500	12,040	22,710

GHG Method

For solar energy systems, the project team identified the number of existing homes in San Mateo that could be projected to have a solar energy system. Using data from the National Renewable Energy Laboratory, the team identified how much electricity these solar energy systems could generate annually and applied the community-wide electricity factor to identify electricity savings. For battery systems, the team identified the number of new and existing homes installing solar energy systems and determined the number of these homes that could install a battery energy system. Assuming that battery systems fully charge and discharge once a day, the team identified how much additional renewable energy storage capacity would be enabled by the batteries. The project team then again applied the community-wide electricity factor to identify electricity savings.

GHG Sources

National Renewable Energy Laboratory. n.d. "PVWatts Calculator." https://pvwatts.nrel.gov/.

APPENDIX 1

Regional Climate Action Planning Suite. 2019. RICAPS Menu of Measures version 4.1 [data table].

RE 3 Renewable energy systems for new and existing nonresidential buildings

GHG Assumptions

	2030	2040	2045
Percent of existing businesses installing solar energy systems	6%	10%	15%
Percent of existing businesses with solar energy systems installing battery storage systems	15%	25%	40%

GHG reductions

	2030	2040	2045
Emissions reduction ($MTCO_2e$)	60	90	0

Performance indicators

	2030	2040	2045
Number of businesses built before 2018 with solar panels	180	340	550
Number of existing businesses with battery energy systems	40	100	240

GHG Method

The project team identified the number of existing businesses in San Mateo that could be projected to have a solar energy system. Using data from the National Renewable Energy Laboratory, the team identified how much electricity these solar energy systems could generate annually and applied the community-wide electricity factor to identify electricity savings. Next, the team identified the number of existing businesses installing solar energy systems and determined the number of these businesses that could install a battery energy system. Assuming that battery systems fully charge and discharge once a day, the team identified how much additional renewable energy storage capacity would be enabled by the batteries. The project team then again applied the community-wide electricity factor to identify electricity savings.

Technical Appendix: Methods and Assumptions

GHG Sources

National Renewable Energy Laboratory. n.d. "PVWatts Calculator." https://pvwatts.nrel.gov/.

Regional Climate Action Planning Suite. 2019. RICAPS Menu of Measures version 4.1 [data table].

EE 1 Residential energy efficiency retrofits

Assumptions

	2030	2040	2045
Percent of existing homes conducting standard retrofits (not including fuel-switched homes)	15%	18%	20%
Percent of existing homes retrofitting to current Title 24 standards (not including fuel-switched homes)	20%	25%	30%

Activity and GHG reductions

	2030	2040	2045
Electricity savings (kWh)	9,137,050	7,303,020	6,039,130
Natural gas savings (therms)	903,660	1,030,250	996,860
Emissions reduction ($MTCO_2e$)	6,160	7,020	6,790

Performance indicators

	2030	2040	2045
Number of homes retrofitted	2,290 single-family homes and 1,840 multifamily homes undergoing standard retrofits, and 3,060 single-family homes and 2,450 multifamily homes being upgraded to current Title 24 standards	2,540 single-family homes and 2,040 multifamily homes undergoing standard retrofits, and 3,530 single-family homes and 2,830 multifamily homes being upgraded to current Title 24 standards	2,350 single-family homes and 1,890 multifamily homes undergoing standard retrofits, and 3,530 single-family homes and 2,830 multifamily homes being upgraded to current Title 24 standards

APPENDIX 1

GHG Method

The project team looked at reports from retrofit programs throughout California to identify the typical electricity and natural gas savings from single-family and multi-family home retrofits and applied these savings to the energy use patterns of residences in San Mateo. The team next reviewed current and projected future Title 24 standards against the current energy performance of San Mateo homes and projections of future San Mateo Title 24 retrofits to determine the typical electricity and natural gas savings. The team then applied the appropriate emissions factors to the energy savings estimates to determine GHG reductions.

GHG Sources

California Energy Commission. 2014. Impact Evaluation of the California Comprehensive Residential Retrofit Programs.

EE 2 Nonresidential energy efficiency retrofits

Assumptions

	2030	2040	2045
Percent of existing businesses conducting standard retrofits (not including fuel-switched businesses)	25%	35%	10%
Percent of existing businesses retrofitting to current Title 24 standards (not including fuel-switched businesses)	15%	40%	75%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	22,252,780	60,968,630	93,592,880
Natural gas savings (therms)	535,400	1,266,570	1,964,000
Emissions reduction ($MTCO_2e$)	3,800	8,860	13,380

Performance Indicators

	2030	2040	2045
Number of businesses retrofitted	590 businesses undergoing standard retrofits, and 360 businesses upgraded to current Title 24 standards.	740 businesses undergoing standard retrofits, and 840 businesses upgraded to current Title 24 standards.	170 businesses undergoing standard retrofits, and 1,300 businesses upgraded to current Title 24 standards.

GHG Method

The project team looked at reports of the energy savings from different types of nonresidential energy efficiency retrofits to identify the typical electricity and natural gas savings from these activities and applied these savings to the energy use patterns of San Mateo businesses. The team next reviewed current and projected future Title 24 standards against the current energy performance of San Mateo businesses and projections of future San Mateo Title 24 retrofits to determine the typical electricity and natural gas savings. The team then applied the appropriate emissions factors to the energy savings estimates to determine GHG reductions.

APPENDIX 1

GHG Sources

Pacific Northwest National Laboratory. 2011. Advanced Energy Retrofit Guides: Office Buildings. https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-20761.pdf.

Pacific Northwest National Laboratory. 2011. Advanced Energy Retrofit Guides: Retail Buildings. https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-20814.pdf.

EE 3 Residential tree planting

Assumptions

	2030	2040	2045
Percent of households with shade trees	10%	25%	35%

Activity and GHG reduction

	2030	2040	2045
Electricity savings (kWh)	793,560	1,889,740	2,837,540
Emissions reduction ($MTCO_2e$)	Less than 10	Less than 10	0

Performance Indicators

	2030	2040	2045
Number of households with shade trees	4,240	13,130	22,330

GHG Method

The GHG inventory and reports from PG&E were used to identify per business energy use in San Mateo, while data from the Pacific Northwest National Laboratory, the California Energy Commission, and academic studies were used to determine reductions per home. These results were combined with participation rates to calculate total reductions in energy use from this measure. The outcome was then combined with emissions factors from the inventory to determine GHG reductions.

GHG Sources

The project team reviewed studies about the typical electricity savings from reduced air conditioning demand associated with tree planting. The team then applied this information to projections of future participation and the energy use patterns in San Mateo to identify total electricity reduction. Next, the team converted this to GHG emission savings using the appropriate emissions factors.

APPENDIX 1

ME 1 Energy efficiency for new municipal buildings

GHG Assumptions, Reductions, and Performance Indicators

This measure is supportive due to the lack of information about future municipal construction. There are no assumptions, activity or GHG reductions, or performance indicators for supportive measures.

GHG Method

Supportive measures do not produce direct, measurable GHG reductions, so no calculations were made.

GHG Sources

Supportive measures do not produce direct, measurable GHG reductions. There are no sources for GHG reduction calculations for supportive measures.

ME 2 Energy efficiency at existing municipal buildings

Assumptions

	2030	2040	2045
Percent of existing municipal square footage retrofitted	10%	25%	35%

Note that these retrofits go beyond those included as part of the Sustainable Solutions Turnkey program, as those are already accounted for as a planned action.

Activity and GHG Reductions

	2030	2040	2045
Electricity savings (kWh)	67,260	168,140	235,400
Natural gas savings (therms)	1,860	4,640	6,500
Emissions reduction ($MTCO_2e$)	10	30	40

Performance Indicators

	2030	2040	2045
Square footage of retrofitted municipal buildings	9,440	23,610	33,050

GHG Method

The project team looked at the typical energy efficiency savings that can be achieved with retrofits to office buildings and applied this reduction to the projected amount of retrofitted City square footage to calculate the total electricity and natural gas savings. The team then used the appropriate emission factors to identify the GHG reductions from these retrofits.

GHG Sources

City of San Mateo. 2007. *City of San Mateo Greenhouse Gas Emissions Inventory Report*. https://www.cityofsanmateo.org/DocumentCenter/View/5262/APPENDIX-S-October24-2007?bidId=

Pacific Northwest National Laboratory. 2011. Advanced Energy Retrofit Guides: Office Buildings. https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-20761.pdf.

APPENDIX 1

ME 3 All-electric municipal buildings

Assumptions

	2030	2040	2045
Cumulative building area of existing municipal building/s electrified (square feet):	40,000	60,000	80,000
Cumulative number of police stations & fire stations electrified:	0	0	1
Cumulative building area of new municipal building/s electrified (square feet):	40,000	60,000	80,000

Activity and GHG Reductions

	2030	2040	2045
Electricity savings (kWh)	-157,380	-236,070	-314,760
Natural gas savings (therms)	19,760	29,640	39,520
Emissions reduction ($MTCO_2e$)	130	200	270

Performance Indicators

	2030	2040	2045
Square feet of existing municipal building/s electrified:	40,000 square feet of existing municipal buildings retrofitted to all-electric.	60,000 square feet of existing municipal buildings retrofitted to all-electric.	80,000 square feet of existing municipal buildings retrofitted to all-electric.
Number of police stations & fire stations electrified:	0 existing police stations or fire stations retrofitted to all-electric.	0 existing police stations or fire stations retrofitted to all-electric.	1 existing police stations or fire stations retrofitted to all-electric.
Square feet of new municipal building/s electrified:	40,000 square feet of new municipal buildings built all-electric.	60,000 square feet of new municipal buildings built all-electric.	80,000 square feet of new municipal buildings built all-electric.

TECHNICAL APPENDIX: METHODS AND ASSUMPTIONS

GHG Method

The project team to inputs from City staff to project the total square footage of new municipal construction that is built all-electric and existing municipal construction that is retrofitted to be all-electric. The team estimated annual gas use associated with the existing municipal buildings to be retrofitted and the newly constructed municipal buildings (assuming they were built with natural gas equipment), based on energy use intensity information from the California Energy Commission Commercial End-Use Survey. The team used this estimate on "business as usual" natural gas consumption for these buildings to calculate the natural gas consumption avoided from retrofitting to all-electric or building to all-electric. The team looked at data on the average amount of natural gas consumed by each type of equipment to estimate the natural gas consumption avoided through electrification of natural gas equipment and used data on energy factors by equipment type was used to estimate the resulting increase in electricity use resulting from the replacement of natural gas equipment with electric equipment. The team applied emission factors for natural gas consumption and electricity use to estimate the emissions reduction associated with a reduction in natural gas consumption and the increase in emissions associated with an increase in electricity use and took the net resulting emissions as the estimated emissions avoided from the policy.

GHG Sources

California Energy Commission. 2009. "2009 California Residential Appliance Saturation Study." https://ww2.energy.ca.gov/appliances/rass/previous_rass.html

APPENDIX 1

CF 1 Electric vehicle charging infrastructure

Assumptions

	2030	2040	2045
Cumulative average square feet of new commercial building space per parking spot	300	300	300
Target percent of new workplace parking to have EV charger installed	20%	20%	25%
Target percent of new multi-unit dwelling residents with EV charger access	15%	25%	30%
Target percent of new single-family homes to have EV charger outlet installed	15%	25%	35%
Cumulative percent commercial buildings that are office space with parking	59%	64%	64%
Cumulative average square feet of existing commercial building space per parking spot	600	600	600
Target percent of existing workplace parking to have EV charger installed	7%	8%	10%
Target percent of existing multi-unit dwelling residents with access to EV charging	7%	8%	10%
Cumulative target additional public parking spaces with EV charging	38	55	60
Cumulative percent of EV purchases that replace a gasoline vehicle	98%	97%	96%
Cumulative percent of EV purchases that replace a diesel vehicle	2%	3%	4%
Target percent of heavy-duty vehicle converted to EV	5%	20%	25%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	-22,561,870	-36,502,430	-51,974,960
Emissions reduction ($MTCO_2e$)	24,420	49,390	69,780

Performance Indicators

	2030	2040	2045
New non-residential parking spaces with EV charging	1,570 EV charging ports installed at new non-residential buildings.	3,160 EV charging ports installed at new non-residential buildings.	5,010 EV charging ports installed at new non-residential buildings.
New multi-unit dwelling residential parking spaces with EV charging	810 EV charging ports installed at new multi-family residential buildings.	3,380 EV charging ports installed at new multi-family residential buildings.	5,290 EV charging ports installed at new multi-family residential buildings.
New single-family residential parking spaces with EV charger outlet	680 EV charging outlets installed at new single-family residential buildings.	1,970 EV charging outlets installed at new single-family residential buildings.	3,600 EV charging outlets installed at new single-family residential buildings.
Existing non-residential parking spaces with EV charging	1,540 EV charging ports installed at existing non-residential buildings.	2,100 EV charging ports installed at existing non-residential buildings.	2,770 EV charging ports installed at existing non-residential buildings.
Existing multi-unit dwelling residential parking spaces with EV charging	1,850 EV charging ports installed at existing multi-family residential buildings.	2,570 EV charging ports installed at existing multi-family residential buildings.	3,530 EV charging ports installed at existing multi-family residential buildings.
Existing additional public parking spaces with EV charging	38 EV charging ports installed at existing public locations.	60 EV charging ports installed at existing public locations.	60 EV charging ports installed at existing public locations.
Number of light-duty electric vehicles purchased or leased	5510 light-duty electric vehicles purchased or leased	10,840 light-duty electric vehicles purchased or leased.	16,110 light-duty electric vehicles purchased or leased

APPENDIX 1

GHG Method

The project team relied on data from the Strive San Mateo General Plan 2040 Land Use Element for the projected buildout of nonresidential buildings in San Mateo, along with data from Association of Bay Area Governments (ABAG) Plan Bay Area on projected buildout of households in San Mateo out to 2050, to estimate the number of new buildings that would be impacted by an electric vehicle charging infrastructure new construction reach code. The team used permit data from the U.S. Department of Housing and Urban Development to estimate the percent of new residential units that will be single family or duplex vs. 3+ unit multifamily. Using assumptions regarding the building square footage per new development parking space, the team identified the total number of parking spaces associated with multi-family residential and commercial development, assuming an increasing percentage of new development parking spaces will be required to be built electric vehicle (EV) capable to accommodate electric vehicle supply equipment (EVSE). The team looked at how the deployment of EVSE in new development is projected to increase the rate at which residents and employees will replace gasoline vehicles with EVs, and estimated how the increased adoption of EVs is likely to decrease the VMT (and associated gasoline and diesel consumption) from gasoline and diesel vehicles and increase the VMT (and associated electricity use) from EVs. The team then applied emission factors for avoided gasoline and diesel consumption, and increased electricity use, and took the difference as the net reduction in GHG emissions.

GHG Sources

California Air Resources Board. 2022. "EMFAC2021 Web Database."

NREL, 2018. "CEC EV Infrastructure Projection Tool (EVI-Pro)."

U.S. Census Bureau. 2017. "American Community Survey."

U.S. Department of Energy. 2019. "www.fueleconomy.gov."

U.S. Department of Housing and Urban Development. 2019. "State of the Cities Data Systems."

U.S. Department of Transportation Federal Highway Administration. 2016. "Average miles driven per year by state."

CF 2 Electric vehicle education and outreach

Assumptions

	2030	2040	2045
Target percent of total community Transportation Network Company (TNC) VMT from electric vehicles	30%	45%	60%
Target percent total community VMT from electric vehicles	30%	60%	70%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	-4,334,040	-6,786,810	-10,211,980
Emissions reduction ($MTCO_2e$)	4,910	8,030	12,360

Performance Indicators

	2030	2040	2045
Annual additional VMT travelled by EV TNCs	17,528,180 vehicle miles travelled by internal combustion engine transportation network companies vehicles replaced with electric vehicles.	30,375,160 vehicle miles travelled by internal combustion engine transportation network companies vehicles replaced with electric vehicles.	45,704,900 vehicle miles travelled by internal combustion engine transportation network companies vehicles replaced with electric vehicles.

GHG Method

The projected team relied on forecasted total community VMT from passenger vehicles and estimates from the City of San Francisco on the percent of total community VMT from Transportation Network Companies (TNCs) to estimate the total annual VMT from TNCs in City of San Mateo. The team assumed that the policy or program aimed at regulating or incentivizing TNCs to increase adoption of EVs will results in a specific percent of TNCs being EVs by a given target year, and then estimated how the increased adoption of TNC EVs will decrease the VMT (and associated gasoline consumption) associated with gasoline vehicles and increase the VMT (and

associated electricity consumption) associated with EVs. The team applied the emission factor for avoided gasoline consumption, and an emissions factor for increased electricity use. The difference between the two results is the net GHG reduction from this measure.

GHG Sources

California Air Resources Board, 2022. "EMFAC2021 Web Database."

San Francisco County Transportation Authority. 2017. "TNCs Today: A Profile of San Francisco Transportation Network Company Activity."

US Department of Energy. 2019. www.fueleconomy.gov.

CF 3 Clean City fleet

GHG Assumptions

	2030	2040	2045
Percent of City vehicles replaced with EVs	25%	45%	60%
Percent of City vehicles fueled by biomethane	15%	20%	25%

Activity and GHG Reductions

	2030	2040	2045
Electricity savings (kWh)	-105,540	-212,500	-319,750
Emissions reduction ($MTCO_2e$)	130	200	270

Performance Indicators

	2030	2040	2045
Fleet EV VMT	610,020	1,250,360	1,779,020
Fleet biomethane VMT	366,010	555,720	741,260

GHG Method

The projected team looked at State projections for regional increases in electric and natural gas (including biomethane) vehicles and applied these proportions to the City municipal fleet. The team then took the local projections for increases in electric and natural gas vehicles in the municipal fleet and identified the increase in electric and natural gas VMT resulting from local policies. The team then adjusted the natural gas VMT to account for the different energy density of natural gas and gasoline/diesel and calculated the increase in electricity resulting from greater municipal EV adoption. Lastly, the team applied emission factors, taking the net difference between decreased VMT emissions from electric and natural gas vehicle adoption and increased electricity use as the overall GHG benefit.

APPENDIX 1

GHG Sources

City of San Mateo. 2007. *City of San Mateo Greenhouse Gas Emissions Inventory Report*. https://www.cityofsanmateo.org/DocumentCenter/View/5262/APPENDIX-S-October24-2007?bidId=

ICLEI Local Governments for Sustainability USA. 2012. *US Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions*. http://www.icleiusa.org/tools/ghgprotocol/community-protocol.

Gable, C., and Gable, S. 2019. "Gasoline Gallon Equivalents (GGE)." https://www.thoughtco.com/fuel-energy-comparisons-85636.

CF 4 Clean fuel

GHG Assumptions

	2030	2040	2045
Target % total community VMT from hydrogen vehicles	8%	30%	45%

Activity and GHG Reductions

	2030	2040	2045
Electricity savings (kWh)	-2,186,300	-8,413,180	-13,430,770
Emissions reduction ($MTCO_2e$)	4,210	16,920	26,360

Performance Indicators

	2030	2040	2045
Number of heavy-duty hydrogen vehicles purchased or leased	260 hydrogen fuel heavy-duty cell vehicles purchased or leased .	1,110 hydrogen fuel cell heavy-duty vehicles purchased or leased .	1,770 hydrogen fuel cell heavy-duty vehicles purchased or leased .

GHG Method

The project team estimated how the deployment of hydrogen fueling stations will increase the rate at which residents and employees will replace heavy-duty gasoline and diesel vehicles with hydrogen fuel cell vehicles (FCVs). The team analyzed how the increased adoption of FCVs is likely to decrease the VMT (and associated gasoline consumption) associated with heavy-duty gasoline diesel vehicles and increase the VMT (and associated hydrogen consumption) associated with FCVs. The team used data from the U.S. Department of Energy on the efficiency of the electrolysis process to estimate the amount of electricity required to produce hydrogen. The team then applied an emission factor for avoided gasoline and diesel consumption to estimate the emissions reduction associated with reduced gasoline and diesel consumption, and an emission factor for electricity consumption to estimate the emissions increase associated with increased electricity use. The net resulting emissions is the estimated emissions avoided from the policy.

APPENDIX 1

GHG Sources

California Air Resources Board, 2022. "EMFAC2021 Web Database."

California Air Resources Board, 2023. "Final 2022 Scoping Plan – AB 32 GHG Inventory Sectors Modeling Data Spreadsheet." https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents.

US Department of Energy, 2019. www.fueleconomy.gov.

U.S. Department of Energy, 2019. "DOE Technical Targets for Hydrogen Production from Electrolysis."

ST 1 Bicycle mode share

GHG Assumptions

	2020	2030	2050
Additional miles of bike lanes	22	45.2	45.2

Activity and GHG Reduction

	2020	2030	2050
Travel savings (VMT)	300,960	704,120	751,370
Emissions reduction ($MTCO_2e$)	80	170	180

Performance Indicators

	2020	2030	2050
Total miles of bike lanes	78	101	101

GHG Method

The project team identified projected increase in bike lanes from implementation of the Bicycle Master Plan. Based on the proposed additional miles of bike lanes in San Mateo, the team followed the recommendations of the California Air Pollution Control Officer's Association to estimate the projected decrease in VMT as a result. The team then applied the appropriate emissions factors to calculate the GHG reduction.

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

City of San Mateo. 2019. *City of San Mateo Bicycle Master Plan*. https://www.cityofsanmateo.org/3944/Bicycle-Master-Plan-Update.

APPENDIX 1

ST 2 Pedestrian mode share

GHG Assumptions

It is assumed that all new development occurs in infill areas (areas with existing development)

Activity and GHG Reduction

	2020	2030	2050
Travel savings (VMT)	436,590	497,160	530,520
Emissions reduction ($MTCO_2e$)	110	120	130

Performance Indicators

There are no performance indicators associated with this measure.

GHG Method

Using the Pedestrian Master Plan, the project team identified the existing and planned miles of sidewalks and pedestrian pathways in San Mateo. The team applied a method recommended by the California Air Pollution Control Officers Association to determine the VMT reduction, and then applied the appropriate emissions factor to calculate GHG reductions.

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

City of San Mateo. 2012. "Citywide Pedestrian Master Plan." https://www.cityofsanmateo.org/2218/Pedestrian-Master-Plan

ST 3 Micromobility and shared mobility

GHG assumptions, activity and GHG reductions, and performance indicators.

This is a supportive measure, due to the lack of sufficient data or a feasible method of quantification that would avoid double-counting reductions with other measures. As a result, there are no assumptions, activity or GHG reductions, and performance indicators associated with this measure.

GHG Method

Supportive measures do not produce direct, measurable GHG reductions, so no calculations were made.

GHG Sources

Supportive measures do not produce direct, measurable GHG reductions. There are no sources for GHG reduction calculations for supportive measures.

APPENDIX 1

ST 4 Public transit service

GHG Assumptions

	2030	2040	2045
Bus coverage	15%	20%	20%
Percent increase in Caltrain service	25%	40%	50%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	-10,253,31	-23,468,340	-31,189,470
Travel savings (VMT)	13,770,100	23,451,790	29,098,510
Emissions reduction ($MTCO_2e$)	3,610	5,660	6,910

Performance Indicators

	2030	2040	2045
Bus commute share	15%	20%	20%
Average Caltrain daily ridership in San Mateo	8,070	12,900	15,720

GHG Method

For increases in the bus coverage network, the project team made an assumption regarding the percentage increase in bus network miles. Using methods from the California Air Pollution Control District, the project team determined the VMT reduction that would occur given this increase in network coverage, and then applied the appropriate GHG emissions factor. For an increase in Caltrain service frequency, the project team reviewed Caltrain's existing business plan and projected increases in service under the "Moderate Growth" scenario, then applied this increase to San Mateo. Using factors from the inventory and existing/planned activity calculations, the team determined the VMT reduction from increased Caltrain service as well as the increase in electricity use due to Caltrain becoming a mostly electric system. The team applied the appropriate emissions factors to the difference in VMT to calculate a reduction in emissions.

TECHNICAL APPENDIX: METHODS AND ASSUMPTIONS

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

Caltrain. 2020. *Caltrain Business Plan Summary Report.* https://www.caltrain.com/media/24042/download?inline.

Caltrain. 2019. *Caltrain Business Plan: Developing a Long-Range Vision for Caltrain*. https://caltrain2040.org/wp-content/uploads/CBP_CIA_R2_Booklet_SanMateo-2.pdf.

U.S. Census Bureau. 2023. 2014 – 2019 American Community Survey 5-Year Estimates, B08006: Sex of Workers by Means of Transportation to Work [data table].

APPENDIX 1

ST 5 Commuter programs

GHG Assumptions

	2030	2040	2045
Percent of existing employers (pre-2006) participating in TDM	5%	20%	30%
Average trip reduction from voluntary TDM participation, beyond other CAP measures	8%	30%	40%

Activity and GHG Reduction

	2030	2040	2045
Travel savings (VMT)	15,290	278,640	669,000
Emissions reduction ($MTCO_2e$)	Less than 10	70	160

Performance Indicators

	2030	2040	2045
Existing (pre-2006) businesses participating in TDM efforts	130	540	810

GHG Method

The project team identified the amount of commute-related VMT from personal vehicles associated with existing businesses and applied the projected metrics from voluntary participation in Transportation Demand Management (TDM) programs to determine the total VMT reduction from implementation of this measure. The team then used the appropriate emissions factors to calculate GHG reductions. It is assumed that these TDM standards would go beyond trip reductions associated with other measures in the CAP, as the goal of TDM efforts is to reduce trip generation below the level that would otherwise occur if the TDM requirement was not in place.

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

ST 6 Transportation Demand Management

GHG Assumptions

	2030	2040	2045
Percent of new developments subject to TDM rules	90%	90%	90%
Average trip reduction from new development subject to TDM rules, beyond other CAP measures	10%	15%	20%

Activity and GHG Reduction

	2030	2040	2045
Travel savings (VMT)	7,646,580	32,944,170	56,484,350
Emissions reduction ($MTCO_2e$)	2,010	7,950	13,410

Performance Indicators

	2030	2040	2045
Service population in new development (2018 and later) subject to the TDM ordinance	29,940	65,680	86,010

GHG Method

The project team determined the number of new people and jobs in developments that would be subject to TDM rules, excluding those already identified through the existing and planned activities assessment. Using projections of future TDM standards, the project team determined the amount of VMT that would be reduced by future TDM requirements, then converted this reduction to a decrease in GHG emissions. It is assumed that these TDM standards would go beyond trip reductions associated with other measures in the CAP, as the goal of TDM efforts is to reduce trip generation below the level that would otherwise occur if the TDM requirement was not in place.

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

APPENDIX 1

ST 7 Transit-oriented development

GHG Assumptions

	2030	2040	2045
Percent of new units in areas supporting transit-oriented development	95%	95%	95%
Percent of new nonresidential square footage in areas supporting transit-oriented development	90%	90%	90%

Activity and GHG Reduction

	2030	2040	2045
Travel savings (VMT)	38,865,630	78,398,130	99,833,910
Emissions reduction ($MTCO_2e$)	10,200	18,920	23,700

Performance Indicators

	2030	2040	2045
New development in TOD zones	9,610 households and 7,350 employees	20,330 households and 14,880 employees	26,520 households and 18,970 employees

GHG Method

The project team identified the anticipated development in areas that support transit-oriented development and used geospatial analysis to obtain a reasonable estimate of the new growth potential in these areas. The team then used resources from the California Air Pollution Control Officers Association to determine the VMT reduction associated with transit-oriented development in these areas, then applied the appropriate emissions factors to calculate GHG reductions.

GHG Sources

California Air Pollution Control Officers Association. 2021. "Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity."

City of San Mateo. 2018. Area plans [GIS file].

City of San Mateo. 2018. SMRoadCenterline [GIS file].

Metropolitan Transportation Commission. 2017. Major_Transit_Stops_2017 [GIS file].

TECHNICAL APPENDIX: METHODS AND ASSUMPTIONS

SW 1 Composting program

GHG Assumptions

	2030	2040	2045
Residential composting participation rate	90%	93%	95%
Nonresidential composting participation rate	85%	88%	90%

Activity and GHG Reduction

	2030	2040	2045
Waste savings (tons)	2,350	3,900	4,220
Emissions reduction ($MTCO_2e$)	1,030	1,710	1,850

Performance Indicators

	2030	2040	2045
Composting participation levels	47,270 households and 3,890 businesses	59,020 households and 4,510 businesses	66,800 households and 4,880 businesses

GHG Method

The project team reviewed the number of future projected residences and nonresidential buildings participating in the community's composting program, removing the currently participating customers to only focus on growth in the composting program. The team used results of a statewide waste characterization study to estimate the total amount of organic waste generated by the participants and combined this information with technical factors for waste decomposition by materials to identify the total reduction in GHG emissions.

GHG Sources

California Air Resources Board. 2010. *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories version 1.1.* https://ww3.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf

California Air Resources Board. 2011. Landfill Emissions Tool version 1.3. https://ww3.arb.ca.gov/cc/landfills/landfills.htm

California Department of Resources Recycling and Recovery. 2020. *2018 Disposal-Facility-Based Characterization of Solid Waste in California*. https://www2.calrecycle.ca.gov/Publications/Details/1546.

City of San Mateo. 2022. *2022 Climate Action Plan Annual Progress Report.* https://www.cityofsanmateo.org/3962/CAP-Progress-Updates

APPENDIX 1

SW 2 Expanded recycling service

GHG Assumptions

	2030	2040	2045
Target diversion rate	85%	88%	90%

Activity and GHG Reduction

	2030	2040	2045
Waste savings (tons)	9,860	12,570	14,330
Emissions reduction ($MTCO_2e$)	6,070	7,730	8,820

Performance Indicators

	2030	2040	2045
Total tons of recyclables recovered (curbside bins only)	22,450	27,420	30,480

GHG Method

The project team looked at projections of how San Mateo's diversion rate from curbside recycling may increase in future years and used statewide waste characterization studies to identify the amounts of various material types that could be recovered from this increase. The team then applied the results of technical studies about waste decomposition to determine the total GHG reductions that would result from increased waste collection.

GHG Sources

California Air Resources Board. 2010. *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories version 1.1*. https://ww3.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf

California Air Resources Board. 2011. Landfill Emissions Tool version 1.3. https://ww3.arb.ca.gov/cc/landfills/landfills.htm

California Department of Resources Recycling and Recovery. 2020. *2018 Disposal-Facility-Based Characterization of Solid Waste in California*. https://www2.calrecycle.ca.gov/Publications/Details/1666.

Chow, A. 2023. City of San Mateo. Personal communication to E. Krispi, PlaceWorks. April 24.

SW 3 Waste awareness and source reduction

GHG Assumptions

	2030	2040	2045
Decrease in non-organic and non-recyclable waste tonnage	5%	20%	50%

Activity and GHG Reduction

	2030	2040	2045
Waste savings (tons)	15,420	30,110	41,510
Emissions reduction ($MTCO_2e$)	2,080	4,050	5,590

Performance Indicators

	2030	2040	2045
Decrease in non-organic and non-recyclable waste tonnage sent to landfills	15,420	30,110	41,510

GHG Method

The project team looked at statewide waste characterization studies to determine the amount of materials being produced in San Mateo that could not be recycled or composted (including construction and demolition wastes) and used technical studies about waste characterization to determine the GHG emissions associated with a ton of this waste material. The project team then examined projections about waste awareness potential to identify how much of this waste could be reduced in future years and combined these two outcomes to determine the total GHG savings.

GHG Sources

California Air Resources Board. 2010. *Local Government Operations Protocol for the Quantification and Reporting of Greenhouse Gas Emissions Inventories version 1.1.* https://ww3.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf

California Air Resources Board. 2011. Landfill Emissions Tool version 1.3. https://ww3.arb.ca.gov/cc/landfills/landfills.htm

California Department of Resources Recycling and Recovery. 2020. *2018 Disposal-Facility-Based Characterization of Solid Waste in California*. https://www2.calrecycle.ca.gov/Publications/Details/1666.

APPENDIX 1

WW 1 Water-efficiency retrofits for existing buildings

GHG Assumptions

	2030	2040	2045
Percent of existing homes retrofitting water fixtures	50%	70%	80%
Percent of existing businesses retrofitting water fixtures	40%	70%	80%
Percent of existing homes with greywater systems	5%	15%	20%
Percent of existing businesses with greywater systems	3%	10%	15%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	411,310	777,100	914,320
Water savings (millions of gallons)	160	280	340
Emissions reduction ($MTCO_2e$)	170	300	360

Performance Indicators

	2030	2040	2045
Number of water efficiency retrofits	19,890 existing homes and 1,610 existing businesses with water efficiency retrofits.	27,840 existing homes and 2,820 existing businesses with water efficiency retrofits.	31,820 existing homes and 3,230 existing businesses with water efficiency retrofits.
Number of greywater system installations as part of retrofit activities	2,120 homes and 120 businesses with greywater systems installed.	6,360 homes and 400 businesses with greywater systems installed.	8,480 homes and 610 businesses with greywater systems installed.

GHG Method

Working on the assumption that half of greywater systems are laundry-to-landscaping, and that the other half uses greywater from additional sources such as wash basins and showers, the project team identified the water savings resulting from greywater systems for an individual home or business. The project team then used the

water savings to determine the decrease in electricity use and direct process emissions associated with this effort per building, and then applied the projections of greywater installations at existing San Mateo buildings as part of retrofit activities to identify the total water, electricity, and direct process emissions. The team applied the appropriate electricity emissions coefficients to identify the additional GHG savings.

GHG Sources

Alliance for Water Efficiency. 2009. *Making Every Drop Work: Increasing Water Efficiency in California's Commercial, Industrial, and Institutional (CII) Sector*. https://www.allianceforwaterefficiency.org/resources/publications/making-every-drop-work-increasing-water-efficiency-california%E2%80%99s-commercial.

California Department of Water Resources. 2013. *California Water Plan 2013 Update, Volume 3, Chapter 3: Water Use Efficiency*. http://toolbox.calwep.org/wiki/California_Water_Plan_2013_Update_(selections)#tab=Vol__3_Ch__3_-_Water_Use_Efficiency.

California Department of Water Resources. 2017. *Making Water Conservation a California Way of Life: Implementing Executive Order B-37-16*. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Make-Water-Conservation-A-California-Way-of-Life/County-Drought-Planning/Files/Making-Water-Conservation-a-CA-Way-of-Life-EO-B-37-16.pdf.

APPENDIX 1

WW 2 Water-efficient landscaping

GHG Assumptions

	2030	2040	2045
Reduction in total outdoor water use	10%	20%	25%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	374,760	827,380	1,086,620
Water savings (millions of gallons)	260	570	750
Emissions reduction ($MTCO_2e$)	Less than 10	10	0

GHG Method

The team estimated the total water use that occurs outdoors in San Mateo and determined the amount that would be reduced based on assumed participation levels. The project team then used the water savings to determine the decrease in electricity use associated with this effort and applied the appropriate electricity emissions coefficients to identify the GHG savings.

GHG Sources

There are no sources for this measure beyond the inventory and forecast.

WW 3 Water efficiency in new construction

GHG Assumptions

	2030	2040	2045
Percent of new homes installing greywater systems	8%	20%	25%
Percent of new businesses installing greywater systems	5%	15%	20%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	7,620	40,580	66,320
Water savings (millions of gallons)	10	30	50
Emissions reduction ($MTCO_2e$)	Less than 10	10	10

Performance Indicators

	2030	2040	2045
Number of new homes with greywater systems	810	4,280	6,980
Number of new businesses with greywater systems	30	160	280

GHG Method

Working on the assumption that half of greywater systems are laundry-to-landscaping, and that the other half uses greywater from additional sources such as wash basins and showers, the project team identified the water savings resulting from greywater systems for an individual home or business. The project team then used the water savings to determine the decrease in electricity use and direct process emissions associated with this effort per building, and then applied the projections of greywater installations at new San Mateo buildings to identify the total water, electricity, and direct process emissions. The team applied the appropriate electricity emissions coefficients to identify the additional GHG savings.

APPENDIX 1

GHG Sources

Alliance for Water Efficiency. 2009. *Making Every Drop Work: Increasing Water Efficiency in California's Commercial, Industrial, and Institutional (CII) Sector*. https://www.allianceforwaterefficiency.org/resources/publications/making-every-drop-work-increasing-water-efficiency-california%E2%80%99s-commercial.

California Department of Water Resources. 2013. *California Water Plan 2013 Update, Volume 3, Chapter 3: Water Use Efficiency*. http://toolbox.calwep.org/wiki/California_Water_Plan_2013_Update_(selections)#tab=Vol__3_Ch__3_-_Water_Use_Efficiency.

California Department of Water Resources. 2017. *Making Water Conservation a California Way of Life: Implementing Executive Order B-37-16*. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/Make-Water-Conservation-A-California-Way-of-Life/County-Drought-Planning/Files/Making-Water-Conservation-a-CA-Way-of-Life-EO-B-37-16.pdf.

OR 1 Alternative fuel off-road equipment

GHG Assumptions

	2030	2040	2045
Percent of landscaping equipment that uses electricity	20%	45%	60%
Percent of other off-road equipment that uses electricity	15%	25%	30%

Activity and GHG Reduction

	2030	2040	2045
Electricity savings (kWh)	-2,201,600	-4,633,000	-6,091,990
Emissions reduction ($MTCO_2e$)	3,660	7,130	9,890

GHG Method

The team used data from the California Air Resources Board and the inventory to identify the reduction in direct emissions per percent of landscaping equipment and non-landscaping off-road equipment converted to electricity traded in. The team then estimated the decrease in gasoline and diesel fuel resulting from this effort and used information about energy density to determine the increase in electricity needs. The team estimated the GHG increase from greater electricity needs and subtracted this from the emission reduction from decreased fuel use to determine the net GHG reduction.

GHG Sources

Alternative Fuels Data Center. 2014. *Alternative Fuels Data Center – Fuel Properties Comparison*. https://afdc.energy.gov/fuels/fuel_comparison_chart.pdf/

California Air Resources Board. 2022. "EMFAC2021 Web Database."

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

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[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
KURT R. WIESE, GENERAL COUNSEL
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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

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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

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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 efforts 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.

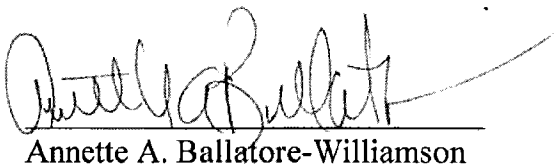
Rule 8.520 Disclosure

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
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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 D

NOISE DATA

APPENDIX D1: BASELINE NOISE MEASUREMENTS

Project Name: San Mateo General Plan

Date: 11/17/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 1

Time Start: 3:16 PM End: 3:31 PM

Site Location/Address: Across from San Mateo High School. 792 E Poplar Avenue

Primary Noise Source: Passing car, children playing

Measurement Results	
Percentiles	dBA
Leq	64.0
Lmax	74.0
Lmin	47.2
L2	71
L8	68.5
L25	65.0
L50	61.8
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
3:16 PM	Low	54.4
3:17 PM	Standard passing car	71.8
3:18 PM	New Low	47.7

Comments (sound walls, height, etc.): Chain link fence behind monitor (10 feet)

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
E Poplar Avenue	2		191		

Summary

File Name on Meter	LxT_Data.009.s
File Name on PC	LxT_0005427-20221117 151617-LxT_Data.009.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-17 15:16:17
Stop	2022-11-17 15:31:04
Duration	00:14:47.5
Run Time	00:14:47.5
Pause	00:00:00.0
Pre-Calibration	2022-11-17 15:15:02
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Exponential
Overload	146.7 dB

	A	C	Z	
Under Range Peak	102.6	99.6	**104.6**	dB
Under Range Limit	**39.7**	39.4	46.5	dB
Noise Floor	30.6	30.3	37.4	dB

	First	Second	Third
Instrument Identification			

Results

LA_{Seq}	64.0	dB	
LASE	93.5	dB	
EAS	247.700	µPa²h	
EAS8	8.038	mPa²h	
EAS40	40.190	mPa²h	
$LZ_{peak\ (max)}$	2022-11-17 15:18:31	102.6	dB
LAS_{max}	2022-11-17 15:20:44	74.0	dB
LAS_{min}	2022-11-17 15:18:42	47.2	dB
SEA	-99.9	dB	

	Exceedance Counts	Duration	
LAS > 85.0 dB	0	0.0	s
LAS > 115.0 dB	0	0.0	s
LZ_{peak} > 135.0 dB	0	0.0	s

LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	71.3 dB
LAS_{eq}	64.0 dB
LCS_{eq} - LAS_{eq}	7.3 dB
LAI_{eq}	66.2 dB
LA_{eq}	64.0 dB
LAI_{eq} - LA_{eq}	2.2 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	64.0					
$L_{S(max)}$	74.0	2022/11/17 15:20:44				
$L_{S(min)}$	47.2	2022/11/17 15:18:42				
$L_{Peak(max)}$					102.6	2022/11/17 15:18:31

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	48.9	48.9 dB

Statistics

LAS 2.00	71.0 dB
LAS 8.00	68.5 dB
LAS 25.00	65.0 dB
LAS 50.00	61.8 dB
LAS 90.00	51.5 dB
LAS 99.00	48.2 dB

Project Name: San Mateo General Plan

Date: 11/17/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 2

Time Start: 3:50 PM End: 4:05 PM

Site Location/Address: 100 W Poplar Avenue

Primary Noise Source: Passing cars

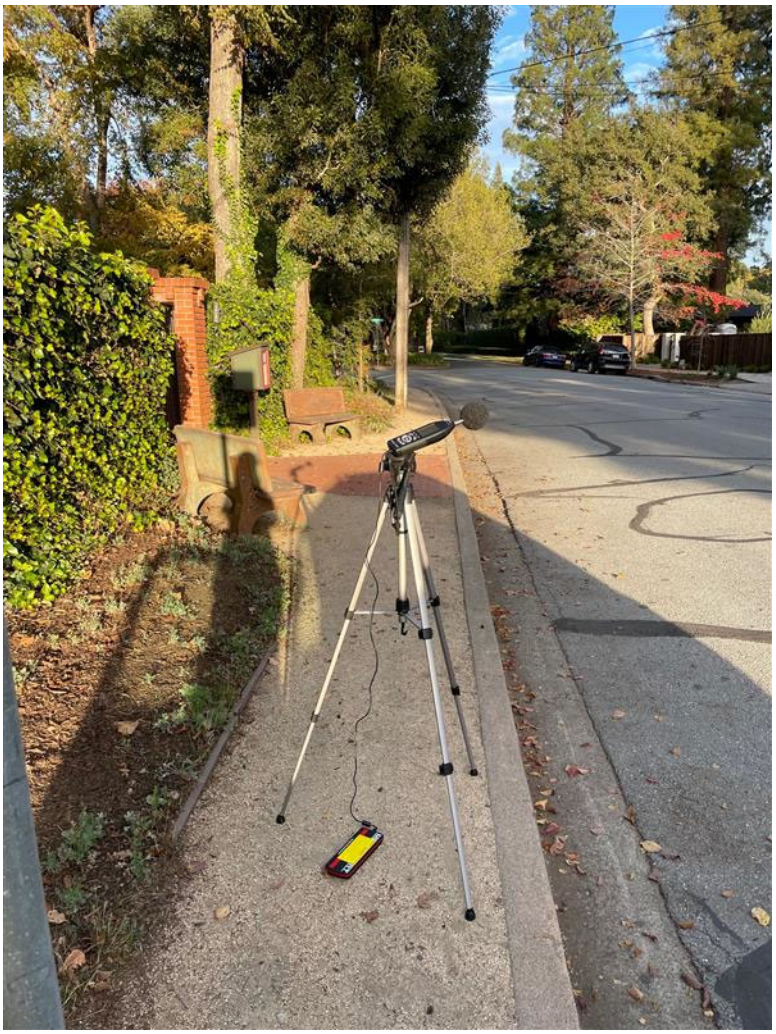
Measurement Results	
Percentiles	dBA
Leq	59.1
Lmax	73.6
Lmin	39.7
L2	68.6
L8	65.0
L25	56.2
L50	50.2
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
3:50 PM	Passing car	69.1
3:51 PM	Low	44.8
3:53 PM	Plane overhead	57.7
3:59 PM	Passing car	67.1

Comments (sound walls, height, etc.): Brick 1

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
W Poplar Avenue	2		28		



Summary

File Name on Meter	LxT_Data.011.s
File Name on PC	LxT_0005427-20221117 155014-LxT_Data.011.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-17 15:50:14
Stop	2022-11-17 16:05:18
Duration	00:15:04.0
Run Time	00:15:04.0
Pause	00:00:00.0
Pre-Calibration	2022-11-17 15:15:02
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Exponential
Overload	146.7 dB

	A	C	Z	
Under Range Peak	102.6	99.6	**104.6**	dB
Under Range Limit	**39.7**	39.4	46.5	dB
Noise Floor	30.6	30.3	37.4	dB

	First	Second	Third
Instrument Identification			

Results

LA_{Seq}	59.1	dB	
LASE	88.7	dB	
EAS	81.644	µPa²h	
EAS8	2.601	mPa²h	
EAS40	13.005	mPa²h	
$LZ_{peak\ (max)}$	2022-11-17 16:04:49	101.3	dB
LAS_{max}	2022-11-17 15:54:29	73.6	dB
LAS_{min}	2022-11-17 15:58:58	39.7	dB
SEA	-99.9	dB	

	Exceedance Counts	Duration	
LAS > 85.0 dB	0	0.0	s
LAS > 115.0 dB	0	0.0	s
LZ_{peak} > 135.0 dB	0	0.0	s

LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	66.3 dB
LAS_{eq}	59.1 dB
LCS_{eq} - LAS_{eq}	7.2 dB
LAI_{eq}	62.8 dB
LA_{eq}	59.1 dB
LAI_{eq} - LA_{eq}	3.7 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	59.1					
$L_{S(max)}$	73.6	2022/11/17 15:54:29				
$L_{S(min)}$	39.7	2022/11/17 15:58:58				
$L_{Peak(max)}$					101.3	2022/11/17 16:04:49

Overload Count	0	
Overload Duration	0.0 s	

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	44.1	44.1	dB

Statistics

LAS 2.00	68.6 dB
LAS 8.00	65.0 dB
LAS 25.00	56.2 dB
LAS 50.00	50.2 dB
LAS 90.00	44.9 dB
LAS 99.00	41.9 dB

Project Name: San Mateo General Plan

Date: 11/17/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 3

Time Start: 4:18 PM End: 4:34 PM

Site Location/Address: 725 Patricia Avenue

Primary Noise Source: Passing cars

Measurement Results	
Percentiles	dBA
Leq	54.4
Lmax	75.4
Lmin	44.3
L2	64.5
L8	54.8
L25	49.4
L50	47.7
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
4:19 PM	Average level	54.7
4:23 PM	Passing car	65.2

Comments (sound walls, height, etc.): Shrubs 10 feet behind monitor

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
Patricia Avenue	2		9		

Summary

File Name on Meter	LxT_Data.012.s
File Name on PC	LxT_0005427-20221117 161854-LxT_Data.012.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-17 16:18:54
Stop	2022-11-17 16:34:14
Duration	00:15:20.5
Run Time	00:15:19.5
Pause	00:00:01.0
Pre-Calibration	2022-11-17 15:15:02
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Exponential
Overload	146.7 dB

	A	C	Z	
Under Range Peak	102.6	99.6	**104.6**	dB
Under Range Limit	**39.7**	39.4	46.5	dB
Noise Floor	30.6	30.3	37.4	dB

	First	Second	Third
Instrument Identification			

Results

LA_{Seq}	54.4	dB	
LASE	84.0	dB	
EAS	28.139	µPa²h	
EAS8	881.353	µPa²h	
EAS40	4.407	mPa²h	
$LZ_{peak\ (max)}$	2022-11-17 16:19:14	102.9	dB
LAS_{max}	2022-11-17 16:26:05	75.4	dB
LAS_{min}	2022-11-17 16:23:04	44.3	dB
SEA	-99.9	dB	

	Exceedance Counts	Duration	
LAS > 85.0 dB	0	0.0	s
LAS > 115.0 dB	0	0.0	s
LZ_{peak} > 135.0 dB	0	0.0	s

LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	64.8 dB
LAS_{eq}	54.4 dB
LCS_{eq} - LAS_{eq}	10.4 dB
LAI_{eq}	58.2 dB
LA_{eq}	54.4 dB
LAI_{eq} - LA_{eq}	3.8 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	54.4					
$L_{S(max)}$	75.4	2022/11/17 16:26:05				
$L_{S(min)}$	44.3	2022/11/17 16:23:04				
$L_{Peak(max)}$					102.9	2022/11/17 16:19:14

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	39.4	39.4 dB

Statistics

LAS 2.00	64.5 dB
LAS 8.00	54.8 dB
LAS 25.00	49.4 dB
LAS 50.00	47.7 dB
LAS 90.00	46.1 dB
LAS 99.00	45.1 dB

Project Name: San Mateo General Plan

Date: 11/18/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 4

Time Start: 7:39 AM End: 4:54 AM

Site Location/Address: 1405 South Delaware Street

Primary Noise Source: Passing cars, passing train

Measurement Results	
Percentiles	dBA
Leq	67.0
Lmax	78.4
Lmin	49.0
L2	73.6
L8	71.6
L25	68.9
L50	63.4
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
7:40 AM	Passing train	75.7
7:41 AM	Regular passing car	70.9
7:43 AM	Low	54.7

Comments (sound walls, height, etc.):

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
S Delaware Street	2		86		

Summary

File Name on Meter	LxT_Data.017.s
File Name on PC	LxT_0005427-20221118 073915-LxT_Data.017.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-18 07:39:15
Stop	2022-11-18 07:54:21
Duration	00:15:05.9
Run Time	00:15:05.9
Pause	00:00:00.0
Pre-Calibration	2022-11-18 07:35:26
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Exponential		
Overload	146.7 dB		
	A	**C**	**Z**
Under Range Peak	102.7	99.7	**104.7** dB
Under Range Limit	**39.8**	39.5	46.6 dB
Noise Floor	30.7	30.3	37.4 dB
	First	**Second**	**Third**
Instrument Identification			

Results

LA_{Seq}	67.0 dB	
LASE	96.6 dB	
EAS	504.473 µPa²h	
EAS8	16.038 mPa²h	
EAS40	80.190 mPa²h	
$LZ_{peak\ (max)}$	2022-11-18 07:43:46	102.2 dB
LAS_{max}	2022-11-18 07:43:46	78.4 dB
LAS_{min}	2022-11-18 07:53:31	49.0 dB
SEA	-99.9 dB	
	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s

LZ_{peak} > 135.0 dB	0	0.0 s
LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	72.3 dB
LAS_{eq}	67.0 dB
LCS_{eq} - LAS_{eq}	5.3 dB
LAI_{eq}	69.6 dB
LA_{eq}	67.0 dB
LAI_{eq} - LA_{eq}	2.6 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	67.0					
$L_{S(max)}$	78.4	2022/11/18 7:43:46				
$L_{S(min)}$	49.0	2022/11/18 7:53:31				
$L_{Peak(max)}$					102.2	2022/11/18 7:43:46

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	52.0	52.0 dB

Statistics

LAS 2.00	73.6 dB
LAS 8.00	71.6 dB
LAS 25.00	68.9 dB
LAS 50.00	63.4 dB
LAS 90.00	52.8 dB
LAS 99.00	50.0 dB

Project Name: San Mateo General Plan Date: 11/17/2022

Project Number: 2023-039.01 Monitoring Personnel:

Monitoring Site #: Short Term - 5 Time Start: 4:47 PM End: 5:02 PM

Site Location/Address: 1501 S. Norfolk Street

Primary Noise Source: Passing cars, airplanes

Measurement Results	
Percentiles	dBA
Leq	66.1
Lmax	77.4
Lmin	48.7
L2	72.8
L8	70.3
L25	67.2
L50	63.5
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
4:49 PM	Loud car	76.3

Comments (sound walls, height, etc.): None

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
S Norfolk Street			96		

Summary

File Name on Meter	LxT_Data.013.s
File Name on PC	LxT_0005427-20221117 164750-LxT_Data.013.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-17 16:47:50
Stop	2022-11-17 17:02:55
Duration	00:15:05.4
Run Time	00:15:05.4
Pause	00:00:00.0
Pre-Calibration	2022-11-17 15:15:02
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT1			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	146.7 dB			
	A		**C**	**Z**
Under Range Peak	102.6		99.6	**104.6** dB
Under Range Limit	**39.7**		39.4	46.5 dB
Noise Floor	30.6		30.3	37.4 dB
	First		**Second**	**Third**
Instrument Identification				

Results

LA_{Seq}	66.1 dB		
LASE	95.7 dB		
EAS	409.824 µPa²h		
EAS8	13.036 mPa²h		
EAS40	65.181 mPa²h		
$LZ_{peak\ (max)}$	2022-11-17 16:53:33	103.5 dB	
LAS_{max}	2022-11-17 16:49:38	77.4 dB	
LAS_{min}	2022-11-17 16:48:34	48.7 dB	
SEA	-99.9 dB		
	Exceedance Counts	**Duration**	
LAS > 85.0 dB	0	0.0 s	
LAS > 115.0 dB	0	0.0 s	
LZ_{peak} > 135.0 dB	0	0.0 s	

LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	73.7 dB
LAS_{eq}	66.1 dB
LCS_{eq} - LAS_{eq}	7.6 dB
LAI_{eq}	69.0 dB
LA_{eq}	66.1 dB
LAI_{eq} - LA_{eq}	2.9 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	66.1					
$L_{S(max)}$	77.4	2022/11/17 16:49:38				
$L_{S(min)}$	48.7	2022/11/17 16:48:34				
$L_{Peak(max)}$					103.5	2022/11/17 16:53:33

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	51.1	51.1 dB

Statistics

LAS 2.00	72.8 dB
LAS 8.00	70.3 dB
LAS 25.00	67.2 dB
LAS 50.00	63.5 dB
LAS 90.00	56.2 dB
LAS 99.00	50.2 dB

Project Name: San Mateo General Plan

Date: 11/17/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 6

Time Start: 5:15 PM End: 5:30 PM

Site Location/Address: Mariners Island Boulevard and Armada Way; Southeast intersection

Primary Noise Source: Passing cars

Measurement Results	
Percentiles	dBA
Leq	65.2
Lmax	77.5
Lmin	46.4
L2	74.5
L8	71.1
L25	64.2
L50	57.5
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
5:20 PM	Passing car	74.0
5:27 PM	Low	46.7
5:29 PM	Loud car	73.6

Comments (sound walls, height, etc.): None

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
Mariners Island Boulevard	4		49		


ONE WAY

Summary

File Name on Meter	LxT_Data.014.s
File Name on PC	LxT_0005427-20221117 171527-LxT_Data.014.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-17 17:15:27
Stop	2022-11-17 17:30:30
Duration	00:15:03.3
Run Time	00:15:03.3
Pause	00:00:00.0
Pre-Calibration	2022-11-17 15:15:02
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1
Microphone Correction	Off
Integration Method	Exponential
Overload	146.7 dB

	A	C	Z
Under Range Peak	102.6	99.6	**104.6** dB
Under Range Limit	**39.7**	39.4	46.5 dB
Noise Floor	30.6	30.3	37.4 dB

	First	Second	Third
Instrument Identification			

Results

LA_{Seq}	65.2 dB	
LASE	94.8 dB	
EAS	332.345 µPa²h	
EAS8	10.596 mPa²h	
EAS40	52.981 mPa²h	
$LZ_{peak\ (max)}$	2022-11-17 17:15:33	105.5 dB
LAS_{max}	2022-11-17 17:15:32	77.5 dB
LAS_{min}	2022-11-17 17:17:40	46.4 dB
SEA	-99.9 dB	

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LZ_{peak} > 135.0 dB	0	0.0 s

LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	70.2 dB
LAS_{eq}	65.2 dB
LCS_{eq} - LAS_{eq}	5.0 dB
LAI_{eq}	68.0 dB
LA_{eq}	65.2 dB
LAI_{eq} - LA_{eq}	2.8 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	65.2					
$L_{S(max)}$	77.5	2022/11/17 17:15:32				
$L_{S(min)}$	46.4	2022/11/17 17:17:40				
$L_{Peak(max)}$					105.5	2022/11/17 17:15:33

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	50.2	50.2 dB

Statistics

LAS 2.00	74.5 dB
LAS 8.00	71.1 dB
LAS 25.00	64.2 dB
LAS 50.00	57.5 dB
LAS 90.00	49.2 dB
LAS 99.00	47.1 dB

Project Name: San Mateo General Plan

Date: 11/18/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 7

Time Start: 8:08 AM End: 8:23 AM

Site Location/Address: 512 19th Avenue

Primary Noise Source: Highway and street cars

Measurement Results	
Percentiles	dBA
Leq	67.3
Lmax	76.3
Lmin	63.3
L2	72.2
L8	70.1
L25	67.7
L50	66.3
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
8:09 AM	Highway drone	66.9
8:10 AM	Added car pass	71.7
8:12 AM	Low	63.9

Comments (sound walls, height, etc.): None

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
19th Avenue	1		52		

Summary

File Name on Meter	LxT_Data.018.s
File Name on PC	LxT_0005427-20221118 080852-LxT_Data.018.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-18 08:08:52
Stop	2022-11-18 08:23:58
Duration	00:15:05.7
Run Time	00:15:05.7
Pause	00:00:00.0
Pre-Calibration	2022-11-18 07:35:26
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Exponential		
Overload	146.7 dB		
	A	**C**	**Z**
Under Range Peak	102.7	99.7	**104.7** dB
Under Range Limit	**39.8**	39.5	46.6 dB
Noise Floor	30.7	30.3	37.4 dB

	First	**Second**	**Third**
Instrument Identification			

Results

LA_{Seq}	67.3 dB		
LASE	96.9 dB		
EAS	540.434 µPa²h		
EAS8	17.185 mPa²h		
EAS40	85.925 mPa²h		
$LZ_{peak\ (max)}$	2022-11-18 08:11:37	100.3 dB	
LAS_{max}	2022-11-18 08:21:51	76.5 dB	
LAS_{min}	2022-11-18 08:10:18	63.3 dB	
SEA	-99.9 dB		

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s

LZ_{peak} > 135.0 dB	0	0.0 s
LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	74.5 dB
LAS_{eq}	67.3 dB
LCS_{eq} - LAS_{eq}	7.2 dB
LAI_{eq}	68.2 dB
LA_{eq}	67.3 dB
LAI_{eq} - LA_{eq}	0.9 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	67.3					
$L_{S(max)}$	76.5	2022/11/18 8:21:51				
$L_{S(min)}$	63.3	2022/11/18 8:10:18				
$L_{Peak(max)}$					100.3	2022/11/18 8:11:37

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	52.3	52.3 dB

Statistics

LAS 2.00	72.2 dB
LAS 8.00	70.1 dB
LAS 25.00	67.7 dB
LAS 50.00	66.3 dB
LAS 90.00	64.9 dB
LAS 99.00	63.9 dB

Project Name: San Mateo General Plan

Date: 11/18/2022

Project Number: 2023-039.01

Monitoring Personnel:

Monitoring Site #: Short Term - 8

Time Start: 8:41 AM End: 8:56 AM

Site Location/Address: Franklin Parkway (250 bus stop)

Primary Noise Source: Passing car

Measurement Results	
Percentiles	dBA
Leq	64.8
Lmax	82.6
Lmin	43.5
L2	72.0
L8	70.0
L25	64.7
L50	57.9
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
8:42 AM	Peak car passing	72.1
8:44 AM	Low	50.4
8:51 AM	Bus passing	82.1

Comments (sound walls, height, etc.): None

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
Franklin Parkway	3		114		

Summary

File Name on Meter	LxT_Data.019.s
File Name on PC	LxT_0005427-20221118 084144-LxT_Data.019.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-18 08:41:44
Stop	2022-11-18 08:56:56
Duration	00:15:12.0
Run Time	00:15:12.0
Pause	00:00:00.0
Pre-Calibration	2022-11-18 07:35:26
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Exponential		
Overload	146.7 dB		
	A	**C**	**Z**
Under Range Peak	102.7	99.7	**104.7** dB
Under Range Limit	**39.8**	39.5	46.6 dB
Noise Floor	30.7	30.3	37.4 dB

	First	**Second**	**Third**
Instrument Identification			

Results

LA_{Seq}	64.8 dB	
LASE	94.4 dB	
EAS	306.022 µPa²h	
EAS8	9.664 mPa²h	
EAS40	48.319 mPa²h	
$LZ_{peak\ (max)}$	2022-11-18 08:41:51	102.0 dB
LAS_{max}	2022-11-18 08:51:06	82.6 dB
LAS_{min}	2022-11-18 08:49:08	43.5 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s

LZ_{peak} > 135.0 dB	0	0.0 s
LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	70.4 dB
LAS_{eq}	64.8 dB
LCS_{eq} - LAS_{eq}	5.6 dB
LAI_{eq}	67.2 dB
LA_{eq}	64.8 dB
LAI_{eq} - LA_{eq}	2.4 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	64.8					
$L_{S(max)}$	82.6	2022/11/18 8:51:06				
$L_{S(min)}$	43.5	2022/11/18 8:49:08				
$L_{Peak(max)}$					102.0	2022/11/18 8:41:51

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	0.00 %
Projected Dose	-99.94	0.08 %
TWA (Projected)	-99.9	38.5 dB
TWA (t)	-99.9	13.6 dB
Lep (t)	49.8	49.8 dB

Statistics

LAS 2.00	72.0 dB
LAS 8.00	70.0 dB
LAS 25.00	64.7 dB
LAS 50.00	57.9 dB
LAS 90.00	46.4 dB
LAS 99.00	44.0 dB

Project Name: San Mateo General Plan

Date: 11/18/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 9

Time Start: 9:08 AM End: 9:23 AM

Site Location/Address: 506 Alameda de las Pulgas

Primary Noise Source: Passing car, airplanes, lawn mower in distance

Measurement Results	
Percentiles	dBA
Leq	63.5
Lmax	72.6
Lmin	47.0
L2	71.6
L8	68.0
L25	63.6
L50	59.9
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
9:13 AM	Car noise	73.1
9:14 AM	Ambient with mower	55.3
9:15 AM	Low ambient without mower	50.3
9:16 AM	Plane overhead	73.1

Comments (sound walls, height, etc.): No sound walls; gardeners with lawn mowers nearby (relocated 100 feet); airplane overhead

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
Alameda de las Pulgas	4		58		

Summary

File Name on Meter	LxT_Data.020.s
File Name on PC	LxT_0005427-20221118 090800-LxT_Data.020.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-18 09:08:00
Stop	2022-11-18 09:23:52
Duration	00:15:52.0
Run Time	00:15:52.0
Pause	00:00:00.0
Pre-Calibration	2022-11-18 07:35:26
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Slow		
Preamplifier	PRMLxT1		
Microphone Correction	Off		
Integration Method	Exponential		
Overload	146.7 dB		
	A	**C**	**Z**
Under Range Peak	102.7	99.7	**104.7** dB
Under Range Limit	**39.8**	39.5	46.6 dB
Noise Floor	30.7	30.3	37.4 dB

	First	**Second**	**Third**
Instrument Identification			

Results

LA_{Seq}	63.5 dB	
LASE	93.3 dB	
EAS	236.807 µPa²h	
EAS8	7.164 mPa²h	
EAS40	35.820 mPa²h	
$LZ_{peak\ (max)}$	2022-11-18 09:08:10	103.6 dB
LAS_{max}	2022-11-18 09:23:29	77.6 dB
LAS_{min}	2022-11-18 09:18:19	47.0 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s

LZ_{peak} > 135.0 dB	0	0.0 s
LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	70.3 dB
LAS_{eq}	63.5 dB
LCS_{eq} - LAS_{eq}	6.8 dB
LAI_{eq}	65.6 dB
LA_{eq}	63.5 dB
LAI_{eq} - LA_{eq}	2.1 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	63.5					
$L_{S(max)}$	77.6	2022/11/18 9:23:29				
$L_{S(min)}$	47.0	2022/11/18 9:18:19				
$L_{Peak(max)}$					103.6	2022/11/18 9:08:10

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2
Exchange Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results

Dose	-99.94	-99.94 %
Projected Dose	-99.94	-99.94 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	48.7	48.7 dB

Statistics

LAS 2.00	71.6 dB
LAS 8.00	68.0 dB
LAS 25.00	63.6 dB
LAS 50.00	59.9 dB
LAS 90.00	51.7 dB
LAS 99.00	48.1 dB

Project Name: San Mateo General Plan

Date: 11/18/2022

Project Number: 2023-039.01

Monitoring Personnel: RH

Monitoring Site #: Short Term - 10

Time Start: 9:53 AM End: 10:08 AM

Site Location/Address: 931 W. Hillsdale Boulevard

Primary Noise Source: Cars passing

Measurement Results	
Percentiles	dBA
Leq	61.6
Lmax	76.0
Lmin	37.5
L2	69.4
L8	66.3
L25	62.5
L50	57.6
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
9:55 AM	Low	43.2
9:56 AM	Bus passing	73.6
9:58 AM	Car passing	67.7
9:59 AM	Plan passing overhead	71.5
10:06 AM	New low	38.0

Comments (sound walls, height, etc.): No sound walls; car nearby, blocking noise a bit; trash truck nearby

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD
W. Hillsdale Boulevard	2		49		

Summary

File Name on Meter	LxT_Data.022.s
File Name on PC	LxT_0005427-20221118 095343-LxT_Data.022.ldbin
Serial Number	0005427
Model	SoundTrack LxT®
Firmware Version	2.404
User	
Location	
Job Description	
Note	

Measurement

Description	
Start	2022-11-18 09:53:43
Stop	2022-11-18 10:08:48
Duration	00:15:05.2
Run Time	00:15:05.2
Pause	00:00:00.0
Pre-Calibration	2022-11-18 07:35:26
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT1			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	146.7 dB			
	A		**C**	**Z**
Under Range Peak	102.7		99.7	**104.7** dB
Under Range Limit	**39.8**		39.5	46.6 dB
Noise Floor	30.7		30.3	37.4 dB
	First		**Second**	**Third**
Instrument Identification				

Results

LA_{Seq}	61.6 dB		
LASE	91.2 dB		
EAS	145.379 µPa²h		
EAS8	4.625 mPa²h		
EAS40	23.127 mPa²h		
$LZ_{peak\ (max)}$	2022-11-18 09:55:31	118.0 dB	
LAS_{max}	2022-11-18 10:03:02	76.0 dB	
LAS_{min}	2022-11-18 10:07:31	37.5 dB	
SEA	-99.9 dB		
	Exceedance Counts	**Duration**	
LAS > 85.0 dB	0	0.0 s	
LAS > 115.0 dB	0	0.0 s	
LZ_{peak} > 135.0 dB	0	0.0 s	

LZ_{peak} > 137.0 dB	0	0.0 s
LZ_{peak} > 140.0 dB	0	0.0 s

LCS_{eq}	71.8 dB
LAS_{eq}	61.6 dB
LCS_{eq} - LAS_{eq}	10.2 dB
LAI_{eq}	65.5 dB
LA_{eq}	61.6 dB
LAI_{eq} - LA_{eq}	3.9 dB

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	61.6					
$L_{S(max)}$	76.0	2022/11/18 10:03:02				
$L_{S(min)}$	37.5	2022/11/18 10:07:31				
$L_{Peak(max)}$					118.0	2022/11/18 9:55:31

Overload Count	0
Overload Duration	0.0 s

Dose Settings

Dose Name	OSHA-1	OSHA-2	
Exchange Rate	5	5	dB
Threshold	90	80	dB
Criterion Level	90	90	dB
Criterion Duration	8	8	h

Results

Dose	-99.94	-99.94	%
Projected Dose	-99.94	-99.94	%
TWA (Projected)	-99.9	-99.9	dB
TWA (t)	-99.9	-99.9	dB
Lep (t)	46.6	46.6	dB

Statistics

LAS 2.00	69.4 dB
LAS 8.00	66.3 dB
LAS 25.00	62.5 dB
LAS 50.00	57.6 dB
LAS 90.00	43.2 dB
LAS 99.00	38.3 dB

APPENDIX D2: TRAFFIC NOISE CALCULATIONS

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2023-039.01
Project Name: City of San Mateo 2040 General Plan

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Kittleson Transportation Consultants
Community Noise Descriptor: L_{dn}: x CNEL:

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Existing Conditions				Design		Vehicle Mix		Distance from Centerline of Roadway					
Roadway, Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Medium Trucks	Heavy Trucks	Ldn at 50 Feet	Distance to Contour 70 Ldn	65 Ldn	60 Ldn	55 Ldn	Calc Dist
Highway 101													
All of San Mateo	8	1.5	217,846	65	0	1.8%	0.7%	85.3	1,708	5,401	17,081	54,015	50
Interstate 280													
All of San Mateo	6	35	93,000	70	0	1.8%	0.7%	84.7	1,470	4,648	14,699	46,481	50
State Route 92													
Between City Limits & Mariners Island Blvd	6	1.5	106,668	65	0	1.8%	0.7%	80.4	549	1,737	5,493	17,372	50
Between Mariners Island Blvd & Hwy 101 Junction	6	30	156,688	65	0	1.8%	0.7%	84.7	1,462	4,623	14,619	46,230	50
Between Hwy 101 Junction & El Camino Real	4	35	112,404	65	0	1.8%	0.7%	81.1	648	2,050	6,482	20,497	50
Between El Camino Real & Alameda de las Pulgas	4	1	95,627	65	0	1.8%	0.7%	79.2	418	1,321	4,179	13,214	50
Between Alameda de las Pulgas & Hillsdale Blvd	4	1	79,482	65	0	1.8%	0.7%	78.4	347	1,098	3,473	10,983	50
Between Hillsdale Blvd & City Limits	4	1	69,948	65	0	1.8%	0.7%	77.9	306	967	3,057	9,666	50

1st Avenue													
East of B Street	2	0	2,815	35	0	1.8%	0.7%	**57.2**	-	-	-	82	50
West of B Street	2	0	1,890	35	0	1.8%	0.7%	**55.4**	-	-	-	55	50
2nd Avenue													
East of B Street	2	0	3,525	35	0	1.8%	0.7%	**58.1**	-	-	33	103	50
Between B Street & Ellsworth Ave	2	0	3,625	35	0	1.8%	0.7%	**58.3**	-	-	33	106	50
Between Ellsworth Ave & San Mateo Dr	2	0	4,923	35	0	1.8%	0.7%	**59.6**	-	-	45	144	50
Between San Mateo Dr & El Camino Real	2	0	7,698	35	0	1.8%	0.7%	**61.5**	-	-	71	225	50
3rd Avenue													
East of Humboldt St	2	0	18,685	35	0	1.8%	0.7%	**65.4**	-	55	172	545	50
Between Humboldt St & Delaware St	2	0	8,978	35	0	1.8%	0.7%	**62.2**	-	-	83	262	50
Between Delaware St & B Street	2	0	5,970	35	0	1.8%	0.7%	**60.4**	-	-	55	174	50
Between B Street & Ellsworth Ave	2	0	4,650	35	0	1.8%	0.7%	**59.3**	-	-	43	136	50
Between Ellsworth Ave & San Mateo Dr	2	0	4,895	35	0	1.8%	0.7%	**59.6**	-	-	45	143	50
Between San Mateo Dr & El Camino Real	2	0	5,353	35	0	1.8%	0.7%	**59.9**	-	-	49	156	50
4th Avenue													
East of Humboldt St	2	0	20,565	35	0	1.8%	0.7%	**65.8**	-	60	190	600	50
Between Humboldt St & Delaware St	2	0	12,408	35	0	1.8%	0.7%	**63.6**	-	36	115	362	50
Between Delaware St & B Street	2	0	7,348	35	0	1.8%	0.7%	**61.3**	-	-	68	214	50
Between B Street & San Mateo Dr	2	0	6,458	35	0	1.8%	0.7%	**60.8**	-	-	60	188	50
Between San Mateo Dr & El Camino Real	2	0	5,948	35	0	1.8%	0.7%	**60.4**	-	-	55	174	50
5th Avenue													
East of Delaware St	2	0	4,195	35	0	1.8%	0.7%	**58.9**	-	-	39	122	50
Between Delaware St & B Street	2	0	6,380	35	0	1.8%	0.7%	**60.7**	-	-	59	186	50
Between B Street & San Mateo Dr	2	0	7,018	35	0	1.8%	0.7%	**61.1**	-	-	65	205	50
Between San Mateo Dr & El Camino Real	2	0	7,115	35	0	1.8%	0.7%	**61.2**	-	-	66	208	50
9th Avenue													
East of Delaware St	2	0	4,665	35	0	1.8%	0.7%	**59.4**	-	-	43	136	50
Between Delaware St & B Street	2	0	7,923	35	0	1.8%	0.7%	**61.7**	-	-	73	231	50
Between B Street & El Camino	2	0	5,860	35	0	1.8%	0.7%	**60.3**	-	-	54	171	50
31st Avenue													
Between Delaware St & El Camino Real	2	0	5,698	30	0	1.8%	0.7%	**59.2**	-	-	42	133	50
West of El Camino Real	2	0	8,600	35	0	1.8%	0.7%	**62.0**	-	-	79	251	50
42nd Avenue													
West of El Camino Real	2	0	4,750	35	0	1.8%	0.7%	**59.4**	-	-	44	139	50
Alameda De Las Pulga													
Between Crystal Springs Rd & 20th Ave	4	6	19,180	40	0	1.8%	0.7%	**67.2**	-	83	262	828	50
Between 20th Ave & Hillsdale Blvd	4	6	11,735	40	0	1.8%	0.7%	**65.1**	-	51	160	506	50

Concar Drive													
East of Grant St	2	0	6,390	40	0	1.8%	0.7%	**62.0**	-	-	80	252	50
Between Grant St & Delaware St	4	0	10,175	40	0	1.8%	0.7%	**64.3**	-	-	135	427	50
Between Delaware St & SR 92 Ramps	4	0	14,735	40	0	1.8%	0.7%	**65.9**	-	62	196	619	50
West of SR 92 Ramps	2	0	2,115	40	0	1.8%	0.7%	**57.2**	-	-	-	83	50
Crystal Springs Road													
West of El Camino Real	2	0	5,920	35	0	1.8%	0.7%	**60.4**	-	-	55	173	50
B Street													
North of 1st Ave	2	0	4,285	35	0	1.8%	0.7%	**59.0**	-	-	40	125	50
Between 1st Ave & 2nd Ave	2	0	4,123	35	0	1.8%	0.7%	**58.8**	-	-	38	120	50
Between 2nd Ave & 3rd Ave	2	0	4,070	35	0	1.8%	0.7%	**58.8**	-	-	38	119	50
Between 3rd Ave & 4th Ave	2	0	3,948	35	0	1.8%	0.7%	**58.6**	-	-	36	115	50
Between 4th Ave & 5th Ave	2	0	3,275	35	0	1.8%	0.7%	**57.8**	-	-	-	96	50
Between 5th Ave & 9th Ave	2	0	4,228	35	0	1.8%	0.7%	**58.9**	-	-	39	123	50
South of 9th Ave	2	0	5,100	35	0	1.8%	0.7%	**59.7**	-	-	47	149	50
Baldwin Avenue													
East of El Camino Real	2	0	5,070	35	0	1.8%	0.7%	**59.7**	-	-	47	148	50
West of El Camino Real	2	0	3,730	35	0	1.8%	0.7%	**58.4**	-	-	34	109	50
Delaware Street													
Between Peninsula Ave & Poplar Ave	2	0	8,048	35	0	1.8%	0.7%	**61.7**	-	-	74	235	50
Between Poplar Ave & 3rd Ave	2	0	8,663	35	0	1.8%	0.7%	**62.0**	-	-	80	253	50
Between 3rd Ave & 4th Ave	2	0	11,430	35	0	1.8%	0.7%	**63.2**	-	33	106	334	50
Between 4th Ave & 5th Ave	2	0	9,210	35	0	1.8%	0.7%	**62.3**	-	-	85	269	50
Between 5th Ave & 9th Ave	2	0	7,535	35	0	1.8%	0.7%	**61.4**	-	-	70	220	50
Between 9th Ave & 16th Ave	2	0	7,935	35	0	1.8%	0.7%	**61.7**	-	-	73	232	50
Between 16th Ave & Concar Dr	2	0	15,040	40	0	1.8%	0.7%	**65.7**	-	59	188	593	50
Between Concar Dr & 19th Ave	4	0	15,903	40	0	1.8%	0.7%	**66.3**	-	67	211	668	50
Between 19th Ave & Saratoga Dr	4	0	15,398	40	0	1.8%	0.7%	**66.1**	-	65	204	646	50
Between Saratoga Dr & 25th Ave	2	0	12,693	35	0	1.8%	0.7%	**63.7**	-	37	117	370	50
Between 25th Ave & 28th Ave	4	0	5,950	40	0	1.8%	0.7%	**62.0**	-	-	79	250	50
Between 28th Ave & 31st Ave	2	0	5,188	35	0	1.8%	0.7%	**59.8**	-	-	48	151	50
South of 31st Ave	2	0	7,160	35	0	1.8%	0.7%	**61.2**	-	-	66	209	50
El Camino Real													
Between Peninsula Ave & Poplar Ave	4	0	23,985	45	0	1.8%	0.7%	**69.2**	-	133	419	1,327	50
Between Poplar Ave & Tilton Ave	4	0	27,448	45	0	1.8%	0.7%	**69.8**	48	152	480	1,518	50
Between Tilton Ave & Crystal Springs Rd	4	0	28,750	45	0	1.8%	0.7%	**70.0**	50	159	503	1,590	50

Between Crystal Springs Rd & 2nd Ave	4	0	26,540	45	0	1.8%	0.7%	**69.7**	46	147	464	1,468	50
Between 2nd Ave & 3rd Ave	6	6	31,933	45	0	1.8%	0.7%	**71.4**	69	219	694	2,194	50
Between 3rd Ave & 4th Ave	6	6	32,695	45	0	1.8%	0.7%	**71.5**	71	225	710	2,246	50
Between 4th Ave & Barneson Ave	6	6	33,883	45	0	1.8%	0.7%	**71.7**	74	233	736	2,328	50
Between Barneson Ave & 17th Ave	6	6	34,083	45	0	1.8%	0.7%	**71.7**	74	234	741	2,342	50
Between 17th Ave & 20th Ave	6	6	39,148	45	0	1.8%	0.7%	**72.3**	85	269	851	2,690	50
Between 20th Ave & 25th Ave	6	6	30,245	45	0	1.8%	0.7%	**71.2**	66	208	657	2,078	50
Between 25th Ave & 28th Ave	6	6	31,423	45	0	1.8%	0.7%	**71.4**	68	216	683	2,159	50
Between 28th Ave & 31st Ave	6	8	31,030	45	0	1.8%	0.7%	**71.4**	69	218	691	2,185	50
Between 31st Ave & Hillsdale Blvd Ramps	6	10	15,570	45	0	1.8%	0.7%	**68.5**	-	113	356	1,125	50
Between Hillsdale Blvd Ramps & 41st Ave	6	0	16,180	45	0	1.8%	0.7%	**68.2**	-	104	330	1,044	50
Between 41st Ave & 42nd Ave	6	0	26,178	45	0	1.8%	0.7%	**70.3**	-	169	534	1,689	50
Ellsworth Avenue													
North of 2nd Ave	2	0	5,055	35	0	1.8%	0.7%	**59.7**	-	-	47	148	50
Between 2nd Ave & 3rd Ave	2	0	3,783	35	0	1.8%	0.7%	**58.4**	-	-	35	110	50
South of 3rd Ave	2	0	3,025	35	0	1.8%	0.7%	**57.5**	-	-	-	88	50
Fashion Island Boulevard/Bridgepointe Parkway													
Between Chess Dr & Baker Way	4	6	11,320	30	0	1.8%	0.7%	**62.6**	-	-	91	289	50
Between Baker Way & Mariner's Island	6	6	14,590	35	0	1.8%	0.7%	**65.5**	-	-	178	563	50
Between Mariner's Island & Norfolk St	4	6	16,203	35	0	1.8%	0.7%	**65.1**	-	52	164	517	50
Between Norfolk St & Hwy 101 Ramps	2	6	18,260	35	0	1.8%	0.7%	**65.3**	-	54	170	538	50
Franklin Parkway													
Between Saratoga Dr & Delaware St	4	6	5,508	35	0	1.8%	0.7%	**60.5**	-	-	56	176	50
Hillsdale Boulevard													
East of Norfolk St	6	6	35,120	45	0	1.8%	0.7%	**71.8**	76	241	763	2,413	50
Between Norfolk St & Hwy 101 Ramps	6	0	41,595	35	0	1.8%	0.7%	**69.8**	-	151	477	1,507	50
Between 101 Ramps & Saratoga Dr	6	6	26,695	45	0	1.8%	0.7%	**70.6**	-	183	580	1,834	50
Between Saratoga Dr & El Camino Real	4	0	19,630	45	0	1.8%	0.7%	**68.4**	-	109	343	1,086	50
Between El Camino Real & Alameda de las Pulga	4	0	9,988	40	0	1.8%	0.7%	**64.2**	-	-	133	419	50
Between Alameda de las Pulga & Campus Dr	2	0	10,978	30	0	1.8%	0.7%	**62.1**	-	-	81	256	50
Humboldt Street													
Between Peninsula Ave & Poplar Ave	2	0	8,378	35	0	1.8%	0.7%	**61.9**	-	-	77	245	50
Between Poplar Ave & 3rd Ave	2	0	8,138	35	0	1.8%	0.7%	**61.8**	-	-	75	238	50
Between 3rd Ave & 4th Ave	2	0	6,698	35	0	1.8%	0.7%	**60.9**	-	-	62	196	50
South of 4th Ave	2	0	5,465	35	0	1.8%	0.7%	**60.0**	-	-	50	160	50

Mariner's Island Boulevard													
Between 3rd Ave & Fashion Island Blvd	4	8	8,885	35	0	1.8%	0.7%	**62.6**	-	-	91	287	50
South of Fashion Island Blvd	4	8	18,335	35	0	1.8%	0.7%	**65.7**	-	59	187	592	50
Norfolk Street													
North of 3rd Avenue	2	0	7,640	35	0	1.8%	0.7%	**61.5**	-	-	71	223	50
Between 3rd Ave & Kehoe Ave	2	0	10,615	35	0	1.8%	0.7%	**62.9**	-	-	98	310	50
Between Kehoe Ave & Fashion Island	2	0	10,250	35	0	1.8%	0.7%	**62.8**	-	-	95	299	50
Between Fashion Island & Hillsdale Blvd	4	0	9,773	35	0	1.8%	0.7%	**62.8**	-	-	96	304	50
Peninsula Avenue													
Between Bayshore Blvd & Humboldt St	4	0	21,120	40	0	1.8%	0.7%	**67.5**	-	89	280	887	50
Between Humboldt St & Delaware St	3	0	15,928	35	0	1.8%	0.7%	**64.8**	-	48	150	475	50
Between Delaware St & San Mateo Dr	3	0	13,915	35	0	1.8%	0.7%	**64.2**	-	42	131	415	50
Between San Mateo Dr & El Camino Real	3	0	5,720	35	0	1.8%	0.7%	**60.3**	-	-	54	171	50
Poplar Avenue													
Between Hwy 101 & Humboldt St	2	0	10,135	30	0	1.8%	0.7%	**61.7**	-	-	75	236	50
Between Humboldt St & Delaware St	2	0	7,823	30	0	1.8%	0.7%	**60.6**	-	-	58	182	50
Between Delaware St & San Mateo Dr	2	0	5,978	30	0	1.8%	0.7%	**59.5**	-	-	44	139	50
Between San Mateo Dr & El Camino Real	2	0	6,865	30	0	1.8%	0.7%	**60.1**	-	-	51	160	50
San Mateo Drive													
Between Peninsula Ave & Poplar Ave	3	0	12,250	40	0	1.8%	0.7%	**64.9**	-	49	156	494	50
Between Poplar Ave & 2nd Ave	2	0	10,583	35	0	1.8%	0.7%	**62.9**	-	-	98	309	50
Between 2nd Ave & 3rd Ave	2	0	5,273	35	0	1.8%	0.7%	**59.9**	-	-	49	154	50
Between 3rd Ave & 4th Ave	2	0	4,700	35	0	1.8%	0.7%	**59.4**	-	-	43	137	50
Between 4th Ave & 5th Ave	2	0	3,693	35	0	1.8%	0.7%	**58.3**	-	-	34	108	50
Saratoga Drive													
Between Delaware St & Franklin Pkwy	4	6	9,315	40	0	1.8%	0.7%	**64.1**	-	-	127	402	50
Between Franklin Pkwy & Hillsdale Blvd	4	8	12,065	35	0	1.8%	0.7%	**63.9**	-	-	123	389	50
Between Hillsdale Blvd & Santa Clara Way	4	6	7,140	30	0	1.8%	0.7%	**60.6**	-	-	58	182	50
Tilton Avenue													
East of El Camino Real	2	0	4,650	35	0	1.8%	0.7%	**59.3**	-	-	43	136	50

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2023-039.01
Project Name: City of San Mateo 2040 General Plan

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Kittleson Transportation Consultants
Community Noise Descriptor: L_{dn}: x CNEL:

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Existing + General Plan Conditions				Design		Vehicle Mix		Distance from Centerline of Roadway					
		Median	ADT	Speed	Alpha	Medium	Heavy	Ldn at	Distance to Contour				Calc
Roadway, Segment	Lanes	Width	Volume	(mph)	Factor	Trucks	Trucks	50 Feet	70 Ldn	65 Ldn	60 Ldn	55 Ldn	Dist
Highway 101													
All of San Mateo	8	1.5	250,873	65	0	1.8%	0.7%	**85.9**	1,967	6,220	19,671	62,204	50
Interstate 280													
All of San Mateo	6	35	93,000	70	0	1.8%	0.7%	**84.7**	1,470	4,648	14,699	46,481	50
State Route 92													
Between City Limits & Mariners Island Blvd	6	1.5	140,538	65	0	1.8%	0.7%	**81.6**	724	2,289	7,238	22,888	50
Between Mariners Island Blvd & Hwy 101 Junction	6	30	186,526	65	0	1.8%	0.7%	**85.4**	1,740	5,503	17,403	55,034	50
Between Hwy 101 Junction & El Camino Real	4	35	131,676	65	0	1.8%	0.7%	**81.8**	759	2,401	7,593	24,011	50
Between El Camino Real & Alameda de las Pulgas	4	1	121,682	65	0	1.8%	0.7%	**80.3**	532	1,681	5,317	16,815	50
Between Alameda de las Pulgas & Hillsdale Blvd	4	1	106,559	65	0	1.8%	0.7%	**79.7**	466	1,473	4,657	14,725	50
Between Hillsdale Blvd & City Limits	4	1	94,979	65	0	1.8%	0.7%	**79.2**	415	1,312	4,150	13,125	50

1st Avenue													
East of B Street	2	0	7,100	35	0	1.8%	0.7%	**61.2**	-	-	66	207	50
West of B Street	2	0	7,110	35	0	1.8%	0.7%	**61.2**	-	-	66	208	50
2nd Avenue													
East of B Street	2	0	7,150	35	0	1.8%	0.7%	**61.2**	-	-	66	209	50
Between B Street & Ellsworth Ave	2	0	5,390	35	0	1.8%	0.7%	**60.0**	-	-	50	157	50
Between Ellsworth Ave & San Mateo Dr	2	0	6,150	35	0	1.8%	0.7%	**60.6**	-	-	57	180	50
Between San Mateo Dr & El Camino Real	2	0	8,783	35	0	1.8%	0.7%	**62.1**	-	-	81	256	50
3rd Avenue													
East of Humboldt St	2	0	20,650	35	0	1.8%	0.7%	**65.8**	-	60	191	603	50
Between Humboldt St & Delaware St	2	0	10,276	35	0	1.8%	0.7%	**62.8**	-	-	95	300	50
Between Delaware St & B Street	2	0	10,585	35	0	1.8%	0.7%	**62.9**	-	-	98	309	50
Between B Street & Ellsworth Ave	2	0	8,035	35	0	1.8%	0.7%	**61.7**	-	-	74	235	50
Between Ellsworth Ave & San Mateo Dr	2	0	8,515	35	0	1.8%	0.7%	**62.0**	-	-	79	249	50
Between San Mateo Dr & El Camino Real	2	0	8,630	35	0	1.8%	0.7%	**62.0**	-	-	80	252	50
4th Avenue													
East of Humboldt St	2	0	21,960	35	0	1.8%	0.7%	**66.1**	-	64	203	641	50
Between Humboldt St & Delaware St	2	0	12,658	35	0	1.8%	0.7%	**63.7**	-	37	117	369	50
Between Delaware St & B Street	2	0	11,555	35	0	1.8%	0.7%	**63.3**	-	34	107	337	50
Between B Street & San Mateo Dr	2	0	12,570	35	0	1.8%	0.7%	**63.7**	-	37	116	367	50
Between San Mateo Dr & El Camino Real	2	0	13,915	35	0	1.8%	0.7%	**64.1**	-	41	128	406	50
5th Avenue													
East of Delaware St	2	0	10,210	35	0	1.8%	0.7%	**62.8**	-	-	94	298	50
Between Delaware St & B Street	2	0	9,653	35	0	1.8%	0.7%	**62.5**	-	-	89	282	50
Between B Street & San Mateo Dr	2	0	11,048	35	0	1.8%	0.7%	**63.1**	-	32	102	322	50
Between San Mateo Dr & El Camino Real	2	0	8,775	35	0	1.8%	0.7%	**62.1**	-	-	81	256	50
9th Avenue													
East of Delaware St	2	0	9,260	35	0	1.8%	0.7%	**62.3**	-	-	85	270	50
Between Delaware St & B Street	2	0	10,143	35	0	1.8%	0.7%	**62.7**	-	-	94	296	50
Between B Street & El Camino Real	2	0	8,200	35	0	1.8%	0.7%	**61.8**	-	-	76	239	50
31st Avenue													
Between Delaware St & El Camino Real	2	0	10,258	30	0	1.8%	0.7%	**61.8**	-	-	76	239	50
West of El Camino Real	2	0	10,240	35	0	1.8%	0.7%	**62.8**	-	-	95	299	50
42nd Avenue													
West of El Camino Real	2	0	7,740	35	0	1.8%	0.7%	**61.5**	-	-	71	226	50
Alameda De Las Pulga													
Between Crystal Springs Rd & 20th Ave	4	6	23,175	40	0	1.8%	0.7%	**68.0**	-	100	316	1,000	50
Between 20th Ave & Hillsdale Blvd	4	6	16,505	40	0	1.8%	0.7%	**66.5**	-	71	225	712	50

Concar Drive													
East of Grant St	2	0	10,180	40	0	1.8%	0.7%	**64.0**	-	40	127	402	50
Between Grant St & Delaware St	4	0	12,860	40	0	1.8%	0.7%	**65.3**	-	54	171	540	50
Between Delaware St & SR 92 Ramps	4	0	15,175	40	0	1.8%	0.7%	**66.1**	-	64	201	637	50
West of SR 92 Ramps	2	0	5,050	40	0	1.8%	0.7%	**61.0**	-	-	63	199	50
Crystal Springs Road													
West of El Camino Real	2	0	11,740	35	0	1.8%	0.7%	**63.4**	-	34	108	343	50
B Street													
North of 1st Ave	2	0	8,005	35	0	1.8%	0.7%	**61.7**	-	-	74	234	50
Between 1st Ave & 2nd Ave	2	0	8,838	35	0	1.8%	0.7%	**62.1**	-	-	82	258	50
Between 2nd Ave & 3rd Ave	2	0	7,625	35	0	1.8%	0.7%	**61.5**	-	-	70	223	50
Between 3rd Ave & 4th Ave	2	0	6,835	35	0	1.8%	0.7%	**61.0**	-	-	63	200	50
Between 4th Ave & 5th Ave	2	0	6,243	35	0	1.8%	0.7%	**60.6**	-	-	58	182	50
Between 5th Ave & 9th Ave	2	0	8,948	35	0	1.8%	0.7%	**62.2**	-	-	83	261	50
South of 9th Ave	2	0	10,465	35	0	1.8%	0.7%	**62.9**	-	-	97	305	50
Baldwin Avenue													
East of El Camino Real	2	0	10,740	35	0	1.8%	0.7%	**63.0**	-	-	99	313	50
West of El Camino Real	2	0	3,895	35	0	1.8%	0.7%	**58.6**	-	-	36	114	50
Delaware Street													
Between Peninsula Ave & Poplar Ave	2	0	11,208	35	0	1.8%	0.7%	**63.2**	-	33	103	327	50
Between Poplar Ave & 3rd Ave	2	0	10,130	35	0	1.8%	0.7%	**62.7**	-	-	94	296	50
Between 3rd Ave & 4th Ave	2	0	12,075	35	0	1.8%	0.7%	**63.5**	-	35	111	352	50
Between 4th Ave & 5th Ave	2	0	10,548	35	0	1.8%	0.7%	**62.9**	-	-	97	308	50
Between 5th Ave & 9th Ave	2	0	8,305	35	0	1.8%	0.7%	**61.9**	-	-	77	242	50
Between 9th Ave & 16th Ave	2	0	8,525	35	0	1.8%	0.7%	**62.0**	-	-	79	249	50
Between 16th Ave & Concar Dr	2	0	17,675	40	0	1.8%	0.7%	**66.4**	-	70	220	697	50
Between Concar Dr & 19th Ave	4	0	18,748	40	0	1.8%	0.7%	**67.0**	-	79	249	787	50
Between 19th Ave & Saratoga Dr	4	0	17,610	40	0	1.8%	0.7%	**66.7**	-	74	234	739	50
Between Saratoga Dr & 25th Ave	2	0	16,833	35	0	1.8%	0.7%	**64.9**	-	49	155	491	50
Between 25th Ave & 28th Ave	4	0	8,253	40	0	1.8%	0.7%	**63.4**	-	-	110	346	50
Between 28th Ave & 31st Ave	2	0	9,865	35	0	1.8%	0.7%	**62.6**	-	-	91	288	50
South of 31st Ave	2	0	9,075	35	0	1.8%	0.7%	**62.2**	-	-	84	265	50
El Camino Real													
Between Peninsula Ave & Poplar Ave	4	0	33,258	45	0	1.8%	0.7%	**70.7**	58	184	582	1,839	50
Between Poplar Ave & Tilton Ave	4	0	32,358	45	0	1.8%	0.7%	**70.5**	57	179	566	1,790	50
Between Tilton Ave & Crystal Springs Rd	4	0	33,588	45	0	1.8%	0.7%	**70.7**	59	186	587	1,858	50

Between Crystal Springs Rd & 2nd Ave	4	0	29,163	45	0	1.8%	0.7%	**70.1**	51	161	510	1,613	50
Between 2nd Ave & 3rd Ave	6	6	34,553	45	0	1.8%	0.7%	**71.8**	75	237	751	2,374	50
Between 3rd Ave & 4th Ave	6	6	35,853	45	0	1.8%	0.7%	**71.9**	78	246	779	2,463	50
Between 4th Ave & Barneson Ave	6	6	36,473	45	0	1.8%	0.7%	**72.0**	79	251	792	2,506	50
Between Barneson Ave & 17th Ave	6	6	40,108	45	0	1.8%	0.7%	**72.4**	87	276	871	2,756	50
Between 17th Ave & 20th Ave	6	6	50,823	45	0	1.8%	0.7%	**73.4**	110	349	1,104	3,492	50
Between 20th Ave & 25th Ave	6	6	44,425	45	0	1.8%	0.7%	**72.9**	97	305	965	3,052	50
Between 25th Ave & 28th Ave	6	6	45,010	45	0	1.8%	0.7%	**72.9**	98	309	978	3,093	50
Between 28th Ave & 31st Ave	6	8	42,475	45	0	1.8%	0.7%	**72.8**	95	299	946	2,990	50
Between 31st Ave & Hillsdale Blvd Ramps	6	10	19,045	45	0	1.8%	0.7%	**69.4**	-	138	435	1,377	50
Between Hillsdale Blvd Ramps & 41st Ave	6	0	18,873	45	0	1.8%	0.7%	**68.9**	-	122	385	1,218	50
Between 41st Ave & 42nd Ave	6	0	30,428	45	0	1.8%	0.7%	**70.9**	62	196	621	1,963	50
Ellsworth Avenue													
North of 2nd Ave	2	0	10,280	35	0	1.8%	0.7%	**62.8**	-	-	95	300	50
Between 2nd Ave & 3rd Ave	2	0	8,343	35	0	1.8%	0.7%	**61.9**	-	-	77	244	50
South of 3rd Ave	2	0	6,985	35	0	1.8%	0.7%	**61.1**	-	-	64	204	50
Fashion Island Boulevard/Bridgepointe Parkway													
Between Chess Dr & Baker Way	4	6	14,165	30	0	1.8%	0.7%	**63.6**	-	-	114	361	50
Between Baker Way & Mariner's Island	6	6	22,023	35	0	1.8%	0.7%	**67.3**	-	85	269	850	50
Between Mariner's Island & Norfolk St	4	6	23,328	35	0	1.8%	0.7%	**66.7**	-	74	236	745	50
Between Norfolk St & Hwy 101 Ramps	2	6	21,120	35	0	1.8%	0.7%	**65.9**	-	62	197	622	50
Franklin Parkway													
Between Saratoga Dr & Delaware St	4	6	14,665	35	0	1.8%	0.7%	**64.7**	-	-	148	468	50
Hillsdale Boulevard													
East of Norfolk St	6	6	42,915	45	0	1.8%	0.7%	**72.7**	93	295	932	2,949	50
Between Norfolk St & Hwy 101 Ramps	6	0	46,988	35	0	1.8%	0.7%	**70.3**	-	170	538	1,703	50
Between 101 Ramps & Saratoga Dr	6	6	30,728	45	0	1.8%	0.7%	**71.3**	67	211	668	2,111	50
Between Saratoga Dr & El Camino Real	4	0	20,555	45	0	1.8%	0.7%	**68.6**	-	114	359	1,137	50
Between El Camino Real & Alameda de las Pulga	4	0	11,853	40	0	1.8%	0.7%	**65.0**	-	50	157	498	50
Between Alameda de las Pulga & Campus Dr	2	0	15,185	30	0	1.8%	0.7%	**63.5**	-	35	112	354	50
Humboldt Street													
Between Peninsula Ave & Poplar Ave	2	0	11,165	35	0	1.8%	0.7%	**63.1**	-	33	103	326	50
Between Poplar Ave & 3rd Ave	2	0	11,213	35	0	1.8%	0.7%	**63.2**	-	33	103	327	50
Between 3rd Ave & 4th Ave	2	0	7,640	35	0	1.8%	0.7%	**61.5**	-	-	71	223	50
South of 4th Ave	2	0	7,785	35	0	1.8%	0.7%	**61.6**	-	-	72	227	50

Mariner's Island Boulevard													
Between 3rd Ave & Fashion Island Blvd	4	8	14,380	35	0	1.8%	0.7%	**64.7**	-	-	147	464	50
South of Fashion Island Blvd	4	8	19,655	35	0	1.8%	0.7%	**66.0**	-	63	201	634	50
Norfolk Street													
North of 3rd Avenue	2	0	10,725	35	0	1.8%	0.7%	**63.0**	-	-	99	313	50
Between 3rd Ave & Kehoe Ave	2	0	14,303	35	0	1.8%	0.7%	**64.2**	-	42	132	417	50
Between Kehoe Ave & Fashion Island	2	0	14,243	35	0	1.8%	0.7%	**64.2**	-	42	131	416	50
Between Fashion Island & Hillsdale Blvd	4	0	11,950	35	0	1.8%	0.7%	**63.7**	-	-	117	371	50
Peninsula Avenue													
Between Bayshore Blvd & Humboldt St	4	0	24,820	40	0	1.8%	0.7%	**68.2**	-	104	330	1,042	50
Between Humboldt St & Delaware St	3	0	17,910	35	0	1.8%	0.7%	**65.3**	-	53	169	535	50
Between Delaware St & San Mateo Dr	3	0	14,708	35	0	1.8%	0.7%	**64.4**	-	44	139	439	50
Between San Mateo Dr & El Camino Real	3	0	6,853	35	0	1.8%	0.7%	**61.1**	-	-	65	205	50
Poplar Avenue													
Between Hwy 101 & Humboldt St	2	0	10,135	30	0	1.8%	0.7%	**61.7**	-	-	75	236	50
Between Humboldt St & Delaware St	2	0	8,003	30	0	1.8%	0.7%	**60.7**	-	-	59	187	50
Between Delaware St & San Mateo Dr	2	0	7,645	30	0	1.8%	0.7%	**60.5**	-	-	56	178	50
Between San Mateo Dr & El Camino Real	2	0	12,310	30	0	1.8%	0.7%	**62.6**	-	-	91	287	50
San Mateo Drive													
Between Peninsula Ave & Poplar Ave	3	0	12,308	40	0	1.8%	0.7%	**65.0**	-	50	157	497	50
Between Poplar Ave & 2nd Ave	2	0	12,330	35	0	1.8%	0.7%	**63.6**	-	36	114	360	50
Between 2nd Ave & 3rd Ave	2	0	9,348	35	0	1.8%	0.7%	**62.4**	-	-	86	273	50
Between 3rd Ave & 4th Ave	2	0	8,680	35	0	1.8%	0.7%	**62.0**	-	-	80	253	50
Between 4th Ave & 5th Ave	2	0	5,170	35	0	1.8%	0.7%	**59.8**	-	-	48	151	50
Saratoga Drive													
Between Delaware St & Franklin Pkwy	4	6	15,045	40	0	1.8%	0.7%	**66.1**	-	65	205	649	50
Between Franklin Pkwy & Hillsdale Blvd	4	8	18,053	35	0	1.8%	0.7%	**65.7**	-	58	184	583	50
Between Hillsdale Blvd & Santa Clara Way	4	6	7,680	30	0	1.8%	0.7%	**60.9**	-	-	62	196	50
Tilton Avenue													
East of El Camino Real	2	0	7,175	35	0	1.8%	0.7%	**61.2**	-	-	66	209	50

APPENDIX E

TRANSPORTATION DATA

APPENDIX E1: VEHICLE MILES TRAVELED (VMT)

Table A: San Mateo General Plan - VMT and ADT Summary
City of San Mateo General Plan

Region/ Scenario	Households	Population	Employment	Employed Residents	ADT/ TripGen	VMT_HH	VMT_EMP	Total VMT	VMT/Capita	VMT/Job	Difference to Existing VMT/Cap	Difference to Existing VMT/Emp	%Difference to Existing VMT/Cap	%Difference to Existing VMT/Emp
2020 Baseline														
City	41,057	107,774	62,439	59,793	414,402	1,721,158	1,026,899	4,049,429	16.0	16.4	-0.4	-0.9	-2%	-5%
San Mateo County	271,112	778,698	389,074	407,306	2,806,578	12,743,267	6,729,819	27,522,828	16.4	17.3				
Bay Area	2,766,416	7,736,524	3,854,089	3,909,153	25,029,400	125,903,138	65,943,226	358,936,547	16.3	17.1				
2040 PREFERRED														
City	61,139	159,117	79,353	85,944	541,077	2,328,406	1,213,574	5,420,137	14.6	15.3	-1.7	-2.0	-11%	-12%
San Mateo County	330,085	936,094	489,108	469,669	3,283,068	14,349,301	8,798,838	33,711,942	15.3	18.0				
Bay Area	3,430,821	9,669,255	4,728,260	4,713,728	29,414,319	157,406,464	81,873,205	456,858,804	16.3	17.3				

Source: San Mateo City Model, Kittelson & Assoc, Inc., 2023
Notes: The Region for VMT Impact comparison is defined as San Mateo County

APPENDIX E2: AVERAGE DAILY TRAFFIC (ADT) VOLUMES

San Mateo GP Intersection Turning Volumes - ADT

ADT - 2020 Counts 2020 Counts - ADT - 12 movement form

	Intersection		Southbound			Westbound			Northbound			Eastbound			
	N/S Street	E/W Street	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	Sum
1	Mariners Island Blvd	3rd Ave	145	260	60	90	6590	380	220	200	3350	4575	7625	195	**23690**
2	Baker Way	Fashion Island Blvd	325	1250	70	65	2770	3180	455	270	2195	3910	4780	535	**19805**
3	Mariners Island Blvd	Fashion Island Blvd	1365	2760	555	185	3770	1495	4870	2880	2160	4170	3790	1040	**29040**
4	Norfolk St	3rd Ave	765	1495	1550	620	9440	685	780	1190	4840	5595	10150	2020	**39130**
5	Norfolk St	Fashion Island Blvd	4420	2180	2250	2390	4410	1060	1520	1815	2120	1620	4480	1565	**29830**
6	Norfolk St	Hillsdale Blvd	2770	1245	595	775	15455	810	825	1285	3305	2735	16660	2560	**49020**
7	Humboldt St	Peninsula Ave	115	1410	890	1435	7320	1895	2365	415	675	1400	7440	55	**25415**
8	Humboldt St	Poplar Ave	830	1935	2000	765	3550	825	160	2545	680	600	2835	520	**17245**
9	Humboldt St	3rd Ave	390	2660	0	5810	9435	3440	0	670	45	0	0	0	**22450**
10	Humboldt St	4th Ave	0	2090	3755	0	0	0	2760	515	0	100	14050	220	**23490**
11	Grant St	Concar Dr	445	1855	300	170	1605	1345	900	1350	2660	1645	2070	690	**15035**
12	US Highway 101 SB Ram	Fashion Island Blvd	1455	320	3550	0	4840	3460	0	0	0	1755	6055	0	**21435**
13	US Highway 101 NB Rar	Hillsdale Blvd	0	0	0	0	17630	0	11405	0	3985	0	10670	0	**43690**
14	US Highway 101 SB Ram	Hillsdale Blvd	0	3100	2275	0	12295	0	0	0	0	2490	11730	0	**31890**
15	Delaware St	Peninsula Ave	130	1090	495	280	5980	1060	2175	865	1465	1285	5875	115	**20815**
16	Delaware St	Poplar Ave	335	2185	990	1475	1825	1300	670	2960	465	155	370	210	**12940**
17	Delaware St	3rd Ave	205	4890	0	1020	4385	2680	0	3090	320	900	0	385	**17875**
18	Delaware St	4th Ave	670	4520	2555	0	0	0	1345	2945	315	195	6545	290	**19380**
19	Delaware St	5th Ave	1460	2825	95	370	1400	100	125	3750	390	405	2105	600	**13625**
20	Delaware St	9th Ave	760	2830	90	155	1580	395	305	3120	675	610	2140	520	**13180**
21	Delaware St	Concar Dr	1640	4255	1365	1250	3330	1460	1240	4490	1950	2980	2590	2040	**28590**
22	SR 92 WB Ramps	Concar Dr	0	0	0	0	355	6935	7380	0	515	975	270	0	**16430**
23	Grant St	19th Ave	0	1440	3125	3440	0	2160	2000	1410	0	340	2065	790	**16770**
24	Delaware St	19th Ave	0	4610	3810	0	0	0	3155	4655	0	1510	3480	2355	**23575**
25	Delaware St	Saratoga Dr	10	4155	3005	3720	0	1155	1380	5970	5	5	0	5	**19410**
26	Delaware St	25th Ave	4810	480	0	0	0	0	0	1075	750	1380	0	6350	**14845**
27	Saratoga Dr	Franklin Pkwy	380	2535	1265	1035	1365	2835	870	3560	1150	1465	1090	595	**18145**
28	Saratoga Dr	Hillsdale Blvd	2170	1375	2835	3625	6520	1580	2945	890	350	0	9370	820	**32480**
29	B St	1st Ave	150	1405	545	515	640	200	405	1610	320	210	510	60	**6570**
30	B St	2nd Ave	190	1360	195	345	1395	180	370	1690	375	325	1040	315	**7780**
31	B St	3rd Ave	270	1305	195	805	2715	915	210	985	170	290	905	280	**9045**
32	B St	4th Ave	780	1075	610	145	990	85	495	1120	155	335	4355	290	**10435**
33	B St	5th Ave	285	1055	155	205	2310	230	640	1315	350	545	2860	270	**10220**
34	Ellsworth Ave	2nd Ave	740	2060	200	425	1280	165	205	875	110	415	1335	755	**8565**
35	Ellsworth Ave	3rd Ave	355	1840	140	540	2395	150	100	585	65	285	1345	275	**8075**
36	San Mateo Dr	Peninsula Ave	370	4505	1790	2630	2815	900	2125	4155	100	250	2720	240	**22600**
37	San Mateo Dr	Poplar Ave	350	4465	970	585	2420	915	665	5610	280	440	3040	485	**20225**
38	San Mateo Dr	2nd Ave	1265	2500	460	620	1530	170	365	1735	130	485	2065	2210	**13535**
39	San Mateo Dr	3rd Ave	500	2315	290	435	2140	285	225	1205	140	550	1695	415	**10195**
40	San Mateo Dr	4th Ave	580	1480	920	240	1490	220	250	1045	70	430	2890	415	**10030**
41	San Mateo Dr	5th Ave	900	0	1180	915	2265	0	0	0	0	0	3055	895	**9210**
42	El Camino Real	Peninsula Ave	5	9265	735	565	625	1375	1575	8460	1610	790	70	30	**25105**
43	El Camino Real	Poplar Ave	80	11120	1130	715	540	1855	1615	11645	565	505	860	205	**30835**
44	El Camino Real	Tilton Ave	450	12140	260	395	790	1080	1170	13605	200	455	955	740	**32240**
45	El Camino Real	Crystal Springs Rd	1965	13015	0	0	0	0	0	11220	750	555	0	2650	**30155**
46	El Camino Real	2nd Ave	0	12165	775	1045	0	2300	3590	13555	0	0	0	0	**33430**
47	El Camino Real	3rd Ave	1060	14265	370	605	1045	1105	910	14430	895	1630	1230	1525	**39070**
48	El Camino Real	4th Ave	320	13660	1510	690	490	1070	1330	15390	310	350	930	585	**36635**
49	El Camino Real	Barneson Ave	1105	15055	0	0	0	0	0	17790	515	610	0	1705	**36780**
50	El Camino Real	17th Ave	480	14705	675	365	760	2155	2340	17225	2630	3045	905	745	**46030**
51	El Camino Real	20th Ave	2070	12900	1480	1305	645	675	230	14035	1100	1150	570	4405	**40565**
52	El Camino Real	25th Ave	530	12325	1685	1330	1295	3240	3635	12915	605	390	1670	1615	**41235**
53	El Camino Real	28th Ave	925	13220	255	45	0	15	10	13765	1280	1330	0	1525	**32370**
54	El Camino Real	31st Ave	1965	13755	940	4865	725	575	0	9145	815	1925	1400	1770	**37880**
55	El Camino Real NB	Hillsdale Blvd	0	0	0	3190	6560	0	3830	240	810	0	6450	1495	**22575**
56	El Camino Real SB	Hillsdale Blvd	1245	795	2320	0	4430	3045	0	0	0	1240	5675	0	**18750**
57	El Camino Real	41st Ave	815	13020	0	0	0	0	0	12170	180	545	0	1275	**28005**
58	El Camino Real	42nd Ave	620	10550	2460	2145	1320	1115	1525	9965	275	310	1525	700	**32510**
59	Pacific Blvd	42nd Ave	1455	2300	40	35	50	40	60	3820	3110	3560	45	1845	**16360**
60	Alameda De Las Pulga	20th Ave	480	6390	3925	1715	105	525	1050	6160	235	70	195	510	**21360**
61	Campus Dr	Hillsdale Blvd	2910	0	625	500	6785	0	0	0	0	0	7510	2635	**20965**
62	Bayshore Blvd	Peninsula Ave	0	0	0	0	7795	1300	1225	0	2390	2650	8060	0	**23420**
63	Airport Blvd	Peninsula Ave	9485	0	400	255	535	0	0	0	0	0	575	8775	**20025**
64	Airport Blvd	US Highway 101 NB Ra	340	3095	0	0	0	0	0	1350	7570	5730	0	1240	**19325**
65	Kehoe Avenue	S. Norfolk Street	445	2275	715	420	1275	440	150	1295	1045	675	1035	1495	**11265**
66	Hillsdale Boulevard	Alameda de las Pulga	285	3075	1050	580	1710	785	1060	3535	905	920	2200	515	**16620**
67	Delaware Street	28th Avenue	705	1705	545	1230	0	65	120	1620	750	795	0	2410	**9945**
68	Delaware Street	31st Avenue	720	1025	955	855	0	2830	330	1285	225	1465	0	480	**10170**
69	El Camino Real	Baldwin Avenue	325	13315	250	365	715	1130	1830	14340	215	285	780	410	**33960**
70	Polhemus Road	De Anza Boulevard	25	1590	1760	2080	190	1655	1690	2410	225	110	115	40	**11890**
71	Chess Dr	Bridgepointe Parkway	210	580	245	20	465	90	105	625	1660	1515	685	185	**6385**
72	S. B Street	9th Street	330	785	775	870	2300	995	1935	1200	90	95	2685	360	**12420**
73	W. Hillsdale Boulevard	Clearview Way	305	90	1285	1240	7785	765	795	100	40	50	4075	330	**16860**
		Sum	**63985**	**313295**	**72295**	**64505**	**199170**	**74875**	**88015**	**307140**	**67630**	**80110**	**216250**	**73580**	**1620850**

ADT - 2040 - Model Preferred

ADT - 2040 - Model Preferred

	Intersection		Southbound												
	N/S Street	E/W Street	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	Sum
1	Mariners Island Blvd	3rd Ave	95	310	55	95	9760	980	550	255	6105	6665	8390	125	**33385**
2	Baker Way	Fashion Island Blvd	1540	2585	175	95	4170	2465	465	495	3490	4795	6795	1160	**28230**
3	Mariners Island Blvd	Fashion Island Blvd	1940	3265	1160	685	6705	1975	4875	4050	1575	3915	6695	2795	**39635**
4	Norfolk St	3rd Ave	490	1930	2155	1675	12425	2250	2235	2720	5380	5900	10780	1755	**49695**
5	Norfolk St	Fashion Island Blvd	5190	2930	4515	4180	4850	1375	2390	2755	2020	1420	5720	1920	**39265**
6	Norfolk St	Hillsdale Blvd	2780	1390	935	1400	18710	1105	1055	1590	2805	2315	19710	2915	**56710**
7	Humboldt St	Peninsula Ave	290	2740	1310	2520	6735	1425	2460	1430	1165	2095	7980	185	**30335**
8	Humboldt St	Poplar Ave	860	3300	2010	665	3235	1230	215	3640	955	935	2780	540	**20365**
9	Humboldt St	3rd Ave	760	3935	0	6795	10720	3135	0	660	40	0	0	0	**26045**
10	Humboldt St	4th Ave	0	3315	3475	0	0	0	3745	545	0	180	14740	175	**26175**
11	Grant St	Concar Dr	610	2690	755	390	2275	2220	1265	2340	2340	1700	3275	1280	**21140**
12	US Highway 101 SB Ran	Fashion Island Blvd	1765	285	3940	0	6045	3425	0	0	0	1845	6510	0	**23815**
13	US Highway 101 NB Rar	Hillsdale Blvd	0	0	0	0	19590	0	11310	0	4005	0	13840	0	**48745**
14	US Highway 101 SB Ran	Hillsdale Blvd	0	4315	4425	0	14200	0	0	0	0	2240	13970	0	**39150**
15	Delaware St	Peninsula Ave	315	2935	1175	700	5745	1020	2180	2505	1625	1620	6550	320	**26690**
16	Delaware St	Poplar Ave	495	3210	1065	1470	1895	1195	625	3855	580	300	450	435	**15575**
17	Delaware St	3rd Ave	535	5065	0	750	6500	2365	0	2980	595	2080	0	1165	**22035**
18	Delaware St	4th Ave	1925	5195	2115	0	0	0	740	2760	1205	730	8330	625	**23625**
19	Delaware St	5th Ave	1610	3210	965	840	3220	255	790	3660	405	155	4140	180	**19430**
20	Delaware St	9th Ave	745	2825	350	515	3135	860	810	3345	420	265	3590	355	**17215**
21	Delaware St	Concar Dr	1555	5140	2075	1515	3370	2090	1940	5290	1885	2865	3250	2100	**33075**
22	SR 92 WB Ramps	Concar Dr	545	1680	60	760	870	6935	7735	2320	1510	1005	235	885	**24540**
23	Grant St	19th Ave	0	2085	3620	4085	0	2765	2150	1505	0	330	2005	750	**19295**
24	Delaware St	19th Ave	0	5465	4540	0	0	0	3145	5290	0	1490	3285	2990	**26205**
25	Delaware St	Saratoga Dr	10	6400	3815	3745	0	1755	2055	6435	0	5	0	5	**24225**
26	Delaware St	25th Ave	6825	1475	0	0	0	0	0	2005	825	1605	0	6710	**19445**
27	Saratoga Dr	Franklin Pkwy	1140	3730	2325	745	2520	2460	1465	4270	3135	3370	3575	1230	**29965**
28	Saratoga Dr	Hillsdale Blvd	2805	1565	4605	6240	6290	1365	3035	1260	270	185	10160	1200	**38980**
29	B St	1st Ave	460	2570	765	955	2165	355	765	3040	1220	955	2095	215	**15560**
30	B St	2nd Ave	455	2515	800	1140	2275	470	800	3505	360	295	1665	355	**14635**
31	B St	3rd Ave	630	1810	645	1625	3510	910	740	2100	465	340	2510	495	**15780**
32	B St	4th Ave	970	1750	320	400	2810	330	660	2360	420	855	5775	860	**17510**
33	B St	5th Ave	975	2255	150	190	4255	270	675	2765	1245	1655	4055	675	**19165**
34	Ellsworth Ave	2nd Ave	1120	4040	445	830	1625	500	575	2760	235	410	1400	1085	**15025**
35	Ellsworth Ave	3rd Ave	705	3500	350	810	3535	225	400	2160	235	465	2800	640	**15825**
36	San Mateo Dr	Peninsula Ave	530	4780	1855	2510	3140	730	1875	4360	115	300	3130	320	**23645**
37	San Mateo Dr	Poplar Ave	700	4670	555	275	4240	800	690	5555	995	1150	4575	700	**24905**
38	San Mateo Dr	2nd Ave	1110	3670	310	600	2150	490	740	3220	350	1165	2135	1890	**17830**
39	San Mateo Dr	3rd Ave	895	3515	600	585	3435	415	745	2940	395	690	2870	525	**17610**
40	San Mateo Dr	4th Ave	1410	1655	1435	720	4305	300	290	1960	115	630	5900	1480	**20200**
41	San Mateo Dr	5th Ave	1120	0	1425	1500	2835	0	0	0	0	0	3475	1345	**11700**
42	El Camino Real	Peninsula Ave	60	12125	680	840	575	1815	2170	11930	3020	1455	90	40	**34800**
43	El Camino Real	Poplar Ave	205	12490	3235	2395	1455	1875	1250	14535	535	350	1550	640	**40515**
44	El Camino Real	Tilton Ave	575	13935	525	1110	1075	1340	1565	16320	130	290	1310	965	**39140**
45	El Camino Real	Crystal Springs Rd	4080	13630	0	0	0	0	0	11815	1335	1135	0	4440	**36435**
46	El Camino Real	2nd Ave	0	13145	1000	1320	0	2565	3880	14695	0	0	0	0	**36605**
47	El Camino Real	3rd Ave	1690	14480	435	870	2150	1600	1155	15165	1570	2465	2240	2180	**46000**
48	El Camino Real	4th Ave	680	13080	2785	1885	2110	1825	2145	16335	435	405	2360	945	**44990**
49	El Camino Real	Barneson Ave	1520	16750	0	0	0	0	0	18840	1305	1695	0	2500	**42610**
50	El Camino Real	17th Ave	835	17615	1050	610	1650	3260	3210	20360	3940	4290	1660	1155	**59635**
51	El Camino Real	20th Ave	2150	18245	2165	1570	935	1400	650	19740	2050	2325	1220	5100	**57550**
52	El Camino Real	25th Ave	865	18860	1915	1820	1705	4200	3435	18580	745	575	1650	2400	**56750**
53	El Camino Real	28th Ave	925	19535	2580	2165	3310	830	1360	18260	1280	1330	2955	1655	**56185**
54	El Camino Real	31st Ave	3095	18425	2530	5645	400	310	0	12145	585	1375	2135	2650	**49295**
55	El Camino Real NB	Hillsdale Blvd	0	0	0	2890	7145	0	3660	280	1220	0	7155	2080	**24430**
56	El Camino Real SB	Hillsdale Blvd	1460	795	2025	0	5435	3135	0	0	0	1765	7295	0	**21910**
57	El Camino Real	41st Ave	2130	15995	0	0	0	0	0	12465	520	1155	0	1460	**33725**
58	El Camino Real	42nd Ave	1560	12985	2620	1740	2450	1015	1570	10955	625	440	1805	860	**38625**
59	Pacific Blvd	42nd Ave	1580	2970	65	55	80	85	120	4195	3565	4200	55	1720	**18690**
60	Alameda De Las Pulga	20th Ave	410	8650	4410	1920	130	1000	1800	7330	325	110	255	455	**26795**
61	Campus Dr	Hillsdale Blvd	5345	0	2555	2495	7115	0	0	0	0	0	7260	4800	**29570**
62	Bayshore Blvd	Peninsula Ave	0	0	0	0	11435	865	1195	0	3505	3710	8560	0	**29270**
63	Airport Blvd	Peninsula Ave	11870	0	410	230	555	0	0	0	0	0	555	9245	**22865**
64	Airport Blvd	US Highway 101 NB Ra	1360	5870	0	0	0	0	0	1805	7605	6055	0	3355	**26050**
65	Kehoe Avenue	S. Norfolk Street	420	2375	1540	580	1560	545	450	1765	1205	655	2190	1510	**14795**
66	Hillsdale Boulevard	Alameda de las Pulga	590	4005	1635	830	1640	580	875	4935	855	850	2190	1050	**20035**
67	Delaware Street	28th Avenue	1015	3195	440	815	2975	95	180	2225	1805	1880	2900	2405	**19930**
68	Delaware Street	31st Avenue	1090	1875	2295	1545	3205	2760	485	2310	220	925	3570	485	**20765**
69	El Camino Real	Baldwin Avenue	315	14475	745	1385	1480	2105	3050	16200	125	195	1305	475	**41855**
70	Polhemus Road	De Anza Boulevard	15	2670	2390	3450	180	2800	2420	4200	225	115	100	40	**18605**
71	Chess Dr	Bridgepointe Parkway	395	2205	610	360	1085	670	540	3125	1145	1430	810	475	**12850**
72	S. B Street	9th Street	870	2550	810	875	2920	1630	2510	3160	285	330	3030	765	**19735**
73	W. Hillsdale Boulevard	Clearview Way	480	65	1535	1145	16930	900	1055	80	75	170	12365	850	**35650**
			93490	**402695**	**104260**	**92550**	**274930**	**89650**	**106920**	**388435**	**88720**	**100595**	**287710**	**99085**	**2129040**

APPENDIX F

HAZARDOUS MATERIALS SITES

APPENDIX F - HAZARDOUS MATERIALS SITES

GEOTRACKER

SITE NAME	SITE_TYPE	STATUS	ADDRESS	CITY
704 NORTH SAN MATEO DRIVE	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	704 NORTH SAN MATEO DRIVE	SAN MATEO
911 NORTH AMPHLETT	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	911 NORTH AMPHLETT BOULEVARD	SAN MATEO
922-980 SOUTH CLAREMONT	CLEANUP PROGRAM SITE	OPEN - LONG TERM MANAGEMENT	922-980 SOUTH CLAREMONT	SAN MATEO
A & A BEACON	LUST CLEANUP SITE	COMPLETED - CASE CLOSED - LAND USE RESTRICTIONS	221 SOUTH EL CAMINO REAL	SAN MATEO
A-1 RENTAL CENTER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	333 NORTH AMPHLETT BOULEVARD	SAN MATEO
ABC BODY SHOP	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	4007 PACIFIC BOULEVARD	SAN MATEO
ACCU-TUNE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	435 EAST 3RD AVENUE	SAN MATEO
ACE ROOFING COMPANY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1154 EAST 19TH AVENUE	SAN MATEO
AH SAM	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2645 SOUTH EL CAMINO REAL	SAN MATEO
AMERICAN PRESIDENT SYSTEMS,LTD	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3 WATERS PARK	SAN MATEO
ARAGON HIGH SCHOOL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	900 ALAMEDA DE LAS PULGAS	SAN MATEO
ARCO #0515	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	300 SOUTH DELAWARE STREET	SAN MATEO
ARCO #313-D	LUST CLEANUP SITE	OPEN - ELIGIBLE FOR CLOSURE	1643 EL CAMINO REAL	SAN MATEO
ARCO #4495	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1950 SOUTH DELAWARE STREET	SAN MATEO
ARCO #479	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	335 SOUTH NORFOLK STREET	SAN MATEO
ARCO #725	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	402 NORTH EL CAMINO REAL	SAN MATEO
ARNOLD PEDERSON LUMBER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	400 SOUTH CLAREMONT STREET	SAN MATEO
AUTO TUNE & BRAKE CENTER	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	3925 SOUTH EL CAMINO REAL	SAN MATEO
BAY AREA SELF STORAGE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1140-1150 EAST 19TH AVENUE	SAN MATEO
BAYSHORE INTERNAT'NL TRUCK	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	35 NORTH AMPHLETT BOULEVARD	SAN MATEO
BAYSIDE BUILDING MATERIALS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2075 SOUTH NORFOLK STREET	SAN MATEO
BELLA MANGIATA RESTAURANT	LUST CLEANUP SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	233 BALDWIN	SAN MATEO
BLU-WHITE LAUNDRY	CLEANUP PROGRAM SITE	OPEN - REMEDIATION	80 NORTH B STREET	SAN MATEO
BLUE BIRD CLEANERS	CLEANUP PROGRAM SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	60 WEST 42ND AVENUE	SAN MATEO
BOB RANDICK CO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1740 LESLIE	SAN MATEO
BOB REEDS SERVICE STATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1641 PALM	SAN MATEO
BOREL SQUARE CLEANERS	CLEANUP PROGRAM SITE	OPEN - VERIFICATION MONITORING - LAND USE RESTRICTIONS	67 BOVET ROAD	SAN MATEO
BP #11205	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	609 EAST 4TH AVENUE	SAN MATEO
BUD'S TIRE SERVICE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	836 NORTH SAN MATEO	SAN MATEO
C & P SERVICE, INC.	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2777 SOUTH EL CAMINO REAL	SAN MATEO
CALIFORNIA MILITARY DEPT	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	400 NORTH HUMBOLDT STREET	SAN MATEO
CALIFORNIA WATER SERVICES	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	0 BROADVIEW	SAN MATEO
CALTRAIN CORRIDOR - CALTRAIN N&S CTX CONSTRUCTION	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	CALTRAIN CORRIDOR (SF TO SANTA CLARA)	SAN MATEO
CALTRANS PUMP STATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	0 HIGHWAY 280/92 INTERCHANGE	SAN MATEO
CARL'S DRY CLEANERS	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	801 SOUTH B STREET	SAN MATEO
CARSTENS REALTY INC	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	49 WEST 42ND AVENUE	SAN MATEO
CENTRAL PARK SOUTH APARTMENTS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	31 9TH AVENUE	SAN MATEO
CHEVRON 8-4772	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1966 COYOTE POINT	SAN MATEO
CHEVRON 9-0056	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	610 NORTH EL CAMINO REAL	SAN MATEO
CHEVRON 9-0312	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2 EAST 3RD AVENUE	SAN MATEO
CHEVRON 9-2038	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	790 POLHEMUS	SAN MATEO
CHEVRON 9-3989	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	880 NORTH DELAWARE STREET	SAN MATEO
CHEVRON 9-4224	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2950 SOUTH EL CAMINO REAL	SAN MATEO
CHEVRON 9-5336	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	602 EAST 4TH AVENUE	SAN MATEO
CHEVRON 9-5716, FORMER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1350 WEST HILLSDALE BOULEVARD	SAN MATEO
CHEVRON 9-7781	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	300 EAST HILLSDALE BOULEVARD	SAN MATEO
CHEVRON 9-7863	LUST CLEANUP SITE	OPEN - VERIFICATION MONITORING	2009 SOUTH EL CAMINO REAL	SAN MATEO
CHIN'S SERVICE STATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2300 SOUTH EL CAMINO REAL	SAN MATEO

CITY OF SAN MATEO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	24TH & EL CAMINO REAL	SAN MATEO
CITY OF SAN MATEO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	901 EAST 3RD AVENUE	SAN MATEO
CITY OF SAN MATEO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	0 3RD AVE & HUMBOLDT	SAN MATEO
CITY OF SAN MATEO - PUMP STN	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1025 PATRICIA	SAN MATEO
CITY OF SAN MATEO CORP YARD	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1949 PACIFIC	SAN MATEO
CITY OF SAN MATEO,FIRE STA.#21	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	120 SOUTH ELLSWORTH AVENUE	SAN MATEO
COAST GAS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	254 EAST HILLSDALE BOULEVARD	SAN MATEO
COLLEGE OF SAN MATEO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1700 WEST HILLSDALE BOULEVARD	SAN MATEO
COLLEGE PLAZA SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1400 WEST HILLSDALE BLVD	SAN MATEO
COOKE PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2130 SOUTH EL CAMINO REAL	SAN MATEO
CRAY CLEANERS	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	33 WEST 37TH AVENUE	SAN MATEO
DEIHL'S EQUIPMENT	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	143 SOUTH	SAN MATEO
DELAWARE SHELL SERVICE	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1790 SOUTH DELAWARE STREET	SAN MATEO
DEWALD RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	430 WEST POPLAR	SAN MATEO
DRAEGERS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	200-222 EAST 4TH AVENUE	SAN MATEO
DRAPER RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	439 GEORGETOWN AVENUE	SAN MATEO
DUC HAN INC	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	610 OCCIDENTAL	SAN MATEO
DUCASSEE PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	354 PARROT DR	SAN MATEO
DUNFEY HOTEL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1770 SOUTH AMPHLETT BOULEVARD	SAN MATEO
EXXON 7-4135 (FORMER)	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1801 SOUTH DELAWARE STREET	SAN MATEO
EXXON BULK FAC, FORMER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	320 PENINSULA	SAN MATEO
FASHION ISLAND SHOPPING CTR	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	0 FASHION ISLAND	SAN MATEO
FIRESTONE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2180 SOUTH EL CAMINO REAL	SAN MATEO
FIRESTONE	CLEANUP PROGRAM SITE	OPEN - ELIGIBLE FOR CLOSURE	2180 S. EL CAMINO REAL	SAN MATEO
FORMER BAYSHORE EQUIPMENT RENTAL	CLEANUP PROGRAM SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	909 NORTH AMPHLETT BOULEVARD	SAN MATEO
FORMER SHEN LINCOLN-MERCURY	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	888 NORTH SAN MATEO DRIVE	SAN MATEO
G & C AUTO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1753 LESLIE	SAN MATEO
GENERAL HOSPITAL / CHOPE HOSP	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	222 39TH	SAN MATEO
GIOTINIS PROPERTY	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	1218 MONTE DIABLO AVENUE	SAN MATEO
GOLDEN GATE FLOWER GROWERS	LUST CLEANUP SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	1000 SOUTH AMPHLETT BOULEVARD	SAN MATEO
GOOD YEAR TIRE STORE, FORMER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	616 SOUTH B STREET	SAN MATEO
H.E. UNDERWOOD WAREHOUSE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	78 EAST 21ST AVENUE	SAN MATEO
HAMBLIN TRUST	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1065 AMPHLETT BOULEVARD	SAN MATEO
HAYWARD PARK CALTRAIN STATION	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	401 CONCAR DRIVE	SAN MATEO
HIGHWAY 92 ON-RAMP	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1915 S. EL CAMINO REAL	SAN MATEO
HILLSDALE AUTO WASH	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3651 SOUTH EL CAMINO REAL	SAN MATEO
HILLSDALE HIGH SCHOOL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3115 DEL MONTE	SAN MATEO
HILLSDALE-NORGE CLEANERS, FORMER	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	3723 SOUTH EL CAMINO REAL	SAN MATEO
HOME MADE RAVIOLI	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	109 SOUTH	SAN MATEO
HONDA OF SAN MATEO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	101 EAST 25TH AVENUE	SAN MATEO
HONDA REPAIR	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1101 SOUTH RAILROAD AVENUE	SAN MATEO
HOWARD TIRE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	521 B	SAN MATEO
HUMBOLDT DISTRIBUTERS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	66 EAST 21ST	SAN MATEO
INVESTEK	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	706 EDGEWOOD	SAN MATEO
IZMIRIAN ROOFING & SHEET METAL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	207 SOUTH CLAREMONT STREET	SAN MATEO
J AND C ONE HOUR CLEANERS	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	111 W. 25TH AVENUE	SAN MATEO
JIFFY LUBE STORE #608	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2517 SOUTH EL CAMINO REAL	SAN MATEO
JW MCCLENAHAN CO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2301 PALM	SAN MATEO
K MART STORE #3595	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1700 SOUTH DELAWARE STREET	SAN MATEO
KENTUCKY FRIED CHICKEN #245	LUST CLEANUP SITE	OPEN - ELIGIBLE FOR CLOSURE	406 EAST THIRD AVENUE	SAN MATEO
KEY INVESTMENT CORP	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	300 NORTH BAYSHORE	SAN MATEO
KUROS PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3790 SOUTH EL CAMINO REAL	SAN MATEO
L C SMITH TRUST	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1620 SOUTH DELAWARE STREET	SAN MATEO

LEWIS PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	353 FRANKLIN	SAN MATEO
LITHOGRAPHIX	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2090 SOUTH DELAWARE STREET	SAN MATEO
LOUIE'S CLEANERS	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	8 17TH AVENUE	SAN MATEO
MAJOR CLEANERS (FORMER)	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	144 WEST 25TH AVENUE	SAN MATEO
MALCOLM PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	625 HURLINGHAM	SAN MATEO
MARINA SHOPPING CENTER	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	2978 SOUTH NORFOLK STREET	SAN MATEO
MB GARAGE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2165 PALM	SAN MATEO
MEDIA MALL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2727 SOUTH EL CAMINO REAL	SAN MATEO
METROPOLITAN APARTMENTS	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	337 TO 440 SOUTH FREMONT	SAN MATEO
MIKE HARVEY TOYOTA, FORMER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	790 NORTH SAN MATEO	SAN MATEO
MILLS HOSPITAL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	100 SOUTH SAN MATEO	SAN MATEO
MOBIL 04-FVK	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	254 EAST HILLSDALE BOULEVARD	SAN MATEO
MOBIL 10-FLN / BP #11196	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	404 EAST 19TH AVENUE	SAN MATEO
MOBIL 10-FTX / BP #11197	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	230 SOUTH EL CAMINO REAL	SAN MATEO
MOBIL 99-MTE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	5 NORTH SAN MATEO	SAN MATEO
MOBIL40-FVW	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3600 SOUTH EL CAMINO REAL	SAN MATEO
MONFREDINI PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	311 PARROT	SAN MATEO
MORISON PROPERTY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	420 WESTMORELAND	SAN MATEO
NATIONAL AUTO SERVICES	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	4095 PACIFIC	SAN MATEO
NEDWICK & SON	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1028 SOUTH CLAREMONT STREET	SAN MATEO
NOUVEAU CLEANERS, FORMER	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	11 W. 37TH AVENUE	SAN MATEO
OLYMPIC SAN MATEO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2790 SOUTH EL CAMINO REAL	SAN MATEO
PACIFIC BELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3 WATERS PARK	SAN MATEO
PACIFIC INSULATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	149 SOUTH	SAN MATEO
PACIFIC READY MIX	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	850 SAN MATEO	SAN MATEO
PALM AVENUE MOTORS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2201 PALM	SAN MATEO
PALM AVENUE PROPERTY	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	2142 PALM AVENUE	SAN MATEO
PARKSIDE PLAZA CLEANERS	CLEANUP PROGRAM SITE	OPEN - VERIFICATION MONITORING	1870 S NORFOLK STREET	SAN MATEO
PENINSULA FORKLIFT, FORMER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	850 SOUTH AMPHLETT BOULEVARD	SAN MATEO
PENINSULA GOLF & COUNTRY CLUB	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	701 MADERA	SAN MATEO
PENINSULA REGENT	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1 BALDWIN	SAN MATEO
PET FEED & SUPPLY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1855 SOUTH NORFOLK STREET	SAN MATEO
PETER PAN MOTORS INC.	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2695 SOUTH EL CAMINO REAL	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	OPEN - SITE ASSESSMENT	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PRIVATE RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	PRIVATE RESIDENCE	SAN MATEO
PURI PROPERTY	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	20 NORTH RAILROAD AVENUE	SAN MATEO
REGAL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	706 EAST 4TH AVENUE	SAN MATEO
RETAIL BUILDINGS	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	33-43 EAST 3RD AVENUE	SAN MATEO
REVEREND PHEOPHILOS RES	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	149 WARREN	SAN MATEO
RIVENDELL III, LTD	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	980 S. CLAREMONT STREET	SAN MATEO

SAMARITAN HOUSE	CLEANUP PROGRAM SITE	OPEN - VERIFICATION MONITORING	1515 SOUTH CLAREMONT STREET	SAN MATEO
SAN MATEO CLEANERS	CLEANUP PROGRAM SITE	OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	224 EAST HILLSDALE BOULEVARD	SAN MATEO
SAN MATEO COUNTY FAIRGROUNDS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2495 SOUTH DELAWARE STREET	SAN MATEO
SAN MATEO COUNTY HILLCREST JUVENILE FACILITY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	222 PAUL SCANNELL DRIVE	SAN MATEO
SAN MATEO DOWNTOWN TRANSIT CTR	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1ST & NORTH B	SAN MATEO
SAN MATEO FIRE DEPT #27	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1801 DE ANZA	SAN MATEO
SAN MATEO HIGH SCHOOL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	506 NORTH DELAWARE STREET	SAN MATEO
SAN MATEO NISSAN-VOLKSWAGEN	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	800 CONCAR	SAN MATEO
SAN MATEO POLICE DEPT	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2000 SOUTH DELAWARE STREET	SAN MATEO
SAN MATEO RENTALS	LUST CLEANUP SITE	OPEN - ELIGIBLE FOR CLOSURE	1414 EAST 3RD AVENUE	SAN MATEO
SAN MATEO SERVICES	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	501 SOUTH NORFOLK STREET	SAN MATEO
SAN MATEO UNION HIGH SCHOOL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	765 EAST POPLAR	SAN MATEO
SAN MATEO UNION HIGH SCHOOL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	991 EAST POPLAR	SAN MATEO
SAN MATEO UNION HIGH SCHOOL DISTRICT TRANSPORTATION YARD	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	991 EAST POPLAR STREET	SAN MATEO
SBC PACIFIC BELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	262 EAST 19TH AVENUE	SAN MATEO
SBC PACIFIC BELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	262 EAST 19TH AVENUE	SAN MATEO
SCANDIA CRAFT UPHOLSTERY	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1120 9TH	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	94 SOUTH EL CAMINO REAL	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1990 SOUTH EL CAMINO REAL	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	4140 SOUTH EL CAMINO REAL	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	221 EAST HILLSDALE BOULEVARD	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	221 EAST HILLSDALE BOULEVARD	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1790 SOUTH DELAWARE STREET	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1400 WEST HILLSDALE BOULEVARD	SAN MATEO
SHELL	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	407 SOUTH DELAWARE STREET	SAN MATEO
SHELL (FORMER)/FORMER TOGO'S	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2501 SOUTH EL CAMINO REAL	SAN MATEO
SHELL STATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	400 PENINSULA	SAN MATEO
SHELL STATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2901 SOUTH NORFOLK STREET	SAN MATEO
SHELL STATION	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	611 EAST 3RD AVENUE	SAN MATEO
SHINOZAKI AUTO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1115 SOUTH RAILROAD AVENUE	SAN MATEO
SHUM PLAZA	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2745 SOUTH EL CAMINO REAL	SAN MATEO
SIGNAL OIL STATION, FORMER	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	3717 SOUTH EL CAMINO REAL	SAN MATEO
SKYLAWN MEMORIAL PARK	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	0 CAHILL RIDGE	SAN MATEO
SMB PROPERTIES	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	226 1ST	SAN MATEO
SMCO CORP YARD	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	29 TOWER	SAN MATEO
SOUTH CLAREMONT PROPERTY	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	330 S. CLAREMONT STREET	SAN MATEO
STATION PARK GREEN	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1700 SOUTH DELAWARE STREET	SAN MATEO
STOLLER & SONS INC.	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1150 EAST 19TH AVENUE	SAN MATEO
STONE VILLA INN	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2175 SOUTH EL CAMINO REAL	SAN MATEO
SUNRISE CLEANERS	CLEANUP PROGRAM SITE	OPEN - REMEDIATION	235 BALDWIN AVENUE	SAN MATEO
SUTTON AUTO SALES	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	4075 SOUTH EL CAMINO REAL	SAN MATEO
T. ENDO AUTOMOTIVE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	405 EAST 4TH AVENUE	SAN MATEO
TEXACO #18, FORMER	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2900 SOUTH NORFOLK STREET	SAN MATEO
THE GARAGE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	316 8TH	SAN MATEO
THE TOWERS	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	20 WEST 3RD AVENUE	SAN MATEO
TOSCO #30487	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1626 SOUTH EL CAMINO REAL	SAN MATEO
TOSCO #4178	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	615 EAST 3RD AVENUE	SAN MATEO
TOSCO #5427	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	700 POLHEMUS ROAD	SAN MATEO
TRESSER'S TOWING	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	120 SOUTH AMPHLETT BOULEVARD	SAN MATEO
U.S. POSTAL SERVICE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1630 SOUTH DELAWARE STREET	SAN MATEO
UNITED STATES POSTAL OFFICE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1630 SOUTH DELAWARE STREET	SAN MATEO
UNOCAL #0195	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	346 NORTH EL CAMINO REAL	SAN MATEO
UNOCAL #2661	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	2800 SOUTH EL CAMINO REAL	SAN MATEO

UNOCAL STATION #3294	LUST CLEANUP SITE	OPEN - REMEDIATION	1626 SOUTH EL CAMINO REAL	SAN MATEO
UNOCAL STATION #3869	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1471 EAST 3RD AVENUE	SAN MATEO
UNOCAL STATION #4211	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1890 SOUTH NORFOLK STREET	SAN MATEO
UNOCAL STATION #6390	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	402 SOUTH DELAWARE STREET	SAN MATEO
USA STATION #212	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	3880 SOUTH EL CAMINO REAL	SAN MATEO
VAIL BURNER & OIL CO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	1741 LESLIE	SAN MATEO
VICTOR CATANZARO (CHEVRON)	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	727 EAST 3RD AVENUE	SAN MATEO
VILLAGE CLEANERS, FORMER	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	32 37TH AVENUE	SAN MATEO
WARDROBE CLEANERS	CLEANUP PROGRAM SITE	OPEN - SITE ASSESSMENT	333 AND 335 EAST 4TH AVENUE	SAN MATEO
WATERS OFFICE PARK	CLEANUP PROGRAM SITE	COMPLETED - CASE CLOSED	1, 2, 3 WATERS PARK DRIVE	SAN MATEO
WHEREHOUSE ENTERTAINMENT	LUST CLEANUP SITE	OPEN - SITE ASSESSMENT	1934 SOUTH EL CAMINO REAL	SAN MATEO
WISNOMS HARDWARE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	545 1ST	SAN MATEO

ENVIROSTOR

14 EAST 25TH AVE	VOLUNTARY CLEANUP	INACTIVE - ACTION REQUIRED	14 EAST 25TH AVENUE	SAN MATEO
704 NORTH SAN MATEO DRIVE	STATE RESPONSE	ACTIVE	704 NORTH SAN MATEO DRIVE	SAN MATEO
ARAGON HIGH SCHOOL	SCHOOL INVESTIGATION	NO ACTION REQUIRED	900 ALAMEDA DE LAS PULGAS	SAN MATEO
BLUE BIRD CLEANERS	VOLUNTARY CLEANUP	ACTIVE	56 AND 60 WEST 42ND AVENUE	SAN MATEO
BROWNING-FERRIS IND (SAN MATEO LANDFILL)	EVALUATION	REFER: RWQCB	EAST 3RD AVENUE	SAN MATEO
DOWNTOWN SAN MATEO OPPORTUNITY SITES	VOLUNTARY CLEANUP	ACTIVE	400 EAST 5TH AVENUE, 480 EAST 4TH AVENUE	SAN MATEO
FORMER CARL'S CLEANERS	VOLUNTARY CLEANUP	ACTIVE	801 SOUTH B STREET	SAN MATEO
HILLSDALE HIGH SCHOOL	SCHOOL INVESTIGATION	NO ACTION REQUIRED	3115 DEL MONTE STREET	SAN MATEO
HUMBOLDT SQUARE	VOLUNTARY CLEANUP	REFER: LOCAL AGENCY	304 - 316 S. HUMBOLDT STREET	SAN MATEO
M & M ONE HR MARTINIZING	EVALUATION	REFER: OTHER AGENCY	1464 CARY AVE	SAN MATEO
NEW COMMUNITY SCHOOL	SCHOOL INVESTIGATION	NO ACTION REQUIRED	POLHEMUS ROAD	SAN MATEO
NEW NORTH CENTRAL ELEMENTARY SCHOOL	SCHOOL INVESTIGATION	ACTIVE	715 INDIAN AVENUE	SAN MATEO
ONE HR. DRY CLG. MARTINIZING	EVALUATION	REFER: OTHER AGENCY	111 WEST 25TH AVENUE	SAN MATEO
PACIFIC READY-MIX	EVALUATION	REFER: OTHER AGENCY	850 NORTH SAN MATEO DRIVE	SAN MATEO
PARKSIDE PLAZA CLEANERS	EVALUATION	REFER: OTHER AGENCY	1870 SOUTH NORFOLK ST.	SAN MATEO
PROMETHEUS DEVELOPERS - BAYSHORE EXEC PK	EVALUATION	REFER: OTHER AGENCY	92ND & SOUTH NORFOLK	SAN MATEO
PURI PROPERTY	EVALUATION	REFER: 1248 LOCAL AGENCY	20 NORTH RAILROAD AVENUE	SAN MATEO
R NU IT CLEANERS	EVALUATION	REFER: OTHER AGENCY	200 EAST SECOND AVENUE	SAN MATEO
ROYALE RUG & DRAPERY CLEANING	EVALUATION	REFER: OTHER AGENCY	850 N. DELAWARE	SAN MATEO
SAN MATEO HIGH	SCHOOL INVESTIGATION	NO ACTION REQUIRED	506 NORTH DELAWARE STREET	SAN MATEO
SHOREVIEW COLLECTION	VOLUNTARY CLEANUP	NO FURTHER ACTION	220 NORTH BAYSHORE BLVD..	SAN MATEO
STEVEN'S CAR CAPITAL	EVALUATION	NO FURTHER ACTION	815 WOODSIDE WAY	SAN MATEO
SUNRISE CLEANERS	EVALUATION	REFER: OTHER AGENCY	233 BALDWIN AVE	SAN MATEO
TOP HAT CLEANERS	EVALUATION	NO ACTION REQUIRED	368 N ELLSWORTH AVE	SAN MATEO
VILLAGE CLEANERS	VOLUNTARY CLEANUP	ACTIVE	32 37TH AVENUE	SAN MATEO
WARDROBE CLEANERS	EVALUATION	NO ACTION REQUIRED	344 4TH AVE	SAN MATEO