Redwood City Focused General Plan Update Project

Appendix A: Notice of Preparation (NOP) (March 2022) and Updated NOP (October 2022), including comment letters received and the NOP Distribution List

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NOTICE OF PREPARATION and NOTICE OF PUBLIC SCOPING MEETING

DATE:	Friday, March 4, 2022
TO:	Reviewing Agencies, Interested Parties and Organizations
FROM:	City of Redwood City, Lead Agency
APPLICANT:	City of Redwood City
SUBJECT:	Notice of Preparation and Scoping Meeting for a Program Environmental Impact Report

PROJECT TITLE: City of Redwood City Focused General Plan Update Related to the Housing, Land Use and Public Safety Element, Environmental Justice goals, policies, and programs and Associated Zoning and Municipal Code Amendments (the "Project").

PURPOSE OF THIS NOTICE: This is a notification that the City of Redwood City will be the Lead Agency and will prepare a programmatic Environmental Impact Report (Program EIR) for the Project. The City is requesting comments and guidance on the scope and content of the Program EIR from responsible and trustee agencies, interested public agencies, organizations, and the public (CEQA Guidelines 15082).

30-DAY PUBLIC REVIEW PERIOD ENDING MONDAY, APRIL 4, 2022, AT 5:00 p.m.: You are invited to submit written comments and recommendations regarding the scope and content of the Program EIR that is being prepared. The project description, location maps, and preliminary identification of the potential environmental issues to be explored are attached to this notice.

SCOPING MEETING: The Planning Commission will conduct a scoping meeting via teleconference on **Tuesday, March 15, 2022, at 6:00 p.m.** to collect oral comments on the scope of the EIR. See the instructions posted on the agenda 72 hours in advance on how to join the meeting will be available at the www.redwoodcity.org/pc on the Friday before the meeting.

MAKING A COMMENT: Comments should focus on discussing possible impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the project consistent with the purpose of the environmental review. Note that if you challenge this Program EIR in court, you may be limited to raising only those issues you or someone else raised during the review period of the EIR.

Please provide a contact name, phone number and email address with your comments and specify "Focused General Plan EIR" in the subject line. All comments or questions must be sent to:

Diana O'Dell, Principal Planner
City of Redwood City
1017 Middlefield Road, Redwood City, CA 94063
(650) 780-7236 | dodell@redwoodcity.org

March 4, 2022

Diana O'Dell, Principal Planner
City of Redwood City

Date

PROJECT LOCATION: The project will encompass the entirety of the City, which is located in the San Francisco Bay Area on the San Francisco Peninsula in southeastern San Mateo County. It is bounded on the west by the cities of San Carlos and Foster City, the cities of Atherton and Menlo Park on the east, the Town of Woodside, and unincorporated San Mateo County on the south, and by the San Francisco Bay to the north (Figure 1). The City of Redwood City encompass approximately 19 square miles (approximately 34 square miles including the Bay and the sphere of influence), nearly all of which are developed with urban land uses (Figure 2).

Figure 1 Regional Context Map

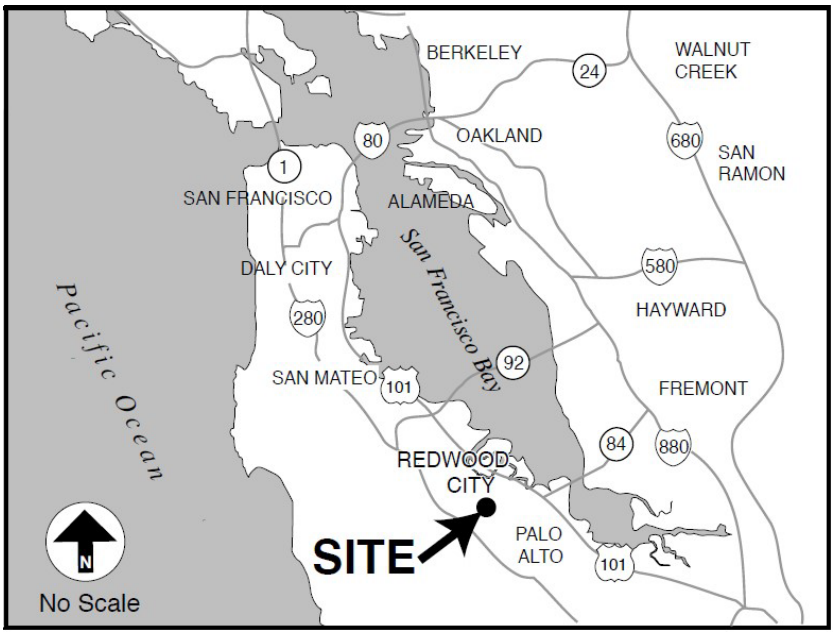


Figure 2 - Redwood City General Plan – Planning Area Map



PROJECT DESCRIPTION:

The amendments to the Elements of the City's General Plan described below include goals, policies, and programs that provide City staff and discretionary bodies with a foundation for long-range planning related to physical development and public services.

Housing Element Update - All cities and counties in California are required to meet their fair share of the State's housing needs. The planning process for accomplishing this is typically implemented every eight years through an update of the Housing Element of each jurisdiction's General Plan, which is a long-range policy document mandated by the State and further required to be reviewed and certified by the State of California's Housing and Community Development Department (HCD).

California State law requires that each city and county have land zoned to accommodate its fair share of regional housing needs (the City's Regional Housing Needs Allocation or "RHNA") over the course of the Housing Element planning period. The Housing Element must identify adequate sites for housing, including rental housing, factory-built housing, mobile homes, and emergency shelters, and must make adequate provision for the existing and projected needs of all economic segments of the community. The RHNA for the Association of Bay Area Governments (ABAG) region is divided into four income categories: very low, low, moderate, and above moderate. Redwood City's RHNA for the 2022-2031 planning period is 4,588 housing units, with the units distributed among the four income categories as shown in Figure 3. Through the Housing Element process, Redwood City will ensure that it has sufficient capacity under existing land use policy to meet its 2022-2031 RHNA obligations.

State law requires the City to plan for 100% of RHNA goals. However, targeting 150% of RHNA makes Redwood City eligible for a "pro-housing" designation, which would allow the City to compete for a new selection of grants. Planning for more housing than the RHNA minimum would also allow for flexibility in future development and create additional opportunities to address the jobs/housing imbalance. It would also increase opportunities for affordable housing to be constructed, benefitting low-income households. For these reasons, the City is targeting at least 150% of the required RHNA, or approximately 6,880 homes.

Figure 3 - Regional Housing Needs Allocation 2022-2031

Income Group	% of County AMI	Number of Units Allocated	Percent of Total Allocation
Very Low[1]	0-50%	1,115	24%
Low	>50-80%	643	14%
Moderate	>80-120%	789	17%
Above Moderate	120%+	2,041	44%
Total	--	4,588	100%

Note: Pursuant to AB 2634, local jurisdictions are also required to project the housing needs of extremely

low-income households (0-30% AMI). In estimating the number of extremely low-income households, a jurisdiction can use 50% of the very low-income allocation or apportion the very low-income figure based on Census data. Using the 50/50 calculation, the City's very low-income RHNA of 1,115 units can be split into 558 extremely low-income and 557 very low-income units.

The updated Housing Element portion of the Project would thus guide the City's future residential growth and development consistent with the City's RHNA obligations. The Housing Element will also incorporate State law requirements legislated since 2015.

Land Use Element Update – The Land Use Element update will amend General Plan policies and land use categories and descriptions to ensure consistency with the other proposed Housing, Safety, and Environmental Justice updates.

Safety Element Update – The Safety Element identifies natural and man-made hazards such as wildfire and flood zones and areas with hazardous materials. It establishes goals and programs to reduce the potential for short- and long-term risk of death, injury, property damage, and economic and social dislocation resulting from these hazards. The update to this Element will focus on ensuring compliance with recent State law which requires the Safety Element to be reviewed and updated in conjunction with Housing Element updates. The update will address the following:

- Fire risk for land classified as very high fire hazard severity zones
- Sea level rise
- Climate adaptation strategies
- Vulnerability assessment
- Local hazard mitigation
- Resiliency strategies
- Identification of areas that may require additional evacuation routes

Other General Plan Updates – Local jurisdictions are required to incorporate Environmental Justice goals, policies, and programs in their general plan if they have a disadvantaged community ("environmental justice community") and are concurrently adopting or revising two or more elements of their general plan. Redwood City has identified three environmental justice communities and is proposing to both amend existing goals, policies, and programs as well as add new goals, policies, and programs to address environmental justice needs.

Zoning Ordinance and Municipal Code Amendments to Text and Map – The above updates to various General Plan Elements may require associated Zoning Ordinance and Municipal Code amendments, including rezoning additional areas to a Mixed-Use Zoning District and rezoning areas with mobile home parks to allow mobile homes by right. Zoning text amendments would include, but are not limited, to removing the residential limit, or "cap," for the Downtown Precise Plan, increasing the densities and heights permitted in existing Mixed Use zoning districts, reducing zoning constraints to building medium-density housing in the R-2 through R-

5 Zoning districts, and other associated amendments. These amendments would implement specific goals and policies to promote housing, streamline approvals, and affirmatively further fair housing and implement the goals and policies of other General Plan Elements, including Housing, Land Use, Safety, and Environmental Justice.

PROJECT OBJECTIVES: The Project promotes the objectives listed below for the long-term growth and enhancement of the community.

1. **Housing** - Comply with State law requiring an update to the Housing Element to incorporate the City's RHNA obligations.
2. **Housing** - Locate housing in places close to services, transit, and jobs and in existing high opportunity residential neighborhoods.
3. **Land Use Element** – To achieve consistency with the proposed Housing Element goals, policies, and programs
4. **Safety Element** - Comply with State law requiring an update to the Safety Element to incorporate information, goals, policies, and programs to address climate change, resiliency, sea level rise, flooding, and wildfire risk.
5. **Environmental Justice Goals, Policies and Programs** – Comply with State law and guidelines to implement goals, policies, and programs that address pollution burdens and population characteristics in environmental justice communities.

SCOPE OF PROGRAMMATIC EIR: As the lead agency, the City of Redwood City has determined that the proposed Project will require preparation of a Program EIR pursuant to the California Environmental Quality Act (CEQA). The Program EIR will evaluate the environmental impacts resulting from implementation of the Project and will recommend mitigation measures to avoid or reduce significant impacts, where applicable. The Program EIR also is intended to help the City review future project proposals pursuant to section 15168 (Program EIR) of the CEQA Guidelines. The following environmental topics will be evaluated in the Program EIR:

- Aesthetics
- Agriculture and Forestry
- 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
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Transportation and Circulation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Cumulative Impacts
- Alternatives to the Proposed Project

UPDATED NOTICE OF PREPARATION and NOTICE OF SECOND PUBLIC SCOPING MEETING

DATE:	Wednesday, October 19, 2022
TO:	Reviewing Agencies, Interested Parties and Organizations
FROM:	City of Redwood City, Lead Agency
APPLICANT:	City of Redwood City
SUBJECT:	Updated Notice of Preparation and Scoping Meeting for a Program Environmental Impact Report

PROJECT TITLE: City of Redwood City Focused General Plan Update Related to the Housing, Land Use and Public Safety Element, Environmental Justice goals, policies, and programs and associated Zoning and Municipal Code Amendments (the "Project").

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30-DAY PUBLIC REVIEW PERIOD ENDING FRIDAY, NOVEMBER 18, 2022, AT 5:00 p.m.: You are invited to submit written comments and recommendations regarding the scope and content of the Program EIR that is being prepared. The project description, location maps, and preliminary identification of the potential environmental issues to be explored are attached to this notice.

SCOPING MEETING: The City previously issued this Notice of Preparation on March 4, 2022 and the Planning Commission held a scoping meeting via teleconference on Tuesday, March 15, 2022, **at 6:00 p.m.** to collect oral comments on the scope of the EIR. To view the agenda and meeting video go to www.redwoodcity.org/pc. The City has been made aware that one or more required entities may not have received the original Notice of Preparation due to a technical issue, and the City is therefore issuing this Updated Notice of Preparation and holding a second scoping meeting. The second scoping meeting will be held on **Wednesday, November 2, 2022** at the Zoning Administrator Hearing at 3pm to collect oral comments on the scope of the EIR. The agenda will be posted 72 hours in advance of the meeting and meeting materials will also be available at www.redwoodcity.org/.

MAKING A COMMENT: Comments should focus on discussing possible impacts on the physical

environment, ways in which potential adverse effects might be minimized, and alternatives to the project consistent with the purpose of the environmental review. Note that if you challenge this Program EIR in court, you may be limited to raising only those issues you or someone else raised during the review period of the EIR.

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Apollo Rojas, Senior Planner
City of Redwood City
1017 Middlefield Road, Redwood City, CA 94063
(650) 780-7365 | arojas@redwoodcity.org

Apollo Rojas
Apollo Rojas, Senior Planner
City of Redwood City

October 19, 2022
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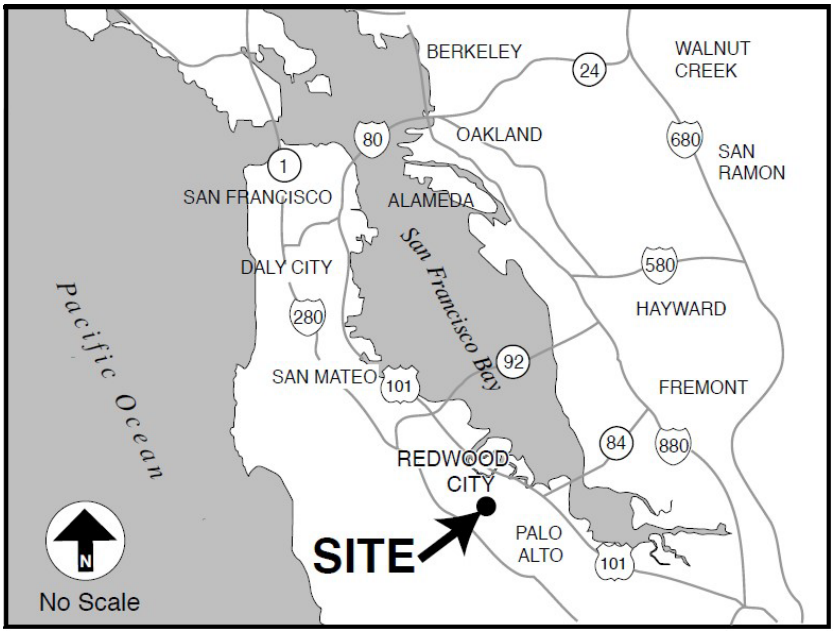
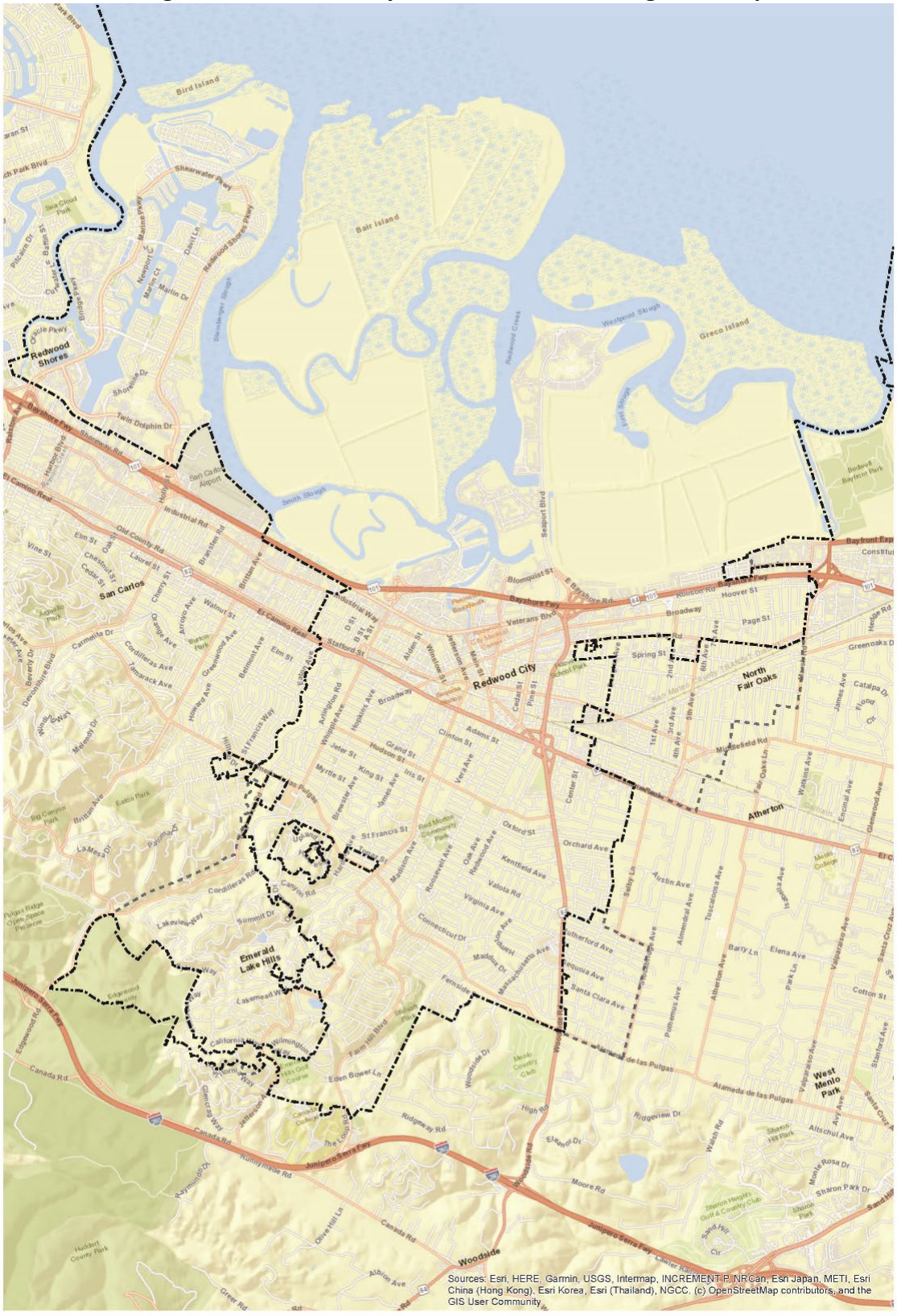


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March 25, 2022

Planning Director and City Council
City of Redwood City
1017 Middlefield Road
Redwood City, CA 94063
mail@redwoodcity.org

Re: Comments on the Draft Housing Element

Thank you for sharing this early draft with the public. We appreciate the opportunity to comment before it is sent to HCD. HLC is enthusiastically supportive of the city obtaining a Pro-housing Designation. We are especially encouraged by the city's goal of meeting 150% of the city's RHNA requirement, but we are concerned that the draft housing element, as written, needs significant and substantial improvement to meet that standard.

Community Engagement:

We appreciate the effort the city has made to reach out to community members for the process. Unfortunately, it does not sound like staff proactively met with organizations that represent special needs populations to inform their housing strategy. We recommend setting up meetings with groups that work with people experiencing homelessness, people escaping domestic violence, and other service providers to make sure that the housing plans that are created meet the needs of the populations that need the housing most. To ensure this outreach was completed, please include the number of people included in the discussion from specific vulnerable groups. If 110 people were talked to, how many were homeowners, renters, or homeless? How many lived in overcrowded housing? How many do not speak English as their first language? How many receive disability benefits? How many feel secure in their housing or feel like they may lose their housing any day?

Additionally, while there were many meetings to satisfy the requirements of the Partnership for the Bay's Future Breakthrough grant for the city of Redwood City (our understanding is that this was not part of the housing element process but discussed in the community outreach chapter) we think the city has room to improve on their community engagement strategy. Frustration in the process was strong enough that participants created this petition to urge the council to change the policies they considered. When describing the community engagement process for the housing element, please do not rely on number of meetings, but instead describe how those meetings were announced, where and when they were held, how much time was given to

respond, how were the meetings structured, and how did the city incorporated what they heard from those meetings into the policies and programs that were sent to the council.

Needs Assessment:

Because of the lack of community engagement, the needs assessment lacks specificity about populations of concern that the housing plan is designed to address. For example, rather than stating on page H-4 on the 2nd to last paragraph that “many” Redwood City residents have disabilities, explain the different populations and special housing needs of those groups.What services do they need (not just ada compliance), and what agencies can you partner with to provide those services. In the case of overcrowded households, please provide the total number of overcrowded homes, and any interviews that were completed with those households and what suggestions those residents have for alleviating overcrowding. Data should be available on people that applied for but did not get accepted into affordable homes in Redwood City, so please include that and identify the barriers keeping those families from accessing housing. Last, the needs assessment should include information on how many renters/landlords received emergency assistance, how many applied but did not receive it and why, and how many households are at risk of eviction when all moritoriums are removed. As HCD has made clear many times, the Needs Assessment is not just an exercise in how to use census data, but an assessment of the needs the city must address and ideas on how local needs can be met.

Constraints:

In addition to the constraints listed in the constraints section, the city needs to acknowledge and address the following:

1. Processing time for applications. When talking to our affordable housing partners, the length of time it takes for Redwood City to process applications significantly increases costs, requiring additional public subsidies for fewer affordable homes. We would like to see a commitment to expediting the review of developments that have the support of the council. To do this, make policy H-4-3 specific. Commit to a timeline that the city will follow. Commit to spending the resources needed to meet those new requirements including training and adding new staff if needed. Allowing 100% affordable homes by right has been very effective in other jurisdictions, and we appreciate the city committing to studying this option. We would encourage the city to find the time to look at it earlier than 2027.
2. The city has a new preference for local residents in all affordable homes in the city. This preference makes affordable homes currently in the pipeline less competitive for county, state, and federal funding. Additionally, this policy discriminates against people that receive services in the city or have been displaced from neighboring communities. The city needs to revisit this policy to ensure new affordable homes can attract needed outside funding.
3. Staff has told a number of developers proposing ELI and VLI housing that deeply affordable homes are not a priority of the city. Applications for office developments that are providing deeply affordable homes to meet their linkage fee requirements have had significant delays in processing their applications, even when the development is consistent with current zoning. How will the city address this issue?

4. CEQA caused a significant delay in the development of Habitat for Humanity's affordable homeownership development in the downtown area. While this high profile case is well known, it is not the only instance that CEQA has caused delays and increased construction costs on affordable homes. What policies will the city pass to protect future affordable homes from this type of harassment and delay?
5. Local fees are a significant constraint to housing development. The City should lower fees for affordable homes, including:
    a. Permit processing fees for planning and zoning.
    b. Impact fees or exactions, imposed to defray all or a portion of the public costs related to the development project.
6. Jurisdictions are required to analyze land use controls as part of the housing element. In addition to the standards like density, height, and FAR, minimum lot size, other development standards to consider and analyze by zoning category are as follows:
    a. Density.
    b. Lot coverage
    c. Height limits
    d. Lot size requirements
    e. Unit size requirements.
    f. Floor area ratios
    g. Setbacks.
    h. Open space requirement

Affordable homes should have significant adjustments to the requirements above to facilitate the development of deeply affordable homes.

7. Parking policies hold a significant impact on the design, location, and cost of new developments. The cost of parking can be a deciding factor on whether a project is viable to be built and, in some cases, the parking may go underutilized, thus burdening renters with higher rent. This is especially true for low-income households, who tend to own fewer cars than their higher-income counterparts, but shoulder the burden of extra expenses. Modifications to parking policies can encourage residents to utilize transit, bike, and own fewer cars, while reducing the cost of the development. The constraints section needs to examine the parking requirements throughout the city, especially in opportunity neighborhoods, and suggest policy adjustments that allow for less parking, beyond requirements in state law, for deeply affordable homes. On Policy H-4.2 - when will you change the parking policy, by how much? And if you limit it to areas with transit will it allow you to meet your AFFH requirements?

Housing Resources:

Redwood City is a leader in leveraging office development for the development of affordable homes. We appreciate the city's ingenuity and hope other city's will follow your example. While the policy is excellent, the city could do more and expand resources further. Funding is desperately needed to help create new affordable homes, provide infrastructure improvements throughout the city, and to ensure adequate staffing to meet the city's ambitious goals.

Specifically, two funding sources should be considered:

1) **Vacancy Tax -** Parcel taxes in the form of a vacant property tax have been used by cities (VPT, Oakland) to fund affordable housing and homeless services; as well as to entice owners of undeveloped sites to either sell or build homes on their parcels.
2) **Transfer Tax -** A one-time tax payment that is levied by a government on the transfer of ownership to property (i.e. sale of a home) from one individual or entity to another within its defined boundaries. The raised revenue can then be utilized to fund affordable housing within the jurisdiction.

Affirmatively Furthering Fair Housing (AFFH):

This section does not meet the minimum requirements or even reference the guidance from the Housing and Community Development Department. While it is helpful to note that the communities of opportunity are on one side of El Camino Real and there is a concentration of poverty on the other side, there are no policies, programs, suggestions to overcome this pattern of development. Specifically, the history of redlining in the city, past city council's opposition to affordable homes, restrictions by race on home ownership in specific subdivisions, and other past practices have a real and persistent impact on communities today. While a number of policies make reference to AFFH, the policies that would actually change zoning or are most likely to result in changes in segregation patterns use words like "study" instead of "impliment" or "identify". The city needs to commit to identifying specific sites in high opportunity areas that are likely to be developed as affordable homes. Specifically, the city should take a close look at publicly owned sites (by all agencies, not just the city) and quasi public (owned by churches or nonprofits).

Meeting the Needs of Vulnerable Populations:

We appreciate the city's policies regarding mobile homes and the proposed policies that would allow SRO's, navigation centers, and aligning your policies with the county. In addition, we recommend:

1) **Specific Strategies to increase Extremely Low Income (ELI) Housing -** Most ELI homes need layered funding streams in order to accommodate such low rents.
2) **Identify Sites & Funding for Emergency Shelters & Supportive Housing -** Every jurisdiction must identify a zone or zones where emergency shelters are allowed as a permitted use without a conditional use or other discretionary permit. The identified zone or zones must include sufficient capacity to accommodate the need for emergency shelter as identified in the housing element, and each jurisdiction must identify a zone or zones to accommodate at least one year-round shelter.
3) **Set Aside Project Based Vouchers -** When units in a project are allocated for use with vouchers that are held by tenants.

4) **Safe Parking Lots for Cars and Recreational Vehicles (RVs) -** Designated areas for unhoused residents living in cars and RVs to park, often with access to basic services.

Protecting Tenants and Preserving Existing Housing:

To further meet the Affirmatively Furthering Fair Housing requirements, we suggest prioritizing stabilizing renters and preventing displacement as a critical strategy. While some of our recommendations may be redundant with the city's new anti-displacement policy, it was unclear in the draft HE which policies would be included, so we are listing all of the policies that should be included. Specifically, the city should fast-track the creation and implementation of tenant protection ordinances and programs that have been identified by Redwood City tenants at risk of displacement through the community engagement for the Partnership for the Bay's Future Challenge grant.

a. Anti-harassment ordinance

b. Stronger local just cause policy that defines a substantial renovation and gives tenants a right to return.

c Strengthened Just Cause Ordinance that begins on day one of tenancy, clarifies the definitions of no-fault just causes for evictions (including significant renovation, owner move-in, and Ellis Act evictions), and gives tenants the right of first refusal after a renovation.

d. The creation of an office that can become a one-stop shop for tenants and landlords to enforce rental laws, including the administration of a rental registry

e. A rental registry ordinance to collect data on rent increases, termination notices, and evictions.

f.Create a public-facing office at the City of Redwood City to centralize enforcement of all anti-displacement ordinances and the building code. Improve the building inspection process to be more effective and provide greater confidentiality and communication with the tenant

Sites:

We did not complete a full sites analysis for this draft, but would encourage the city to make at least two changes:

1. Program H2-6: Consider making a higher inclusionary requirement on sites that you are granting a land use change (potential land value increase). It is important that the city recapture value that is created through city action.

2. Adopt a policy that governs public land to ensure compliance with the state's surplus lands act and goes beyond it to proactively seek opportunities to enable affordable housing on key sites in the city.

Thank you for the opportunity to comment on this important plan. I look forward to it evolving into a model housing element that other cities can use as a guideline.

Respectfully,



Evelyn Stivers
Executive Director
Housing Leadership Council of San Mateo County

March 25, 2022

City of Redwood City
Attn: Diana O'Dell
1017 Middlefield Road
Redwood City, CA 94063
Via Email: housingupdate@redwoodcity.org

Re: Redwood City Housing Element Update

Dear Ms. O'Dell

Please accept these comments on the above referenced Housing Element Update on behalf of the members of Carpenters Local 217, which represents working men and women in Redwood City. We appreciate the opportunity and look forward to working together on this important endeavor.

To meet the urgent need for housing units outlined in the State's Regional Housing Needs Allocation, as well as the policy goals outlined in the Redwood City Housing Element and larger General Plan, it is vital that Redwood City support efforts to build the local construction workforce. We commend the City's goal of to target 150 percent of RHNA, as the members of Local 217 who reside in Redwood City are intimately familiar with the region's housing crisis. Local 217 has long been at the forefront of training the next generation of construction workers, opening pathways to the industry for diverse and traditionally underserved populations, and embracing new technologies and delivery methods to expedite the construction of much needed housing.

To support the policy goals of the Housing Element, Local 217 is requesting that the City add local hire and apprenticeship requirements to the General Plan and Housing Element for all residential construction projects larger than 10 units. The standards Local 217 is proposing in this comment letter would help to ensure greater benefits for the broader community, help ensure that construction labor needs are met, and guarantee that new residential development projects within the City are making needed investments in the region's skilled construction industry workforce,

The City Should Bar Issuance of Building Permits Unless Each Future Residential Development of 10 units or Above has a Viable Apprenticeship Program and Local Hiring Requirements

The Carpenters propose the following additions to the Municipal Code of Redwood City for any residential project larger than 10 units

Permitting requirements in the Municipal Code of Redwood City

A person, firm, corporation, or other entity applying for a building permit under the

> relevant section of the Municipal Code of Redwood City, California shall be required to comply with the apprenticeship, healthcare, and local hire requirements of the Housing Element and General Plan. Failure to comply with the requirements set forth in this section shall be deemed a violation of this article.

Apprenticeship:

> For every apprenticeable craft, each general contractor and each subcontractor (at every tier for the project) will sign a certified statement under penalty of perjury that it participates in a Joint Apprenticeship Program Approved by the State of California, Division of Apprenticeship Standards **OR** in an apprenticeship program approved by the State of California Division of Apprenticeship Standards that has a graduation rate of 50% or higher and has graduated at least thirty (30) apprentices each consecutive year for the five (5) years immediately preceding submission of the pre-qualification documents. The contractor or subcontractor will also maintain at least the ratio of apprentices required by California Labor Code section 1777.5.

Local Hire Policy:

> Contractor will be required to provide documentation that the contractor will hire a minimum of twenty-five percent (25%) of staff for any job classification with more than four (4) employees employed whose primary residence, which is not a post office box, is, and has been, within the Counties of San Mateo or Santa Clara within 180 days of the expected date of issuance of the Notice to Proceed for the project.

While there has been a remarkable economic expansion in Redwood City since 2010, rising inequality and displacement adds to the City's affordability crisis and threatens to undermine the region's strong economy. The Redwood City General Plan and Housing Element calls for a greenhouse gas reduction program and sustainable development, as well as improvement to the City's jobs/housing balance to encourage office and residential growth to occur in tandem as well as efforts to minimize vehicle trips. Policies that require the utilization of apprentices and a local construction workforce, in tandem with programs currently operational by Local 217 outlined below, will help right that imbalance and ensure that this project helps the City meet the goals of the Redwood City General Plan.

Local 217 has implemented many programs that will enable the City to meet the General Plan and Housing Element goals. These programs include a robust Joint Apprenticeship Training Committee, vigorous utilization of apprentices in Redwood City, healthcare coverage for all members and their families, and innovation within the construction industry.

Joint Apprenticeship Training Committees (JATC's), such as the Carpenters Training Committee for Northern California (CTCNC), are a proven method of career training built around a strong partnership between employers, training programs and the government. This tripartite system is

financially beneficial not only for the apprentice, but is a major benefit for the employer and the overall economy of Redwood City. The CTCNC monitors current market conditions and adjusts the workflow of apprentices to meet the needs of the community, heading off any shortage of skilled workers. History has demonstrated that strong utilization of apprentices throughout the private sector helped California builders produce millions of units of housing.

CTCNC recruitment strategies include robust diversity and inclusionary outreach programs, such as pre-apprenticeship, with proven results in representative workplaces and strong local economies. It is imperative that our underserved populations have supportive and effective pathways to viable construction careers, while ensuring that employers are able to find and develop the best and brightest talent needed to thrive in a competitive economy.

Employer-paid health insurance plans for our members and their families provides preventative services to stay healthy and prevent serious illness. Timely care reduces the fiscal burden for our members and their families, and significantly reduces the utilization of safety-net programs administered by Redwood City and San Mateo County.

Embracing new technologies and delivery systems will have a significant impact on the construction industry, particularly the residential sector. Increasing housing delivery methods reduces project durations and provides Redwood City residents housing sooner. Local 217 is at the forefront of ensuring that new construction technologies deliver those benefits while also creating work opportunities for those already in the trades as well as those looking to begin a construction career. These technologies could help the City meet its jobs/housing linkage goals within the Redwood City General Plan and Housing Element.

Local 217 is in a unique position to address many of the key ideas outline in the Redwood City Housing Element Update. By investing in the training and utilization of apprentices, performing outreach to ensure that the workforce closely mirrors the demographics of our local community, providing employer-paid healthcare for our members and their families, and promoting innovation in the residential construction sector, Local 217 is prepared to assist in closing the affordability gap in Redwood City and the Bay Area. We look forward to engaging City staff and elected leaders as the Housing Element moves forward and working cooperatively to bridge the needs of the City with the skills and tools of Local 217.

Thank you for your time and consideration of these comments.

Sincerely,

Ed Evans
Senior Field Representative
Carpenters Local 217

City of Redwood City
ATT'N: Diana O'Dell
1017 Middlefield Road
Redwood City, CA 94063
02 March 2022



re: Draft 2023-2031 Housing Element (Public Review)

Dear Ms. O'Dell,

I read with interest the subject document, and have a few comments to offer.

Item: 1
Page: H-4, Overcrowding
Type: Question
Rationale:

I see that a housing unit is considered overcrowded if occupied by more than one person per room (excluding kitchens, bathrooms and halls). I'm curious if this means a family of four living in a 2-bedroom apartment—one bedroom for parents, one bedroom for the two kids, a living room and eat-in kitchen—would be considered overcrowded?

Proposed text improvement:

Include a few examples, one or more of a barely overcrowded unit, and one or more of an almost-but-not-quite overcrowded unit

Item: 2
Page: H-8, projections
Type: minor
Rationale:

The document projects 506 new ADUs, 506 "Missing Middle" housing units, and 275 "SB9 Units" to be built over the 9-year RHNA period. What is the plan to track how we're doing over the period? Monitoring progress over the period would help keep us accountable, and alert us to what changes, if any, need to be made.

Proposed text improvement:

Include a section detailing the plan to track incremental progress. Ideally there would be a web address where the City would maintain a graph showing projected number of units of each type, and units completed over time.

Item: 3
Page: H-10, table H3-14
Type: editorial/presentation
Rationale:

The table designation is a little weird: previous table was designated H-1, whereas this one is H3-14. "AMI" in the column headers isn't expanded/explained anywhere in the document.

Proposed text improvement:

Designate the table as H-2. Expand "AMI" (Area Median Income?) at first use.

Thank you so much for the work on these ambitious plans. !!

Sincerely,

Collin Park

This is SO IMPORTANT for our children and theirs...

From: CD-Diana ODell
Sent: Thursday, March 24, 2022 10:03 AM
To: Peggy Romfh
Subject: RE: Parking Plan Associated with the Housing Plans

Ms. Romfh,

Thank you for your comment. Getting the required amount parking "right" is an important issue, and we'll keep adequate parking, particularly visitor parking, in mind when we study the parking requirements.

Best,



Diana O'Dell, AICP | Principal Planner
City of Redwood City | 650.780.7236

To support community and employee health, many City services are being offered virtually or with modifications. See current information about City services and operating hours here. Visit MyRWC to access services available online 24-hours a day, 7 days a week.

From: Peggy Romfh <peggy@romfh.net>
Sent: Tuesday, March 22, 2022 8:28 PM
To: Housing Update <HousingUpdate@redwoodcity.org>
Subject: Parking Plan Associated with the Housing Plans

You don't often get email from peggy@romfh.net. Learn why this is important

I live in a Redwood City neighborhood that is one block from some apartment buildings and on a street that has ADU's in the immediate neighborhood. There is NEVER any street parking available as residents from the apartments and ADU's use up all available parking spaces.

I see that your strategies include the addition of more ADU's and multiple family dwellings as well as a suggestion to make lots smaller. I do not see where you have adequately covered where all of these people will park. The people who live in ADU's in our neighborhood have both work and personal vehicles, and they have insufficient parking off-street by their ADU's.

Please consider including sufficient parking requirements in all your building plans. For example, requiring one off-street parking space per apartment or ADU will result in even fewer available street spaces available near single-family dwellings. Currently, we have two spaces available on our driveway, one for our personal vehicle and one that could be used for visitors. If a second visitor comes, they may have to search out a parking place 2-4 blocks away. That, in my mind, is unacceptable.

Thank you for your consideration.

Peggy Romfh

1097 Haven Avenue
Redwood City CA 94063

Sent from Mail for Windows

DRAFT SUBMISSION FOR REDWOOD CITY HOUSING ELEMENT 9.30.21

Introduction to Developmental Disabilities

People with developmental disabilities have a disability that emerged before age 18, is expected to be lifelong, and is of sufficient severity to require a coordinated program of services and support in order to live successfully in the community. Developmental disabilities include intellectual disability (once called "mental retardation"), autism, Down syndrome, epilepsy, cerebral palsy, and other disabling conditions similar in their functional impact to an intellectual disability. Under California's Developmental Disabilities Services Act and the U.S. Supreme Court's 1999 decision in *Olmstead v. L.C.,* people with developmental disabilities are entitled to receive community-based services that allow them to live in the least restrictive community setting. This shift to de-institutionalization has led to the closure of the most restrictive segregated settings and to the requirement that local jurisdictions in their Housing Elements assess and plan specifically for the housing needs of people with developmental disabilities who receive services from the Regional Center in order to live in their home community.

Demographic and Other Trends Affecting the Housing Needs of People with Developmental Disabilities

Faster Growth than the General Population. Redwood City is home to 667 people with developmental disabilities of whom 415 are adults and 252 are under age 18. This represents a 22% increase over the 550 people with developmental disabilities living in Redwood City in 2013 when the 2015-2023 Housing Element was developed. Much of the growth has been among adults with developmental disabilities.

Table ___ Increase in People with Developmental Disabilities in Redwood City

Age	2013	2021	% Increase
Under age 18	236	252	7%
18 and older	314	415	33%
Total	550	667	22%

Note: The 2013 data were reported by Golden Gate Regional Center in the Redwood City Housing Element for 2015 to 2023. The 2021 data are published at the zip code level by the California Department of Developmental Services.

Growth in the Number of Adults with Developmental Disabilities Living in the Family Home. In 2021, 46% of Redwood City adults with developmental disabilities lived in the home of parents or other guardians ("family home"), compared to 35% in 2013. The family home is now the largest and the fastest growing living arrangement for adults with developmental disabilities in Redwood City. This reflects the reality that growth in Redwood City's adult population with developmental disabilities has greatly outpaced the limited number of opportunities to live in an affordable apartment with supportive services or in some type of licensed facility.

Table ___ Changes in Living Arrangements of Adults with Developmental Disabilities in Redwood City

Adult Living Arrangements	2013 Number	2013 Percent of Total	2021 Number	2021 Percent of Total	Change in Percent of Total
In the family home	108	34.4%	188	45.3%	10.9%
Own apartment with supportive services	77	24.5%	83	20.0%	-4.5%
Licensed Facilities	122	38.9%	132	31.8%	-7.0%
Other (including homeless)	7	2.2%	12	2.9%	0.7%
Total Adults	**314**	100%	**415**	100%	

Note: The 2013 data were reported by Golden Gate Regional Center in the Redwood City Housing Element for 2015 to 2023. The 2021 data are based on data published at the zip code level by the California Department of Developmental Services. These data assume that all people with developmental disabilities under age 18 live in the family home, although people under 18 may be placed outside the family home. This assumption may result in insignificant over counting of adults in the family home and under counting of adults in licensed facilities or other.

Increase of Autism Diagnosis. Growth in the Redwood City adult population with developmental disabilities correlates with a significant annual increase in the diagnosis of autism that began in the mid-1980s and did not level out until after 2015. The cumulative impact of this trend is already seen in the growth in the San Mateo County population age 32 to 41 and will continue into the future.

Higher Rates of Physical Disabilities. People with developmental disabilities are more likely than the general population to have an accompanying physical disability. Twenty-seven percent (27%) of San Mateo County residents with developmental disabilities have limited mobility, and 13% have a vision or hearing impairment. The need for an accessible unit coupled with the need for coordinated supportive services compounds the housing barriers faced by those with dual disabilities.

Longer Life Spans. Between September 2015 and June 2021, the Department of Developmental Services reports that the number of San Mateo County residents with developmental disabilities age 62 and older grew by 35%. Longer life spans means that more adults with developmental disabilities will outlive their parents who are the single largest provider of housing for people with developmental disabilities.

Decline in Licensed Care Facilities. The Department of Developmental Services reports that between September 2015 and June 2021, San Mateo County lost 5% of its supply of licensed care facilities for people with developmental disabilities (including Community Care Facilities, Intermediate Care Facilities, and Skilled Nursing Facilities), thereby increasing the need for affordable housing options coordinated with supportive services funded by the Regional Center.

Displacement Due to Parent Death or Infirmity. The Department of Developmental Services has documented a 13% decline in the specific age group 42 to 61 in San Mateo County between September 2015 and June 2021. This loss can reasonably be attributed to displacement out of the county because of the lack of residential living options when an elderly parent caregiver passes away or becomes too frail to house and care for the adult. Displacement takes a particular toll on adults with developmental

disabilities who depend on familiarity with transit routes and shopping and services, as well as support from community-based services and informal networks built up over years in living in Redwood City.

Ineligibility for Many Affordable Rental Units. Many adults with developmental disabilities depend on monthly income of under $1,000 from the Supplemental Security Income (SSI) program, pricing them out of even Extremely Low Income affordable housing units in San Mateo County. Those with employment tend to work part-time in the lowest paid jobs and also struggle to income-qualify for many of the affordable housing units for rent in Redwood City.

Transit-Dependent. Most adults with developmental disabilities do not drive or own a car and are very dependent on public transit as a means to integration in the larger community.

Best Practices for Inclusion of People with Developmental Disabilities in Typical Affordable Housing

As demonstrated by a growing number of inclusive affordable housing developments in neighboring jurisdictions, Redwood City can meet the housing needs of people with developmental disabilities by adopting policies and programs to promote their inclusion with coordinated services in typical affordable housing. The following considerations should guide Redwood City in this pursuit:

- **Integration in typical affordable housing** is a priority in order to affirmatively further fair housing for a group that has historically experienced no alternative to segregated living. Up to 25% of the total units in any one project should be subject to a preference for people with developmental disabilities.
- **Coordination of housing with onsite supportive services** funded by the Golden Gate Regional Center, including housing navigation and housing retention services, should be required. These coordinated services provide a supported pathway for people with developmental disabilities to apply for and retain an affordable apartment and are as beneficial to a person with a developmental disability as a physically modified unit is to a person with a mobility impairment.
- **A mix of unit sizes** at inclusive housing properties would address the needs of those who require live-in aides, want to live with roommates or have children.
- **Location near public transit** would accommodate the transit-dependency of most adults with developmental disabilities.
- **Deeply affordable housing is needed,** targeting incomes not more than 30% of Area Median Income and taking advantage of Housing Authority Project Based Vouchers or HUD 811 Project Rental Assistance when available.

Policy and Program Recommendations

Redwood City has a responsibility not simply to assess the housing needs of people with developmental disabilities but also to create and implement policy, zoning, program and other changes that make it more feasible for affordable housing developers to include people with developmental disabilities in their housing plans. State financing programs require 15% of units in new affordable housing projects to include modifications for physical accessibility but no such state mandate exists for those with

developmental disabilities who lack a physical disability but require coordinated supportive services. Targeted Redwood City policies are necessary to achieve inclusive housing for people with developmental disabilities:

- **Establish and monitor a quantitative goal.** Tracking the City's success in housing people with developmental disabilities is essential to determine whether policies and programs are having an effect in overcoming historic patterns of discrimination and exclusion of people with developmental disabilities from affordable housing. A goal of 100 new housing units for Redwood City residents with developmental disabilities over the period of the 2023 to 2031 Housing Element would represent significant progress since the 2015-2023 Housing Element.

  Sample Language: The City of Redwood City shall monitor progress towards a quantitative goal of 100 new housing units that are subject to a preference for people with developmental disabilities needing the coordinated services of Golden Gate Regional Center to live inclusively in affordable housing.

- **Competitive Advantage for City Land and Financing.** City-owned land and city housing funds are often essential to the development of affordable housing that is financially feasible in high-cost Redwood City. In creating guidelines for the scoring of any competitive request for proposals for city-owned land or city housing funds, the City of Redwood City should grant additional points to affordable housing projects that make a percentage of units subject to a preference for identified categories of people who require coordinated onsite services, including but not limited to people with developmental disabilities who benefit from services of the Golden Gate Regional Center.

  Sample Language: In publishing requests for competitive proposals for any city-owned land or city housing funds, the City of Redwood City shall grant additional points to proposals that include a commitment to make up to 25% of the total units proposed for development subject to a preference for special needs populations that require coordinated housing support services in order to access the affordable housing, including but not limited to people with developmental disabilities who need coordinated services of the Golden Gate Regional Center.

- **Reduced Parking for Transit-Oriented Projects that Include People with Developmental Disabilities.** Under state law, certain transit-oriented projects are allowed reduced parking within a specified distance of certain public transit. Because most adults with developmental disabilities do not drive or own a car, the City should adopt local policies beyond these state requirements in order to further incentivize the inclusion of people with developmental disabilities in transit-oriented housing sites.

  Sample Language: The City of Redwood City shall develop guidelines for approving reduced parking at proposed transit-oriented affordable housing sites where up to 25% of the units are subject to a preference for people with developmental disabilities.

- **Local Density Bonus Concessions.** Above and beyond the density bonus guidelines mandated by state law, the City should provide additional concessions for developers who agree to make up to 25% of the units in a project subject to a preference for people with developmental and other disabilities who require coordinated onsite services.

  Sample Language: In implementing the California density bonus statute, the City of Redwood City shall consider requests for additional concessions beyond those already required by the California density bonus statute when the additional concessions would increase the feasibility of making up to 25% of the units subject to a preference for people with developmental disabilities.

- **Affirmative Marketing of Physically Accessible Units:** Developers are allowed to affirmatively market accessible units to disability-serving organizations in San Mateo County (i.e. Golden Gate Regional Center, Housing Choices Coalition, Center for Independence of Individuals with Disabilities) but rarely take this step. Affirmative marketing is particularly appropriate for people with developmental disabilities who, because of cognitive, communication and social impairment, rely on housing navigation services funded by the Golden Gate Regional Center to find and apply for affordable housing.

  Sample Language: As a condition of the disposition of any city-owned land, the award of city financing or any land use exceptions or waivers for any affordable housing project, the City shall require that the housing developer implement an affirmative marketing plan for physically accessible units which, among other measures, provides disability-serving organizations adequate prior notice of the availability of the accessible units and a process for supporting people with qualifying disabilities to apply.

- **Extremely Low-Income Accessory Dwelling Units.** As part of a larger plan to increase the supply of Accessory Dwelling Units (ADUs), the City should consider creating a forgivable loan program for homeowners who build ADUs and rent them for at least 15 years at Extremely Low Income rent levels to people with developmental disabilities.

  Sample Language: Subject to funding availability, the City of Redwood City shall devise a program of financing for Accessory Dwelling Units subject to rent restrictions for at least 15 years at Extremely Low-Income rent levels to people with developmental disabilities who would benefit from coordinated housing support and other services provided by the Golden Gate Regional Center.

- **Affirmatively Further Fair Housing.** Not only is disability the highest-ranked source of Fair Housing complaints, a growing body of San Mateo County data indicates that people of color with disabilities experience higher rates of housing discrimination and severe rent burden than either people of color without disabilities or whites with disabilities. The City of Redwood City

should incorporate housing goals for people with developmental and other disabilities in plans to affirmatively further fair housing.

YIMBY LAW GREENBELT ALLIANCE

April 21, 2022

Dear Redwood City City Council:

We are writing on behalf of **YIMBY Law** and **Greenbelt Alliance** regarding Redwood City's 6th Cycle Housing Element Update. **YIMBY Law** is a legal nonprofit working to make housing in California more accessible and affordable through enforcement of state law. **Greenbelt Alliance** is an environmental nonprofit working to ensure that the Bay Area's lands and communities are resilient to a changing climate.

We are writing to remind you of Redwood City's obligation to include sufficient sites in your upcoming Housing Element to accommodate your Regional Housing Needs Allocation (RHNA) of **4,588 units**.

In the Annual Progress Reports that Redwood City submitted to HCD, we observe the following trend of housing units permitted in the last three years:

Year	Housing units permitted
2018	406
2019	468
2020	322
Average, 2018-2020	**399**

To meet the 6th cycle RHNA target, the rate of new housing permits in Redwood City would need to increase from **399 units per year** in 2018-2020 to **574 units per year** in the next 8 years. This is a 44% increase from recent years. **If the current pace were to continue, Redwood City would meet only 70% of its new housing target.**

Based on these trends, it is unlikely that Redwood City's existing realistic zoning capacity is sufficient to meet its 6th cycle RHNA target. According to HCD's Housing Element Site Inventory Guidebook, housing elements must analyze the realistic capacity of their sites, which may include considerations of "[l]ocal or regional track records", "past production trends", and "the rate at which similar parcels were developed during the previous planning period". A housing element that does not include a significant rezoning component is therefore unlikely to be compliant with state law.

We urge Redwood City to include a major rezoning component in its Housing Element—a rezoning large enough to close the gap between recent housing production trends and the RHNA target. The rezoning should be within existing communities and should comply with the city's obligation to Affirmatively Further Fair Housing. We also urge Redwood City to ease any other constraints, such as discretionary approval processes or impact fees, that may impede the rate of development on your city's housing sites.

Thank you,

Sid Kapur, East Bay YIMBY (sidharthkapur1@gmail.com)
Rafa Sonnenfeld, YIMBY Law (rafa@yimbylaw.org)
Zoe Siegel, Greenbelt Alliance (zsiegel@greenbelt.org)

March 25, 2022

Planning Director and City Council
City of Redwood City
1017 Middlefield Road
Redwood City, CA 94063

mail@redwoodcity.org

Re: Comments on the Draft Housing Element

Thank you for sharing this early draft of the Housing Element with the public. On behalf of Redwood City's almost 700 residents with intellectual and developmental disabilities, Housing Choices is grateful for the opportunity to comment before it is sent to HCD. Housing Choices is concerned that the draft housing element, as written, needs significant and substantial improvement to ensure equity and inclusion of people with intellectual and developmental disabilities in its housing plans, as well as other Extremely Low Income residents, both with and without disabilities. Please also consider the attached draft comments which we sent you on September 30, 2021.

About Housing Choices

Housing Choices is a housing organization funded by the Golden Gate Regional Center to support people with developmental disabilities to be fully integrated in Redwood City's affordable housing supply. We provide housing navigation services for both individuals and families. We also partner with affordable housing developers to make inclusive housing commitments for people with disabilities in their housing projects. At these projects we provide onsite housing retention services. A Redwood City example of this highly successful model is the new HIP Housing project at 1304 El Camino Real where 8 of the 39 units will include a preference for people with developmental disabilities who will benefit from Housing Choices' coordinated supportive services funded by the Golden Gate Regional Center. The Golden Gate Regional Center has contracted with Housing Choices to provide the Redwood City planning staff and Housing Element consultants with an assessment of the housing needs of people with developmental disabilities, as required by SB 812. In addition, 21 Elements has facilitated Housing Choices' involvement of people with developmental disabilities in the planning process through its Equity Advisory Group.

Weak Engagement with Redwood City's People with Developmental Disabilities

On September 30, 2021, Housing Choices submitted an assessment of the housing needs of Redwood City residents with developmental disabilities which included a list of specific policy and program recommendations (Attachment 1). Receipt was confirmed on October 1, 2021 and we were assured that we would be contacted by the consultant MIG to schedule a meeting to review our comments. To date we have not been contacted by the consultant. As noted below, the assessment of the housing needs of the Redwood City population in the draft Housing Element is very superficial and does not provide enough analysis to support meaningful inclusion of people with developmental disabilities in the city's housing plans. We believe that greater engagement with Housing Choices and Redwood City residents with developmental disabilities would have led to a stronger draft Housing Element.

Noncompliance with HCD Guidance on How to Assess Special Needs Populations

Housing Choices submitted detailed comments to Redwood City on the housing needs of people with developmental disabilities. Our comments followed HCD guidance for a complete analysis of the special housing needs group, including:

- A quantification of the total number of persons and households in the special housing needs group, including tenure (rental or ownership), where possible.
- A quantification and qualitative description of the need (including a description of the potential housing problems faced by the special needs groups), a description of any existing resources or programs, and an assessment of unmet needs.
- Identification of potential program or policy options and resources to address the need.

As discussed below, Redwood City's draft does not incorporate any of the Housing Choices' data and analysis, inaccurately states the housing need, does not discuss the potential housing problems people with developmental disabilities face, does not meaningfully assess unmet needs, and identifies few potential policy or program options to meet the need.

Underestimation of the Redwood City Population with Developmental Disabilities

The draft analysis significantly undercounts the population of Redwood City residents with developmental disabilities. On page H1-9 of the Technical Background Report, Table H1-9 states that there are **509 persons** with developmental disabilities living in Redwood City based on Department of Developmental Services 2020 data of consumer counts by zip code. In contrast, on page H1-10 the report states that "In 2020 … In Redwood City, **493 persons** are reported as consumers of the services provided at the local Regional Center." Both of these numbers are well below the data provided to the city by Housing Choices on September 30, 2021. We provided the Department of Developmental Services' reporting of consumer counts by zip code as of June 2021 for zip codes 94061, 94062, 94063 and 94065 (provided to us by the Redwood City planning staff). This more recent data source directly from the Department of Developmental Services reported a total of **667** people with developmental disabilities served by

the Golden Gate Regional Center in the Redwood City zip codes we were directed to use by the Redwood City planning staff.

Failure to Provide Data Establishing Trends Creating a Greater Need for Housing

The draft Housing Element completely omits data on the living arrangements and changing demographics of Redwood City residents with developmental disabilities, which supports the need for increased access to integrated affordable housing for this population. Housing Choices provided this information because it is vital to an understanding of the "potential housing problems faced by the special needs group". Housing Choices' comments reported on:

1. Continuing increases in the diagnosis of autism affecting growth of the population of Redwood City residents with developmental disabilities (22% increase from 2013-2021) beyond that of the general population (10% increase from 2010-2020)
2. Decreases in the supply of licensed residential care facilities for this population (5% decrease in County supply from 2015-2021) in conjunction with increases in life span (33% increase in age group 62+ from 2015-2021) leading to less turnover in more limited supply of beds.
3. Increased reliance on the family home to provide housing for Redwood City residents with developmental disabilities (10.9% increase from 2013-2021) combined with decreases in the percent of residents transitioning into independent housing (4.5% decrease from 2013-2021) or residential facilities (7% decrease from 2013-2021) which can lead to greater risk of homelessness or displacement when the family is no longer able to provide housing due to death or infirmity of the housing provider.
4. Decreases in age groups 42-61 despite increases in all other age groups including 62+ which Housing Choices attributes to greater risk of displacement from the home community among this age group upon the death or infirmity of the parent who was providing housing

Lack of Comprehensive and Robust Programs and Policies to Meet the Housing Needs of ELI Residents, including those with developmental disabilities

We want to thank planning staff and the consultant who developed this draft for acknowledging the need for affordable housing to increase housing access for people with disabilities, especially those whose sole source of income is from disability benefits such as Supplemental Security Income, which in 2022 has a maximum monthly payment of $1,040, well below minimum income requirements for even the Extremely Low Income housing (30% of AMI) in Redwood City. The lack of housing priced to be affordable to people of Extremely Low Income does not only affect people with disabilities. According to the draft Housing Element, 22% of all Redwood City renters fall under the Extremely Low Income limits which represents the second largest renter income group, exceeded only by Above Moderate Income renters.

According to the 2021 Annual Progress Report between 2015-2021 Redwood City met less than 50% of its Very Low Income RHNA target (of which half are supposed to ELI). In order to address this shortfall, the 2023-2031 draft housing element identified several objectives to

encourage production of Extremely Low Income units such as “Prioritize a portion of CDBG and HOME funding to assist in the development of housing affordable to extremely low income households.”

We strongly encourage the city to go further in its commitment to meeting the need for more units of Extremely Low Income housing. For example, Housing Choices’ comments recommended that any city-owned land, land dedicated to affordable housing under the inclusionary ordinance and affordable housing funds collected locally should be awarded competitively to developers whose proposals go furthest to address the housing needs of Extremely Low Income households.

Secondly, people with developmental disabilities not only need deeply affordable housing, they also need housing that is coordinated with onsite supportive services funded by the Golden Gate Regional Center. In order to address the housing needs of people with developmental disabilities, Redwood City’s policies and programs must prioritize the creation of deeply affordable housing that is coordinated with such services.

Failure to Follow HCD Guidance for AFFH

Housing Choices’ recommended programs and policy recommendations for people with developmental disabilities followed HCD AFFH guidance to promote fair housing choice and access to opportunity to support integration for a historically segregated population. HCD defines fair housing choice as:

1. Actual choice, which means the existence of realistic housing options
2. Protected choice, which means housing that can be accessed without discrimination; and
3. Enabled choice, which means realistic access to sufficient information regarding options so that any choice is informed.

“For persons with disabilities, fair housing choice and access to opportunity include access to accessible housing and housing in the most integrated setting appropriate to an individual’s needs as required under federal civil rights law, including **equitably provided disability-related services** that an individual needs to live in such housing.”

Redwood City’s draft Housing Element left out most of the recommendations made by Housing Choices to create housing that offers actual choice, protected choice and enabled choice for people with developmental disabilities as requested by HCD.

On page H1-10 of the Technical Background Report, accessible housing is defined as “housing that is made accessible to people with disabilities through the positioning of appliances and fixtures, the heights of installations and cabinets, layout of units to facilitate wheelchair movement, etc.” However, the draft makes no mention of the supportive services needed to increase housing accessibility for persons with disabilities that affect cognitive, social and behavioral functioning. This model of housing combined with supportive services has been

shown to be incredibly effective in helping individuals with developmental disabilities find and retain housing.

The City's limited definition of accessibility is also reflected in the draft goals and policies which includes only one program for increasing accessibility (Program H6-3: Accessibility.) with the objective to study implementing a universal design ordinance. While this program will increase accessibility for those with physical disabilities, it will not increase accessibility for many people with developmental disabilities, for whom housing access depends on coordination of housing with supportive services. Supportive services are equally as important to a person with a developmental disability as the physical design of a building is to a person with a physical disability. On page H3-33 of the Technical Background Report the draft housing element does include a list of agencies the city has partnered with to provide "a wide range of supportive services for residents with special housing needs". This list includes non-profits providing supportive services to people who are unhoused and to people with mental health disorders, but includes no partnerships with service providers like Housing Choices who address the housing needs of people with developmental disabilities.

Guidance from HCD for AFFH also recommends that jurisdictions complete an intersectional analysis of housing needs for people with disabilities as "there are significant disparities by race within the population with disabilities". While there is data provided on the housing cost burden of all Redwood City residents by race in the Assessment of Fair Housing there is no intersectional analysis which shows the compounding effects of being a person of color with a disability as compared to a person of color without a disability or a white person with a disability. This is a significant component of Housing Choices' recommendations for Affirmatively Furthering Fair Housing, and yet is omitted from the city's draft.

Noncompliance with HCD Guidance for Completing an Assessment of Fair Housing

In response to the passage of AB 686, HCD released the AFFH Data Viewer to support the outreach and engagement jurisdictions are required to complete as part of their Assessment of Fair Housing. HCD explicitly states in their AFFH guidance that the Assessment of Fair Housing should include local data and knowledge defined as "any locally gathered and available information, such as a survey with a reasonable statistical validity or usefulness for identifying contributing factors, policies, and actions." On page H4-7 of the Technical Background Report it is stated that a survey was administered to support the Fair Housing Assessment which received 160 responses. In a city with a population of over 80,000 residents this low of a response rate seems to indicate that the city did not complete the type of robust, targeted engagement required by HCD in completing the Fair Housing Assessment.

The Assessment also lacks clear data on the demographics of who was surveyed to show that the city was able to reach certain groups that are most likely to face fair housing issues such as BIPOC populations, people with disabilities, female-headed households, the unhoused and others. For instance on page H4-28 when discussing disparities specific to the disability community it is stated that "Of residents with a disability responding to the residents survey, 25

percent said that their home does not meet the needs of their household member." However, there is no indication of how many of the 160 respondents indicated having a disability so it is not evident to the reader of this document if 25% is equivalent to 5, 10 or 40 responses.

There also appears to be an over reliance on data from the AFFH data viewer in the Fair Housing Assessment. For instance on page H4-10 there is an explanation of the different agencies to which Fair Housing Complaints can be reported including HUD, DFEH and local enforcement organizations including Project Sentinel, the Legal Aid Society of San Mateo County, and Community Legal Services of East Palo Alto. This section also explains that state Fair Housing Law covers protected classes beyond that of federal Fair Housing Law. Yet, demographics of Fair Housing complaints are only reported for HUD which received only 57 complaints for San Mateo County from 2017-2021. Whereas, data from Project Sentinel shows that they investigated nearly 300 Fair Housing discrimination cases in San Mateo County from 2015-2020. This does not include reports made to any of the other agencies listed. This would indicate that the draft housing element severely underestimates the number of Fair Housing complaints made in San Mateo County and Redwood City, and therefore cannot accurately gauge how well the city is doing in addressing Fair Housing issues.

We urge you to review the attached comments we submitted on September 30, 2021 and make substantial changes to the Redwood City Housing Element so that it meaningfully addresses the housing needs of its residents with developmental disabilities.

Sincerely,

Kalisha Webster

Kalisha Webster
Senior Housing Advocate
Email kalisha@housingchoices.org
Cell 650-660-7088

675 Seaport Boulevard, Redwood City, CA 94063

April 4, 2022

Diana O'Dell, Principal Planner
City of Redwood City
1017 Middlefield Road, Redwood City, CA 94063

Re: Focused General Plan EIR

Dear Ms. O'Dell:

Following are comments from Seaport Industrial Association (SIA) on the City of Redwood City Focused General Plan Update Related to the Housing, Land Use and Public Safety Element, Environmental Justice goals, policies, and programs and Associated Zoning and Municipal Code Amendments (the "Project"). SIA members include industrial businesses in the Redwood City port area, as well as the Port of Redwood City.

SIA supports the City's commitment to meeting the community's housing needs. We understand that the focused General Plan update will consider potential changes in land use designations citywide to allow Redwood City to meet and exceed the State's Regional Housing Needs Allocation (RHNA) requirements through its Housing Element for 2023-2031.

We offer these topics for inclusion in the scope of the focused environmental review:

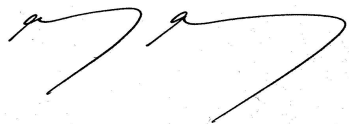
- **Regarding parcel APN052-392-350 (Near 199 Seaport Blvd), consider alternatives to the current General Plan designation.**
    - The origins of the current designation date to the unadopted Inner Harbor Area Plan, as a potential location for live-aboard floating homes in anticipation of changes to Docktown marina. That strategy was never pursued, and the rationale for the current designation should be revisited.
    - Recent efforts to propose housing development on the site were rebuffed by State and federal regulatory agencies, making the barriers to permitting residential development in this part of the Bay appear insurmountable. As a result, it would be prudent for Redwood City not to assume that homes on this site could realistically contribute to meeting RHNA targets.

- In reviewing the respective environmental impacts of the current General Plan designation versus a designation that does not include housing, please consider:

    - Traffic impacts on Seaport Blvd. and the US101/84 freeway interchange, including the interaction of cars and trucks in the port industrial area.
    - Secondary environmental impacts of potential incompatibilities between residential and heavy industrial uses in the port area. Are there potential conflicts between residential and heavy industrial uses under the current designation? If so, how would adverse economic impacts of land use incompatibility on this site affect the environment (e.g., through possible constraints on cargo movement by water and rail and an associated increase in regional truck volume)? How would these impacts compare to those from other possible uses adjacent to the Port, heavy industry, and freight rail?
    - Impacts to the Bay of designating this site for housing. Consider the rationale of regulatory agencies (e.g., U.S. Army Corps of Engineers, CA Regional Water Resources Control Board) that determined that the recent development proposal could not meet State and federal standards.

Thank you for the opportunity to comment. We look forward to the Draft EIR.

Sincerely,



Greg Greenway
Executive Director

SIERRA CLUB
LOMA PRIETA CHAPTER

SAN MATEO, SANTA CLARA & SAN BENITO COUNTIES

March 25, 2021

City of Redwood City
Community Development Department
1017 Middlefield Road
Redwood City, CA 94063

Attn: Diana O'Dell <housingupdate@redwoodcity.org>

RE: Comments on Draft 2023-2031 Housing Element, Redwood City

Dear Ms. O'Dell,

The overall draft Housing Element (HE) appears sound. There are specific areas that will need to be retained or expanded to make sure the final HE contains the key elements needed to make significant progress on addressing the enormous lack of affordable housing in the Bay Area. The HE rightly points out that the housing problem is a regional one and that each city needs to meet or exceed its goal if the housing crisis, particularly for affordable housing, is to be solved.

Highlighted below are the most important goals, policies, and programs in the draft HE that need to be retained and strengthened in the final HE.

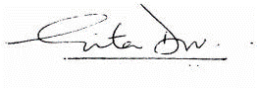
1. The HE aims for a 50% cushion above the RHNA. This is a minimum, but perhaps a higher number should be considered as the ability to actually build out housing has proven, over time, to be very difficult.
2. Increasing affordable housing is strongly emphasized in the draft HE. This is appropriate and the affordable housing should be more strongly focused on low, very low and extremely low-income housing, as these are where the largest needs are and where the lack of inventory is the largest. The very poor jobs/housing fit in the Peninsula can best be addressed with a focus on more affordable housing.
3. The draft map (Figure 1) and proposed policies/programs (Program H1-4) emphasize that the almost the entire city, including R1 areas will need to contribute to the increased housing though such mechanisms as expanded Missing Middle Units (duplex, triplex and fourplex) and ADUs. It is important to retain this broad opportunity for more housing, since R1 is a major part of the total area of the city. Even more priority should be placed on these efforts.
4. The HE proposes several actions to increase density and expand the areas where more dense housing can be located. It is very important to retain and strengthen these actions in the final HE. They include Increasing density in Mixed Use Zones (Program H1-6), Rezone Commercial office to include housing (Program H2-6, Policy H1-1), reducing size requirements and other steps to allow more Missing Middle Housing (Program H4-3, Policy H1.4)

5. Reduced parking requirements are needed to lower costs and increase density (Program H4-7) particularly for projects near transit and retail services. This program should be sped up and put at higher priority.

Below are some additional actions that should be added to the HE to better assure that the goals for housing can be met.

1. Look to increase funding that can be used to support affordable housing. Affordable housing needs to be subsidized and a lack of funding will limit the ability to build the needed affordable housing, particularly for low and very low-income units. This could include establishing or increasing: Vacancy Tax, Commercial Linkage Fees, and Transfer Tax. This could compliment the proposal to reduce costs for affordable units.
2. No mention is made of how housing, particularly new housing, needs to be located so as to be resilient to and viable in the face of climate change. The risks of sea level rise (SLR) near the Bay and wildfires in the hilly and forested areas need to be factored into identifying viable areas for housing including higher density and affordable housing. As an example, the Ferrari Pond property on Redwood Creek is not likely to be viable as a housing site.

Respectfully submitted,



Gita Dev
Co-Chair, Sustainable Land Use Committee
Sierra Club Loma Prieta Chapter

Cc: Redwood City City Council <council@redwoodcity.org>
Redwood City Planning Commission <planningcommission@redwoodcity.org>
Gladwyn D'Souza, Conservation Chair, Sierra Club Loma Prieta Chapter
James Eggers, Executive Director, Sierra Club Loma Prieta Chapter

From: Karen Gernand <karengernand@sbcglobal.net>
Sent: Sunday, March 13, 2022 11:30 PM
To: Housing Update
Subject: Thought of a 33-year resident

[You don't often get email from karengernand@sbcglobal.net. Learn why this is important at http://aka.ms/LearnAboutSenderIdentification.]

Hello, leaders. If the chance to comment comes every eight years, let now be the time I share my thoughts on housing in Redwood City, now that I'm approaching 60, after moving here as a 25 year old—and now with a 24 and 26 year old myself.

Housing that allows people to build community, feel safe, be near family, live and work in the same area: these are goals I would advocate for.

I think of Docktown. An affordable place to live and a place where people knew each other. It's gone.

One- and two-bedroom homes replaced by three- and four-bedroom homes because tax laws disadvantage people who move rather than build. The smaller homes are gone.

Affordable housing, where people cram into spaces to afford exorbitant rents requested by people who are receiving obscene market rate rents but paying drastically reduced property taxes because of the Prop 13 benefit. Unable to afford to live anywhere near their parents, our children are all gone.

What if Redwood City supported and promoted creative communities for tiny homes? What if Redwood City worked with developers who built duplexes, triplexes, quadraplexes rather than 12-story office buildings in a community riddled with empty office space and a future for which the need for office space is uncertain?
What if permits for ADUs required confirmation that the ADUs were to house teachers, nurses, CHP officers, students, foster youth leaving care, or the like rather than gaming rooms, yoga studios, or cabanas to receive the leniencies afforded projects intended to help the housing crisis?

What if people could afford to live near where they work and Redwood City could be a place where our children could purchase even the most modest of homes so that families could grow near each other?

That would be an answer to prayer and a dream come true.

Thank you for seeking resident input.

Sincerely,
Karen Gernand
Lucky RWC home owner since August 1988

Sent from my iPad

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nahc@nahc.ca.gov
NAHC.ca.gov

October 24, 2022

Apollo Rojas
City of Redwood City
1017 Middlefield Road
Redwood City, CA 94063

Re: 2022100449, City of Redwood City 2023-2031 Housing Element Update Project, San Mateo County

Dear Mr. Rojas:

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

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

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

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

AB 52

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

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

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

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

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

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

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

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

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

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

SB 18

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

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

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

NAHC Recommendations for Cultural Resources Assessments

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

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

California Department of Transportation

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

November 15, 2022

SCH #: 2022100449
GTS #: 04-SM-2022-00468
GTS ID: 27977
Co/Rt/Pm: SM/VAR/VAR

Apollo Rojas, Senior Planner
City of Redwood City
1017 Middlefield Road
Redwood City, CA 94063

Re: City of Redwood City 2023-2031 Housing Element Update Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)

Dear Apollo Rojas,

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the City of Redwood City 2023-2031 Housing Element 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 October 2022 NOP.

Project Understanding
This project proposes amendments to elements to the City of Redwood City's General Plan, including housing, land use, and safety, in order to accommodate changes to the Housing Element to meet their fair share of the State's housing needs. The update will promote housing development with proximity to public services, such as transit, and allow the city to comply with state laws and guidelines to address safety and environmental goals.

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)*. Please note that current and future land use projects proposed near and adjacent to the State Transportation Network (STN) may be assessed, in part, through the TISG.

Transportation Impact Fees
We encourage a sufficient allocation of fair share contributions toward multi-modal 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 County and local partners to secure the funding for needed mitigation. Traffic mitigation or cooperative agreements are examples of such measures.

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

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

MARK LEONG
District Branch Chief
Local Development Review

c: State Clearinghouse

PG&E
Mail Code N10A
P.O. Box 770000
San Francisco, CA 94177-0001

U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street
San Francisco, CA 94103-1398

South Bayside System Authority
1400 Radio Road
Redwood City, CA 94065-1220

Midpeninsula Regional Open Space District
330 Distel Circle
Los Altos, CA 94022-1404

Association of Bay Area Governments
101 Eighth Street
Oakland, CA 94607

Sierra Club-Loma Prieta Chapter
Wetlands Subcommittee
2921 E. Bayshore Road, Ste 204
Palo Alto, CA 94303

California Dept. of Boating and Waterways
2000 Evergreen Street, Suite #100
Sacramento, CA 95815

City/County Association of Governments
555 County Center, 5th Floor
Redwood City, CA 94063

California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacrament, CA 95825-8202

Hilda Lafebre
Environmental Planning Manager
San Mateo County Transit District
1250 San Carlos Avenue
San Carlos, CA 94070

Peninsula Corridor Joint Powers Board
1250 San Carlos Avenue
San Carlos, CA 94070-1306

S.F. Bay Area Water Emergency Transportation Authority
Pier 9, Suite 111 The Embarcadero
San Francisco, CA 94111

California Coastal Conservancy
1330 Broadway, 11th Floor
Oakland, CA 94612

Greenbelt Alliance
631 Howard Street, Suite 510
San Francisco, CA 94105

San Mateo County Planning and Building Division
County Office Building
455 County Center
Redwood City, CA 94063

City of Foster City
Community Development Department
610 Foster City Boulevard
Foster City, CA 94404

City of San Carlos
Planning Department
666 Elm Street
San Carlos, CA 94070

City of Belmont
Community Development Department
1 Twin Pines Lane #110
Belmont, CA 94002-3893

Town of Atherton
Planning Department
91 Ashfield Road
Atherton, CA 94027

Town of Woodside
Planning Department
2955 Woodside Road
Woodside, CA 94062

City of Menlo Park
Planning Division
701 Laurel Street
Menlo Park, CA 94025

City/County Association of Governments
Congestion Management Agency
555 County Center, Fifth Floor
Redwood City, CA 94063

Port of Redwood City
Attn: Mike Giari
675 Seaport Boulevard
Redwood City, CA 94063

Seaport Industrial Association
Attn: Greg Greenway
19 Seaport Boulevard
Redwood City, CA 94063

Redwood City Chamber of Commerce
Attn: Amy Buckmaster
1450 Veterans Blvd. #125
Redwood City, CA 94105

Citizens Committee to Complete the Refuge
453 Tennessee Lane
Palo Alto, CA 94306

San Carlos Airport Association
P.O. Box 1183
San Carlos, CA 94070

California Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

Gretchen Kelly, Airport Manager
San Carlos Airport
620 Airport Drive
San Carlos, CA 94070

Sierra Club
Loma Prieta Chapter
3921 E. Bayshore Road, Suite 204
Palo Alto, CA 94303

Friends of Redwood City
P.O. Box 853
Redwood City, CA 94064

Committee for Green Foothills
339 La Cuesta
Portola Valley, CA 94028

Redwood Shores Community Association
274 Redwood Shores Parkway, PMB #603, PMB #205
Redwood Shores, CA 94065 – 1173

Redwood Shores Owners Association
353 Main Street
Redwood City, CA 94063

Shores Business Center Association ('SBCA') c/o The Manor Association
353 Main Street
Redwood City, CA 94063

Sequoia Audubon Society
P.O. Box 620292
Woodside, CA 94062-0292

City of East Palo Alto
Planning & Housing Division
1960 Tate Street
East Palo Alto, CA 94303

County of Santa Clara
Dept of Planning & Development
70 West Hedding Street
7th Floor East Wing
San Jose, CA 95110

LOZEAU DRURY LLP
Attn: Michael Lozeau, Hannah Hughes & Komal Toor
410 12th Street, Suite 250
Oakland, Ca 94607

San Mateo County
Mosquito & Vector Control District
1351 Rollins Road
Burlingame, CA 94010

Dept of Toxic Substances Control, Region 1
Attn: Dave Kereazis
Permitting Division - CEQA
8800 Cal Center Drive, 2nd Floor
Sacramento, CA 95826

Dept of Toxic Substances Control, Region 1
Attn: Dave Kereazis
Permitting Division - CEQA
8800 Cal Center Drive, 2nd Floor
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U.S. Fish and Wildlife Service
San Francisco Bay National Wildlife Refuge Complex
1 Marshlands Rd.
Fremont, CA 94555

California Dept. of Fish and Wildlife
1416 9th Street, 12th Floor
Sacramento, CA 95814

California Dept. of Transportation
111 Grand Avenue
P.O. Box 23660
Oakland, CA 94623-0660

San Francisco Bay Conservation and Development Commission
455 Golden Gate Avenue, Suite 10600
San Francisco, CA 94108-7019

State Historic Preservation Office
1725 23rd Street, Suite 100
Sacramento, CA 95816

Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105

City/County Association of Governments
Airport Land Use Committee
555 County Center, Fifth Floor
Redwood City, CA 94063

California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

Sequoia Union High School District
480 James Avenue
Redwood City, CA 94062-1096

Redwood City School District
750 Bradford Street
Redwood City, CA 94063

Belmont-Redwood Shores School District
2960 Hallmark Drive
Belmont, CA 94002

Dept. of Transportation Planning
P.O. Box 942874, MS32
Sacramento, CA 94274-0001

Caltrans, District 4
111 Grand Avenue, MS 10-D
Oakland, CA 94612

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

California Energy Commission
1516 Ninth Street, MS-29
Sacramento, CA 95814-5512

Department of Health Services
P.O. Box 997413, MS 0025
Sacramento, CA 95899-7413

California Dept. of Parks & Recreation
303 N. Big Trees Park Rd
Felton, CA 95018

Hilda Lafebre, DBIA
Caltrain-SamTrans-Transportation
Authority
1250 San Carlos Avenue
San Carlos, CA 94070

Redwood City Focused General Plan Update Project

Appendix B: List of General Plan Update Goals and Policies

2023-2031 Housing Element
City of Redwood City









HCD Review Draft - v2
October 2022

- **Increase Housing at All Income Levels in High Resource Neighborhoods** by
  - Implementing SB 9 duplexes in single family neighborhoods,
  - Continuing to encourage accessory dwelling units in single family neighborhoods,
  - Increasing middle housing opportunities, and
  - Studying increasing densities (upzoning) in single family neighborhoods beyond SB 9 requirements.
- **Streamline Review** by
  - Creating objective design standards for residential projects, and
  - ~~Exploring~~ Identifying methods ~~of~~ to shorten~~ing~~ permitting times.
- **Supporting Extremely Low Income (ELI) Housing** by
  - Encourag~~e~~ing flexible building types and configurations, including single room occupancy developments (SROs), group homes, and other types of housing for extremely low-income residents ~~.~~
  - Updating requirements to make it easier to permit supportive housing, group homes and care facilities for seniors and non-seniors
  - ~~Pursuing~~Implementing the ~~proposed~~adopted Anti-Displacement Strategy which includes recommendations for preserving unsubsidized affordable housing units and mobile home parks
  - Partnering with community organizations to produce and preserve affordable housing
  - Tracking construction of ELI units in the City's Annual Progress Report and online dashboard
  - Prioritiz~~e~~ing a portion of affordable housing funds to assist in the development of housing affordable to extremely low-income households; and
  - Updat~~e~~ing the Nexus Study, with considerations for incentivizing ELI units as part of the affordable housing ordinance
- **Support Housing for People with Disabilities** by
  - ~~Considering~~ Studying a universal design ordinance that may better address housing needs for people with disabilities, and bring forward ordinance amendments if they provide benefits for housing production for people with disabilities, and
  - Publicizing information about the City's Reasonable Accommodations ordinance.
- **Reduce Costs** by
  - ~~Considering reduction in~~Completing an analysis of parking innovations, reducing parking requirements for residential projects~~, particularly those~~ unbundling of parking, and eliminating minimum parking near high frequency transit ~~and retail services,~~
  - Allowing in-lieu fees for undergrounding utilities associated with residential projects, and
  - Encouraging innovation in construction technology such as mass timber, modular and prefabricated buildings.

Goals and Policies

A. Encourage Diverse Housing Options

Meeting the housing needs of all residents in the community requires a multipronged approach, including the identification of adequate sites for all types of housing, considering the needs of a variety of household types, and other innovative solutions.

Goal H1: Maintain and increase the diversity of housing types in all City neighborhoods.

POLICY H1.1: Ensure adequate housing sites through appropriate land use, zoning, and precise plan designations to accommodate the City's share of regional housing needs.

POLICY H1.2: Create a regulatory environment that enables the private market to build a variety of housing types at all income levels.

POLICY H1.3: Support workforce housing for moderate-income households, including housing for teachers, non-profit employees, and other key groups.

POLICY H1.4: Facilitate middle density housing (duplexes, triplexes, and small apartments) in residential neighborhoods throughout the City.

POLICY H1.5: Continue to explore methods of increasing density in existing single-family neighborhoods in high resource opportunity areas.

Program H1-1: **Adequate Sites to Accommodate Regional Fair Share of Housing Growth.** The City has a Regional Housing Needs Allocation (RHNA) of 1,115 extremely low/very low-income, 643 low-income, 789 moderate-income, and 2,041 above moderate-income units for the 2023-~~2030~~2031 RHNA planning period (4,588 units total). A significant portion of this target will be achieved with credits for approved and proposed projects. The sites inventory identifies vacant and underutilized land in residential and mixed-use zones, as well as projections about accessory dwelling units (ADUs) and missing middle housing and shows that the City can adequately accommodate the remaining RHNA under existing General Plan and Zoning standards.

Objective:

- Continue to track new housing projects and progress toward meeting the City's RHNA and post the sites inventory on the City's webpage.

The lead department responsible for implementation is indicated in **bold** font.

~~*Timeframe:* Ongoing~~

Timeframe: Track housing development and progress toward the RHNA on an ongoing basis, with an annual Housing Element Report to HCD. Annually track approved and proposed housing projects identified to meet the RHNA and implement

alternative actions (i.e., incentives) within a reasonable time (e.g., within one year) if projects are not moving toward completion as anticipated.

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-2: **No Net Loss.** No jurisdiction shall "reduce, or require or permit the reduction of, the residential density for any parcel to, or allow development of any parcel at, a lower residential density" unless the jurisdiction makes written findings that the reduction is consistent with the General Plan, and that the remaining sites identified in the Housing Element are adequate to accommodate the jurisdiction's need (Government Code §65863(b)(1)).

Objective:

- Evaluate residential development proposals for consistency with goals and policies of the General Plan and the 2023-~~2030~~2031 Housing Element sites inventory and make written findings that any density reduction is consistent with the General Plan and that the remaining sites identified in the Housing Element are adequate to accommodate the RHNA by income level. If a proposed reduction of residential density will result in the residential sites inventory failing to accommodate the RHNA by income level, identify and make available additional adequate sites to accommodate the related share of housing need by income level within 180 days of approving the reduced density project.

Timeframe: Ongoing

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-3: **Replacement Unit Requirements.** The replacement of units affordable to the same or lower income level is required as a condition of any development on a nonvacant site identified in the Housing Element consistent with those requirements set forth in Government Code section 65915(c)(3). Replacement requirements shall be applied to sites identified in the inventory that currently have residential uses, or within the past five years have had residential uses that have been vacated or demolished, and:

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- Were subject to a recorded covenant, ordinance, or law that restricts rents to levels affordable to persons and families of low or very low-income; or
- Subject to any other form of rent or price control through a public entity's valid exercise of its police power; or
- Occupied by low or very low-income households

For the purpose of this program, "previous five years" is based on the date the application for development was submitted.

The City shall not approve a housing development project that will require the demolition of residential dwelling units regardless of whether the parcel was listed in the inventory unless a) the project will create at least as many residential dwelling units as will be demolished, and b) certain affordability criteria are met (Government Code section 66300(d)).

Objective:

- Review the Zoning Ordinance and identify amendments to provide clarity to the public regarding Government Code Section 66300(d).
- Evaluate residential development proposals for consistency with Government Code section 65915(c)(3) and Government Code section 66300(d).

Timeframe: Review Zoning Ordinance and ~~consider~~hold hearing with City Council regarding revisions by December 2024 ~~(Immediate);~~; Ongoing

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

EJ Focus

EJ Focus

Densities in High Opportunity Areas. Largely due to a history of redlining and disinvestment, "higher resource opportunity areas" exist throughout the country today, with zoning regulations that limit additional density. The Department of Housing and Community Development (HCD) and the California Tax Credit Allocation Committee (TCAC) produce annual opportunity maps that illustrate an overall composite score derived from characteristics grouped into three main categories: economic, environmental, and educational. The composite score ranges from low to highest resources, with low resources indicating less access to opportunity and high resources indicating greater access to opportunity. The TCAC/HCD Opportunity Maps are intended to display the areas that offer low-income children and

adults the best chance at economic advancement, high educational attainment, and good physical and mental health. Many of Redwood City's higher resource opportunity areas are located in lower density single-family neighborhoods.

Objective: Study changes to R-1 and/or RH neighborhoods that could increase the density allowed~~,~~ (beyond SB 9 requirements), such as including additional density for corner lots. After SB 9 has been in place for three years, the City will analyze what additional zoning changes could be done to the R-1 or RH neighborhoods.

Timeframe: ~~Short Range –~~ Complete community engagement and technical study by ~~2025~~December 2026; hold hearing with City Council regarding study recommendations by February 2027

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-5: **Accessory Dwelling Units**. Accessory dwelling units (ADUs) can offer an additional source of affordable housing to homeowners and the community. The City last updated its ADU ordinance in August 2021 and now has an up-to-date ordinance considered compliant with Government Code Section 65852.2.

Objective:

- Support the development of 506 accessory dwelling units during the planning period and as new State laws modify accessory dwelling unit requirements, update the City's ordinance to comply.

~~*Timeframe:* Ongoing~~

- Continue to offer pre-approved plans, which support streamlining the permit review process.
- Continue to offer flat fees for building permits for ADUs.
- Promote additional pre-approved plans on the City's website.
- Provide homeowner/applicant assistant tools by including and promoting State funding resources including the CalHFA ADU grant program and Casita Coalition financing guide on the City's website, and by promoting home sharing programs to connect ADU owners and renters, and offering counseling with a City staff-ADU specialist.
- Explore and pursue funding options to support ADU construction for lower-income homeowners.
- Continue to provide square footage bonuses for ADA accessible ADUs.

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- Analyze the feasibility of eliminating or reducing permit fees or development impact fees for ADA-accessible ADUs that exceed the minimum square footage thresholds for fee waivers.

Timeframe: Ongoing; Annually review progress toward meeting the RHNA as compared to the projections in ADU production made in the Housing Element as part of the Annual Progress Report process. Monitor ADU production trends, permit fees, and ADU affordability every other year. If biannual monitoring shows that ADU production is falling below the Housing Element projections, then within six months implement appropriate action to increase production, such as additional incentives, adjusting fees, increasing homeowner assistance tools, pursue funding options to support ADU construction for lower-income homeowners, and update communications strategy to increase awareness of existing programs. If necessary, revise strategy in 2026.

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-6: **Densities in Mixed Use Zoning Districts.** To respond to the continued housing demand, Redwood City proposes to increase density in the Mixed Use Zoning Districts.

Objective:

- Complete a zoning text amendment to increase densities in the mixed use zoning districts as follows:
  - Increase ~~MU-C~~MUC from 60 du/ac to 80 du/ac
  - Increase ~~MU-N~~MUN from 40 du/ac to 60 du/ac
  - Increase ~~MU-T~~MUT from 20 du/ac to 40 du/ac for base zoning and 40 du/ac to 60 du/ac for projects that propose community benefits

Timeframe: Immediate – Bring amendments to City Council for hearing in conjunction with the Housing Element ~~adoption~~(by May 31, 2023)

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-7: **Downtown Precise Plan.** The Downtown Precise Plan, adopted in 2011, was established to bring a renewed vitality to Downtown Redwood City. This innovative, flexible planning document has spurred new uses, activity, and housing in our Downtown. The

plan permits a total of 2,500 new housing units, a maximum which has nearly been met.

Objective:

- Remove the maximum residential development limit in the Downtown Precise Plan to continue to foster continued development of this critical area.

Timeframe: Immediate – ~~In conjunction with Housing Element adoption~~Bring Precise Plan amendments to City Council for hearing in December 2022

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-8: **Small Lots.** Due to site design and circulation requirements, development on small lots (lots smaller than a half acre) can be more challenging than on large lots.

Objective:

~~Review~~ Implement the Zoning Ordinance revisions identified in Program H4-3 to facilitate small lot development ~~standards to~~ in the R-2, R-3, R-4, and R-5 zones and ensure that maximum densities can be achieved, even on small lots. ~~Revise~~ Remove barriers to development on small lots with the implementation of SB 9 regulations and identify appropriate standards to facilitate development (Program H4-5). Review mixed use zones, increase heights and densities associated with Program H1-6, and identify any additional incentives that could be incorporated, including amending height maximums to remove height limits based on maximum number of stories. Based on this review, if constraints are identified, within one year of Housing Element adoption, the City will revise any standards as necessary~~.~~

- and will consider incentives for consolidation of parcels, including rounding up when calculating allowable units.

Timeframe: Ongoing; Review development standards and ~~consider~~implement incentives, as appropriate, for achieving higher densities on small lots by December 2024 ~~(Immediate)~~

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

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Program H1-9: **City Owned Sites for Housing.** The City-owned vacant lot at 611 Heller St has been identified as a site suitable for housing, along with the former Maple Street Shelter (1580 Maple). The County of San Mateo has an option to ground lease the Maple Street Site for an affordable housing development. The County issued a request for proposals for the site and selected MidPen Housing to develop the site in August 2022. The City will comply with the Surplus Land Act and will move forward with affordable housing efforts at these locations.

Objective:

- Issue an RFP for development of the Heller St site. Identify any site and development constraints, remove barriers, and apply development incentives.
- Coordinate with the County regarding the proposed affordable housing project at the Maple Street site.

Timeframe: Issue RFP for Heller Site by December 2027; Continue coordinating with the County on their development process for the Maple Street Site until project completion which is estimated for 2025

Responsible Party: **City Manager's Office, Housing Division and Community Development and Transportation**

Funding Sources: Departmental Budget

Program H1-10: **Provide Adequate Sites for Lower Income Households on Nonvacant Sites Previously Identified .**

AB 1397 requires that vacant sites identified in the previous two Housing Elements and non-vacant sites identified in the previous Housing Element only be deemed adequate to accommodate a portion of the housing need for lower-income households if the site is zoned at residential densities consistent with the default density established by HCD (30 units per acre) and the site allows residential use by right for housing developments in which at least 20 percent of the units are affordable to lower-income households.

Objective:

- For vacant sites identified in the last two planning cycles, and nonvacant sites identified in the last planning cycle (see Table H3-21, H3-22, and H3-23 in the Resources Chapter of the Housing Element), rezone the sites to create a housing overlay that allows residential use by right pursuant to Government Code section 65583.2(i) for housing

development projects[1] in which at least 20 percent of the units are affordable to lower-income households. 'By right' means that no review is required under the California Environmental Quality Act (CEQA), unless a subdivision is required, and the project can only be reviewed using objective design standards.

Timeframe: January 2026

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

B. Preserve Existing and Increase Affordable Housing Stock

Preserving the existing housing stock and conserving affordable units in Redwood City are top priorities for the City. In addition, a significant increase in the production of affordable housing will be necessary to meet the existing and growing needs. The City supports the preservation of assisted housing and increasing the citywide affordable housing stock through code enforcement, efforts to retain existing affordable housing, and programs aimed at increasing affordable housing.

Goal H2: Protect and increase the supply of affordable housing, both deed-restricted and unsubsidized affordable units.

POLICY H-2.1: Support the construction, acquisition, rehabilitation, and maintenance of affordable housing, including exploring ways to extend affordability periods on deed-restricted units.

POLICY H-2.2: Consider the use of City-owned property for affordable housing prior to other uses (if the sites are feasible and appropriate for housing), and prioritize housing for extremely low-income households.

POLICY H-2.3: Continue to require affordable housing to be constructed in conjunction with larger residential projects and encourage affordable housing construction associated with nonresidential construction.

POLICY H-2.4: Support the preservation of unsubsidized affordable housing by facilitating conversions to deed-restricted affordable housing and other emerging retention mechanisms.

POLICY H-2.5: Encourage development of home-ownership opportunities that are more affordable, such as condominium and townhome developments and middle density or cottage home types of projects.

[1] Housing development projects include residential-only projects and mixed-use projects where at least 2/3 of the square footage is residential.

Program H2-1: **Code Enforcement.** Redwood City encourages the maintenance and improvement of housing for all income levels through its Code Enforcement Program. The goal of code enforcement is to minimize deferred maintenance and eliminate health and safety problems. Properties that are cited for serious violations and are occupied by low-income households are referred to the City's Home Repair Program for assistance (see Program H2-2).

Objective:

- Continue to implement the Code Enforcement Program to bring substandard housing units into compliance with City building and property maintenance requirements. Code Enforcement will coordinate with the Housing Division to provide information on available rehabilitation assistance to correct code deficiencies.

Timeframe: Ongoing
Responsible Party: **Community Development**
Funding Sources: Departmental Budget



Sustainability Focus
Sustainability Focus
EJ Focus
EJ Focus

Home Repair Programs. To maintain the quality and affordability of older neighborhoods and housing stock, the City offers a home improvement program, providing grants from Community Development Block Grant (CDBG) funds to low-income households for minor home repairs and accessibility modifications.

Objectives:

- Provide grant assistance to facilitate the repair of 20 units per year, including home accessibility modifications for disabled persons.

~~*Timeframe:* Ongoing~~

- Conduct targeted repair program outreach to the Farm Hill neighborhood which has a higher concentration of people with disabilities.

Timeframe: Grant assistance is ongoing annually; Work with program service providers to conduct targeted outreach to the Farm Hill neighborhood by December 2024
Responsible Party: **City Manager's Office, Housing Division**
Funding Sources: CDBG



EJ Focus
EJ Focus

Program H2-3: **Preservation of At-Risk, Affordable Housing**. Retention of deed-restricted affordable housing is a critical part of maintaining the supply of affordable housing in Redwood City, with 29 rental apartment complexes providing 1,203 affordable units. Five of these complexes with a total of 239 units have expiring affordability covenants in Redwood City during the next ten years.

Objectives:

- Annually monitor the affordability status of:
  - Casa de Redwood (134 affordable units)
  - Franklin Street Apartments (31 affordable units)
  - Oxford Apartments (3 affordable units)
  - Redwood City Commons (58 affordable units)
  - Redwood Village (13 affordable units)
- Continue to work with non-profit organizations to preserve existing affordable housing in the City. As needed, support funding applications to preserve at-risk units.
- Proactively outreach to owners with expiring affordability covenants annually, starting three years prior to the affordability expiration date.
- For developments considering converting to market rate, work with the owners and property managers to discuss preservation options and present options to owners for rehabilitation assistance and/or mortgage refinancing in exchange for extending affordability restrictions.
- Hold public hearings upon receipt of any Notice of Intent to Sell or Notice of Intent to Convert to Market Rate Housing, pursuant to Section 65863.10 of the Government Code and provide tenant education on housing rights.

~~*Timeframe:* Ongoing~~

Timeframe: Conduct proactive outreach annually starting by December 2023 for Redwood Plaza Village, Redwood City Commons, and Oxford Apartments; by December 2025 for Franklin Street Apartments; and by December 2026 for Casa de Redwood; Hold public hearings and support funding applications as needed

Responsible Party: **City Manager's Office, Housing Division**

Funding Sources: Departmental Budget, Affordable Housing Funds

Program H2-4: **Affordable Housing Development/Inclusionary Housing.** The development of new affordable housing generally requires subsidies from federal, State, and local sources. The demand for affordable housing throughout the Bay Area is steadily

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increasing, as housing costs have accelerated beyond the capacity of many households. Land write-downs and financial incentives can be significant contributions to meet this demand and create new affordable housing. Redwood City has an active history of providing funding for the acquisition and disposition of housing sites and/or surplus properties for the construction or rehabilitation of affordable housing units. In addition, the City's Affordable Housing Ordinance (AHO) provides a new funding source through in-lieu fee payments and an Affordable Housing Impact fee, as well as requiring on-site affordable housing for larger residential projects.

Objectives:

- Continue to provide subsidies, as funds are available, to assist in the development of affordable housing units, acquisition of land for affordable housing construction, and preservation of existing affordable housing.
- Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for rental and ownership development.
- Conduct an initial revision to the Affordable Housing Ordinance to better support development of affordable housing, especially LIHTC financed housing. The initial revision process will include consultation with local affordable housing developers.
- Update the Affordable Housing Impact Fee Nexus Study as required by Government Code Section 65940.1 and 66016.5 ~~(by January 1, 2030)~~, including a study of target affordability levels and considerations for incentivizing extremely low-income units as part of the affordable housing ordinance. The nexus study update will be conducted as part of the 21 Elements led countywide nexus study update. As part of this update to the nexus study, revise the Affordable Housing Ordinance, as necessary. The City will continue to consult with affordable housing developers on the nexus study update and AHO revisions.
- Continue to allow alternative requirements to the AHO on a project-by-project basis in the near term.

~~*Timeframe:* Ongoing~~

Timeframe: Ongoing; Initial AHO revision and consultation with affordable housing developers in 2023; Update the nexus study in partnership with 21 Elements, review the AHO, consult with affordable housing developers, and as needed, revise the AHO by December 2026

Responsible Party: **City Manager's Office, Housing Division**

Funding Sources: CDBG, HOME, Affordable Housing Funds, Departmental Budget

Program H2-5:

EJ Focus

First-Time Homebuyer Opportunities. The City is committed to expanding homeownership opportunities for lower- and moderate-income households to increase the percentage of homeowners in the community. Under the City's Affordable Housing Ordinance, larger ownership developments (20 units or more) are required to provide 15 percent affordable units onsite. Additionally, as funds are available, Redwood City assists with homeownership opportunities, such as collaborations with Habitat for Humanity, to create new affordable homeownership opportunities.

The City continues to oversee the below market rate (BMR) units at Wyndham Place that are reserved for lower income households. This program ensures that the City has first right of refusal for BMR units that turnover at Wyndham Place, the units are made available to income-eligible buyers, and the resale units remain affordable for the longest period of time (30 years).

As a means of further leveraging homeownership assistance, residents also have access to San Mateo County Mortgage Credit Certificate (MCC) Program and the Housing Endowment & Regional Trust (HEART) First Time Home Buyer Program.

Objectives:

- Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for ownership development.
- Continue to provide homeownership assistance to eligible first-time homebuyers at Wyndham Place.
- Continue to advertise available homeownership financing opportunities with San Mateo County, such as HEART and MCC.
- ~~Consider~~Hold a hearing with the City Council regarding Municipal Code amendments to allow smaller subdivisions (fewer than five units per project) in existing neighborhoods to facilitate homeownership opportunities. If code amendments are not adopted, proactively outreach to developers and homebuyers regarding available homeownership financing options.
- Continue maintaining an affordable housing interest list and promote new affordable housing opportunities to that list, with updates as new opportunities arise.

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Timeframe: Ongoing~~; Short Range –~~ - Conduct annual outreach to developers; update the affordable housing interest list annually; Conduct a study and community engagement on potential subdivision amendments; present in a study session to decision makers ~~within four years of Housing Element adoption~~ by June 2027

Responsible Party: **City Manager's Office, Housing Division; Community Development and Transportation**

Funding Sources: CDBG, HOME, HEART, Affordable Housing Funds, Department Budget

Program H2-6: **Rezone Commercial Office.** Demand is high in Redwood City for both office development and housing development. There are 57 parcels zoned Commercial Office in Redwood City. These parcels currently do not allow residential uses.

Objective:

- Rezone all CO parcels to Mixed Use Corridor (MUC) and complete related General Plan amendments to expand areas where residential and mixed use development are allowed.

Timeframe: ~~Immediate –~~Bring amendments to City Council for hearing in conjunction with the Housing Element ~~adoption~~(by May 31, 2023)

Responsible Party: **Community Development**

Funding Sources: Departmental Budget

Program H2-7: **Mobile Home Parks.** To encourage preservation of mobile home parks in Redwood City, the City proposes to revise the zoning and General Plan designations for existing mobile home parks to match the current use.

Objective:

- Complete zoning map and General Plan Land Use Map amendments to revise zoning districts of existing mobile home parks to MH (Mobile Home Park) and General Plan designations to a residential land use category (i.e., MDR) as follows:
  - Le Mar Mobile Home Park – Rezone to MP and update General Plan Designation to MDR
  - Redwood City (R.C) Mobile Home Park – Rezone to MP and update General Plan Designation to MDR
  - Redwood Mobile Estates – Update General Plan Designation to MDR (zoning is consistent)
  - Harbor Village – No changes needed

Timeframe: ~~Immediate –~~Bring amendments to City Council for hearing in conjunction with Housing Element adoption (by May 31, 2023)

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H2-8:

EJ Focus

Acquisition and Rehabilitation of Existing Housing. Under this program, the City assists nonprofit organizations and affordable housing developers in the acquisition of multi-family housing for lower-income families, individuals, veterans, ~~and~~ seniors, and other special needs populations.

Objective:

- Implement the preservation recommendations from the adopted Anti-Displacement Strategy~~, once adopted.~~.
- Engage with nonprofit housing providers regarding the City's interest in establishing partnerships in the acquisition and rehabilitation of for-sale rental properties, with the goal of completing at least one project during the planning period.

~~*Timeframe:* Ongoing~~

Timeframe: Ongoing; Begin implementing the Anti-Displacement Strategy recommendations in 2022 including establishing a housing preservation fund by December 2023 (Recommendation #2) and start other ongoing preservation efforts in 2023 (Recommendation #3: Support the Housing Endowment and Regional Trust (HEART) of San Mateo County's efforts to create a housing preservation model; Recommendation #4: Support the Lincoln Avenue Capital (LAC) preservation model and other similar preservation models; and Recommendation #5: Support Community Land Trusts of the Anti-Displacement Strategy); Engage with nonprofit housing providers annually

Responsible Party: **City Manager's Office, Housing Division**

Funding Sources: CDBG, HOME, Affordable Housing Funds, Department Budget

C. Opportunities for Special Needs Households

Redwood City residents have a diversity of backgrounds, family types, lifestyles, income levels, and abilities. Due to their personal financial or physical condition, some residents may have housing needs that are not met by conventional housing types. For example, seniors or persons with physical disabilities may need to live in group settings where needed services can be provided and where they can benefit

from increased interaction with others. People facing homelessness because they have lost a job or cannot work benefit from supportive housing, where they can find programs that help them reenter the work force. Redwood City continues to implement creative responses to these and other special housing needs.

Goal H3 Promote, encourage, and assist in the development of housing that meets the needs of special needs communities in Redwood City.

POLICY H3.1: Encourage and provide opportunities for housing for special needs groups, including large families, single-parent headed households, the elderly, the disabled, farmworkers and those in need of emergency shelter and supportive and transitional housing.

POLICY: H3.2: Encourage assisted living and other senior housing options, including veterans housing.

POLICY H3.3: Encourage flexible building types and configurations, including single room occupancy projects (SROs), group homes, and other types of housing for extremely low-income residents.

POLICY H3.4: Support community service organizations that provide housing opportunities and supportive services for people who are homeless or at risk of being homeless.

POLICY H3.5: Promote accessibility features in housing for people with disabilities, including reasonable accommodations and visitability of all new units.

POLICY H3.6: Where practical, encourage the development of units with three or more bedrooms to support larger families.



Program H3-1:

EJ Focus

Senior Housing Needs. The changing needs of the aging baby boomer population include new housing needs and preferences, housing affordability, walkable communities, and access to public transportation, in addition to housing design features that meet the needs of older adults. Redwood City recognizes the changing housing needs of its population, including aging seniors in need of supportive services. To meet such needs, the City encourages the provision of more innovative housing types that may be suitable for the senior community, including shared-housing arrangements, community care facilities, supportive housing, and assisted living for seniors.

Objectives:

- Continue to support organizations that facilitate shared housing arrangements~~.~~ including promoting HIP Housing, which provides affordable housing and resources to special needs groups such as the elderly, on the City's website.

- Proactively contact senior housing providers to gauge senior housing needs and identify changes to zoning or other City policies and regulations that would address these needs.
- Review, revise and consolidate, as needed, the definitions for assisted living, including Residential Care, Senior and Housing for the Elderly.
- ~~Consider amending~~Amend the Zoning Ordinance to ensure that assisted living, senior living, and cottage-style housing are permitted uses in residential zoning districts. Consider streamlining senior housing to ensure faster development review. Identify necessary development standard revisions to facilitate these housing types.

Timeframe: Ongoing~~, consider~~; annually proactively contact senior housing providers; complete zoning amendments by December 2026; hold City Council hearing on Ordinance amendments by December 2027 ~~(Mid Range)~~

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget



EJ Focus

EJ Focus

Residential Care Facilities and Group Homes. Redwood City encourages the development of residential care facilities and group homes. During the previous planning period, the City amended the Zoning Ordinance to remove inconsistencies in definitions and ensure compliance with State law. Additional measures will further facilitate clarity and support housing for persons with disabilities.

Objectives:

- Review, and revise as needed, the Zoning Ordinance to provide more clarity on the provisions of residential care for non-seniors in larger group settings. ~~Consider~~Specifically, revise zoning and permit procedures to permit residential care facilities for seven or more persons with objectivity to facilitate approval certainty in all residential zones. Analyze other opportunities for group housing and a wider variety of residential care facilities.

~~*Timeframe:* By 2024 (Immediate)~~

Timeframe: Bring proposed amendments to City Council for hearing in conjunction with the Housing Element (by May 31, 2023)

Responsible Party: **Community Development and Transportation**

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Funding Sources: Departmental Budget

Program H3-3:

EJ Focus

Housing Options for Special Needs and Extremely-Low Income Households. Redwood City neighborhoods offer a diversity of housing types that vary in type, density, and age. Extremely low-income households and households with special needs have limited housing options. To meet the needs of special needs groups, innovative housing options should also be explored.

Objectives:

- Review the Zoning Ordinance for consistency with AB 2162, effective January 1, 2019, which requires supportive housing to be considered a use by right (ministerially permitted) in zones where multi-family and mixed use are permitted, including nonresidential zones permitting multi-family uses if the proposed housing development meets specified criteria. Comply with AB 2162 requirements to allow for modifications for required parking for units occupied supportive housing residents that are located within one-half mile of a public transit stop.
- ~~Consider amending~~Amend the Zoning Ordinance to explicitly allow ~~SROs, group homes, and other~~housing targeted to extremely low-income ~~housing options.~~households, including SROs and group homes for these income groups.
- Amend the Zoning Ordinance to allow low-barrier navigation centers in the CG-R zoning district. Review, and revise as needed, the Downtown Precise Plan and North Main Precise Plan to allow for low-barrier navigation centers by right ~~in areas zoned for~~, consistent with AB 101. Continue to allow low-barrier navigation centers by-right in mixed-use and nonresidential development~~,~~ consistent with AB 101.
- Prioritize available housing funding to assist in the development of housing affordable to extremely low-income households~~.~~ and other special needs populations.
- As part of the Housing Element Annual Progress Report, track and report the number of new affordable housing units providing a preference for people with special needs, including seniors, homeless, people with developmental disabilities, etc. that are added to the housing stock each year.
- Continue to consult with the San Mateo County Center on Homelessness to further align efforts and coordinate homeless services.
- Continue to support the City's Homeless Outreach Team (HOT) in their efforts to reach out to existing homeless in Redwood City and locate and acquire sites for supportive

housing. HOT is a collaborative of the City's Fair Oaks Community Center and Police Department together with the County of San Mateo's Center on Homelessness, Behavioral Health and Recovery Services Department, and the Department of Housing, as well as non-profit partners such as LifeMoves, Salvation Army, Street Life Ministries, and Mental Health Association. The HOT Team develops outreach and engagement strategies with a focus on reducing chronic homelessness in our community. The City will coordinate with the HOT annually to identify additional measures that the City can do to support HOT's efforts.

- Proactively contact non-profit service providers and developers for persons with disabilities and other special needs groups and notify them about funding opportunities, as they become available.

Timeframe: ~~Mid Range –~~: Conduct a study and community engagement on potential zoning amendments~~; present in~~ and hold a ~~study session to decision-makers within four years of Housing Element adoption~~hearing on the item by December 2024; Ongoing/annually consult with the HOT team to address chronic homelessness

Responsible Party: **Community Development and Transportation**; City Manager's Office, Housing Division; Parks, Recreation & Community Services

Funding Sources: Departmental Budget, CDBG, HOME

Program H3-4: **Public Investment in Infrastructure and Accessibility.** Accessibility in infrastructure is an important component of neighborhood quality of life for Redwood City residents with disabilities.

EJ Focus

Objective:

- Continue to improve access to persons with disabilities through the implementation of the City's ADA Transition Plan that includes ADA improvement to streets, sidewalks, and public facilities.
- Seek funding, including annual Capital Improvement Program (CIP) and/or CDBG allocations, to prioritize infrastructure and accessibility improvements in the low resource opportunity areas.

Timeframe: The ADA Transition Plan is planned for completion no later than 2052, possibly sooner based on funding opportunities

Responsible Party: **ADA Coordinator,** Community Development and Transportation; City Manager's Office, Housing Division
Funding Sources: Departmental Budget, CDBG CIP Budget

D. Remove Constraints to Housing Development

Many factors can encourage or constrain the development, maintenance, and improvement of housing in a community. These factors include physical constraints, land availability, the economics of development, and governmental regulations, all of which may impact the cost and amount of housing produced. Redwood City is committed to removing governmental constraints that might hinder the production of housing and identifying innovative strategies to address nongovernmental constraints.

Goal H4 Reduce the cost of building housing through innovation and flexibility in development regulations.

POLICY H-4.1: Periodically review City regulations, ordinances, permitting processes, and residential fees to ensure that they do not constrain housing development and are consistent with State law; identify changes to City requirements that could reduce the cost of housing.

POLICY H-4.2: Reduce residential parking requirements for residential development in conjunction with increased bike parking or proximity to transit.

POLICY H-4-3: Reduce the permitting time for residential projects and 100% affordable projects through consideration of a by-right approvals, objective standards, and reducing or eliminating the requirement for public hearings.

POLICY H-4.4: Encourage the use of mass timber, modular, pre-fabricated construction and tiny homes as well as other innovative construction types.

Program H4-1: **Site Improvements and Fees.** In Redwood City, a number of onsite improvements are required, including the undergrounding of utilities and upgrading of infrastructure such as sidewalks ~~and~~, alleyways~~.~~, and water mains (to meet fire safety requirements). Fees and on-site requirements can add substantial costs to affordable housing projects.

Objectives:

- Continue to exempt extremely low, very-low, and low-income affordable housing projects from the City's park impact fee and provide a 50-percent discount to moderate-income affordable housing projects and a reduced Transportation Impact fee for affordable housing

developments, senior projects, and transit-oriented development.

- ~~Consider removing~~Remove the utility undergrounding requirement for residential development and ~~allowing~~allow in-lieu fees to contribute towards future undergrounding actions; ~~consider~~pursue exempting 100% affordable housing developments from this fee.
- Analyze and support programs that provide alternative options for meeting fire safety requirements.

Timeframe: Ongoing~~, consider/adopt as appropriate~~; hold a Study Session with City Council on an affordable housing site improvement exemption ~~ordinance~~for utility undergrounding by December 2026 ~~(Mid Range)~~

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H4-2: **General Plan/Zoning Consistency.** Certain parcels in the City have zones that are inconsistent with the General Plan. In conjunction with the Housing Element, the City is updating the zoning to clarify and streamline the development process on these parcels. For example, some sites have a General Plan designation of High Density Residential (HDR) but a zoning designation of General Commercial (CG), making development difficult. Amendments will make the zoning consistent with General Plan policy while preserving the housing potential for the City; the changes only increase density or allow housing where it was not previously allowed before.

Objectives:

- Complete identified zoning map amendments to provide consistency between General Plan designations and zoning districts, ~~with revisions from~~and specifically change nonresidential to residential or mixed-use zoning districts, as applicable for consistency between the General Plan and zoning districts.

Timeframe: Bring proposed amendments to City Council for hearing in conjunction with the Housing Element ~~adoption~~(by May 31, 2023)

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

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Program H4-3: **Middle Housing Development.** Duplexes, triplexes, and smaller ~~multi-family~~multifamily developments can provide affordable housing options to renters and owners, increasing the supply of housing and assisting Redwood City in meeting its regional share of housing growth. To remove constraints and better encourage small multi-family developments in the R-2, R-3, R-4, and R-5 zoning districts, zoning text amendments will be pursued.

Objectives:

- Phase 1: Complete zoning text amendments to encourage middle housing as follows:
  - Minimum Lot Size: Revise to 5,000 square feet for all building types (removing 7,500 minimum square feet for duplexes, 10,000 square feet for triplexes, and 1,000 to 2,000 square feet for each additional unit in excess of three units on the same lot, depending on the zoning district).
  - Minimum Lot Width: Revise to ~~35 feet, or 20 feet wider than the driveway approach width, whichever is greater. This is revised down from~~ 50 feet for all building types. This is a ~~single-family dwelling or duplex and~~ reduction from 75 feet for a triplex or larger development.
  - ~~Parking Requirements:~~Minimum Lot Frontage: Revise to 35 feet for all building types. This is a reduction from 50 feet for a duplex, triplex, or larger development.
  - Parking Requirements: Revise to a minimum of 1 space per unit for a multifamily dwelling outside the downtown and mixed-use zones. This is a reduction of 1 space per unit. Remove requirement for covered parking spaces and allow parking to be located within required setbacks. Remove guest parking requirements. Remove minimum parking requirements for most commercial and all residential in all areas within ½ mile of high frequency transit.
  - Minimum Open Space: Reduce requirement from 300 square feet of open space plus 100 additional square feet per bedroom to ~~150~~300 square feet of open space per unit.

- Phase 2: ~~Consider~~Analyze additional changes to the R-2 through R-5 Zoning Districts to further encourage middle housing, such as establishing a minimum density of no less than 75 percent of the maximum allowable density or one dwelling unit, whichever is greater.

Timeframe: ~~Complete Phase 1 zone text~~Bring proposed amendments to City Council for hearing in conjunction with the Housing Element ~~adoption (Short Range~~(by May 31, 2023); Study and hold a City Council hearing for Phase 2 zone text amendments ~~within three~~by December 2026; Monitor production and affordability every two years ~~of Housing Element adoption (Mid Range)~~and identify/implement alternative actions, if necessary, to meet the RHNA (Ongoing).

Responsible Party: **Community Development**
Funding Sources: Departmental Budget

Program H4-4: **Density Bonuses.** The State Density Bonus law (Government Code §65915) allows developers to receive a density bonus that corresponds to specified percentages of units set aside for lower-income households. Assembly Bill (AB) 2345 amended Density Bonus Law (effective January 1, 2021) and expands and enhances development incentives for projects with affordable and senior housing components. SB 290 (effective January 1, 2022) makes additional changes to encourage affordable housing.

Objective:

- Review the City's density bonus ordinance for consistency with Government Code §65915 and update as needed.
- Monitor State legislation and as changes are made to Government Code §65915, update the City's density bonus accordingly to be consistent. Craft ordinance amendments to minimize the need for continuous updates as State law is amended.

Timeframe: ~~2023 (Immediate); :~~ (Ongoing); Review the ordinance annually to ensure that changes to State law are incorporated.
Responsible Party: **Community Development and Transportation;** City Manager's Office, Housing Division
Funding Sources: Departmental Budget

Program H4-5: **SB 9 Zoning and Subdivision Ordinance Amendments.** SB 9 requires ministerial approval of housing developments containing no more than two residential units in the R-1 and R-H zones. In response, definitions, use regulations, and development standards may need revising.

Objective:

DRAFT

- Review the City's Zoning Ordinance and Subdivision Ordinance and ~~consider~~implement updates as needed to provide clarity and facilitate housing development under SB 9. These include adopting updated definitions, use regulations, development standards, and ministerial processes based on the outcome of a complete SB 9 analysis. Staff anticipates adoption of an ordinance to implement the requirements of SB 9 as part of the Housing Element adoption process. Production and affordability will be monitored every two years and alternative actions will be implemented if necessary to meet the RHNA.

~~*Timeframe:* 2023 (Immediate); Ongoing~~

- In coordination with research being conducted at the State level, pursue opportunities to incentivize and provide funding assistance for homeowners to provide affordable units under SB 9 to further housing opportunities and more affordable homeownership options in high opportunity areas.

Timeframe: Bring proposed amendments to City Council for hearing in conjunction with the Housing Element (by May 31, 2023); Monitor production and affordability every two years and implement alternative action, if necessary; Ongoing coordination

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H4-6: **Permit Processing.** Lengthy review periods associated with permit processing are perceived as one of the major constraints to housing development in any city, with delays increasing the holding cost of developments. Complicated procedures related to various funding sources may also discourage new development especially by affordable and special needs housing developers. To facilitate residential development, the City provides development pre-application review and offers a streamlined processing system that simplifies and expedites development processing.

Objectives:

- Continue to evaluate and improve the streamlined processing system to facilitate residential development.
- ~~Consider approving~~Streamline 100% affordable housing ~~by right.~~ with a priority staff-level planning entitlement process.

Timeframe: Ongoing; ~~Complete analysis~~Revise Zoning Ordinance to streamline 100% affordable housing and ~~community engagement~~ bring amendments to City Council for hearing in conjunction with the Housing Element (by ~~2027 (Mid Range)~~May 31, 2023) .

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H4-7: **Revised Parking Standards.** The cost of constructing parking can be a significant portion of the cost of developing new housing. Redwood City is a leader in providing innovative parking standards; our Downtown Parking Zone includes reduced parking standards, incentives for shared parking open to the public, as well as a required maximum number of spaces per unit. The Zoning Ordinance also allows for shared and multi-family residential developments within the City's major Mixed Use areas also have reduced parking standards.

Objectives:

- ~~Analyze existing parking standards for residential units. Based on this analysis, consider modifications to the Zoning Ordinance to better encourage infill development.~~
- Review parking standards for housing for persons with disabilities and affordable housing and ~~consider~~pursue reductions.
- ~~Consider~~Complete an analysis on parking innovations that could further incentivize housing production, including further parking reductions, eliminating parking minimums near high frequency transit, and/or unbundled parking from the dwelling unit for large housing projects.
- Analyze new technologies that can make more efficient use of existing and future parking, such as Parkade to unbundle parking and Parknav to better utilize on-street parking.
- Continue to allow in-lieu fee payments for parking in the Downtown Parking Zone, as an alternative means of satisfying the development obligation to provide off-street parking.

Timeframe: Initiate analysis in 2023; complete analysis and community engagement ~~by 2025 (Short Term)~~and hold City Council hearing by December 2024. See also Program H4-3 pertaining to parking reductions in R-2, R-3, R-4, and R-5 zones.

Responsible Party: **Community Development and Transportation**

DRAFT

Funding Sources: Departmental Budget

Program H4-8: Farmworker Housing (**Employee Housing Act**~~.~~). The Employee Housing Act establishes requirements for employee housing in a group home structure or group quarters format.

Objective:

~~Review Zoning Ordinance definitions for consistency with the Employee Housing Act.~~

- Review and revise the Zoning Ordinance definitions as needed to comply with California Health and Safety Code Section 17021.6, which generally requires that farmworker employee housing consisting of no more than 36 beds in group quarters (or 12 units or less designed for use by a single household) be treated as an agricultural use.

Timeframe: Complete review, and revise as needed, ~~by 2027 (Mid Range~~bringing amendments to City Council for hearing in conjunction with the Housing Element (by May 31, 2023)

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

Program H4-9: **Housing Accountability Act.** The Housing Accountability Act, among other things, prohibits a jurisdiction from denying or reducing the density of residential and mixed-use projects (comprised of 2/3 or more residential) if the project complies with objective design standards, unless a finding can be made that the project would have an unavoidable impact on public health or safety that cannot be mitigated in any way other than rejecting the project or reducing its size.

Objective:

- Review the Zoning Ordinance and craft revisions that support objective design standards consistent with the Housing Accountability Act. Adoption of objective design standards will facilitate high-quality residential development and compliance with State objectives.
- Streamline the number of projects requiring Planning Commission review and study additional ways to speed housing approvals~~.~~

Timeframe: ~~Adopt Objective Design Standards~~Craft development and design standards that are objective and consistent with the Housing Accountability Act, streamline

housing projects to reduce the level of projects that require Planning Commission review, and bring proposed amendments to City Council for hearing by June 2025 ~~(Short Range)~~.

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget, State grants

Program H4-10: **Water and Sewer Service Providers.** Government Code §65589.7 requires water and sewer providers receive amendments to Housing Elements promptly.

Objective:

- Immediately following adoption, deliver the 2023-~~2030~~2031 Redwood City Housing Element to all providers of sewer and water service within the City of Redwood City.
- As the local water and sewer provider, establish procedures to grant priority water and sewer service to developments with units affordable to lower-income households.

Timeframe: ~~Immediate~~ Deliver the Housing Element to all providers within one month of adoption of the Housing Element; establish priority procedures for affordable developments by December 2024.

Responsible Party: **Community Development and Transportation**

Funding Sources: Departmental Budget

E. Build Partnerships

To meet the extensive housing needs in the Bay Area, partnerships are critical. Redwood City will continue to build relationships and collaborate with a variety of interest groups and entities to further housing goals for the region.

Goal H-5: Form partnerships with community organizations, San Mateo County and other government entities, neighborhoods, homebuilders, local industries and other groups to provide affordable housing and housing for people with special needs.

POLICY H-5.1: Support housing preservation partnerships, such as Housing Endowment and Regional Trust (HEART) of San Mateo County's efforts to create a housing preservation model.

POLICY H-5.2: Promote home sharing programs, such as those provided by HIP Housing's Home Sharing Programs.

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POLICY H-5.3: Pursue and maximize the use of grant funding for the development, preservation, and rehabilitation of affordable housing.

POLICY H-5.4: Continue to work with the County to provide housing for individuals experiencing homelessness and achieving the goal of Functional Zero Homelessness (where every unsheltered homeless person in San Mateo County who chooses assistance can be sheltered in an emergency shelter or in temporary or permanent housing).

POLICY H-5.5: Form community partnerships with Redwood City businesses and other organizations to find resources and support for residents with disabilities or extremely low-income residents.

POLICY H-5.6: Seek additional funding sources for affordable housing, including local options and collaborative regional approaches.

POLICY H-5.7: Encourage developers and contractors to evaluate hiring local labor, hiring from or contributing to apprenticeship programs, increasing resources for labor compliance, and providing living wages.



Program H5-1:

EJ Focus

Equity and Outreach Plan. Engage with the community on housing programs, policies, and affordable housing opportunities. Follow the City's adopted 2021 Equity Plan to ensure participation from those that are not often represented in decision-making about housing construction, protection, and preservation. ~~Consider~~Analyze how various policy and approval decisions burden or benefit different populations in the City.

Objectives:

- Partner with housing advocates and other community organizations to provide information to hard-to-reach populations on housing topics.
- Complete an annual report of Housing Element progress and make available to the public in a user-friendly dashboard format. Notify and invite interested community members to attend and discuss housing production progress at a public hearing.

~~*Timeframe:* Ongoing~~

Timeframe: Ongoing; partner with housing advocates at least annually to provide outreach on evolving housing topics and city initiatives

Responsible Party: **Community Development and Transportation; City Manager's Office, Housing Division**

Funding Sources: Departmental Budget

Program H5-2: **Consult with Public Agencies.** The City actively supports regional collaboration on land use and affordable housing planning efforts.

Objectives:

- Support regional efforts to address housing issues, including participation in 21 Elements, CDBG entitlement jurisdiction monthly meetings, and countywide housing studies.
- Support the San Mateo County Housing Authority's outreach efforts to property owners related to acceptance of Housing Choice Vouchers~~.~~, including help with outreach to property owners with units in high and moderate opportunity areas.
- Work with the County to contact landlords of multi-family complexes in moderate and high opportunity areas every two years and provide fair housing information and assistance.
- Continue to outreach to a wide range of public agencies including County agencies, neighboring jurisdictions, and regional organizations for the development of the City's CDBG Annual Action Plans and Five-Year Consolidated Plans.

Timeframe: Ongoing; proactively outreach to public agencies annually

Responsible Party: **Community Development and Transportation; City Manager's Office, Housing Division**

Funding Sources: Departmental Budget

Program H5-3: **Work with Developers to Affirmatively Market Accessible and Affordable Units.** The City actively supports collaboration between the private sector and service providers to connect persons in need of housing with new housing opportunities.

Objectives:

- Establish a list of community service providers, especially those addressing special needs such as homeless, seniors, and people with disabilities in San Mateo County (i.e., LifeMoves, Samaritan House, HIP Housing, Golden Gate Regional Center, Housing Choices Coalition, Center for Independence of Individuals with Disabilities, etc.) to provide to developers of affordable housing.
- Coordinate with developers to ensure organizations are notified when new affordable housing opportunities become available.

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~~*Timeframe:* Ongoing~~
Timeframe: Ongoing; annually update list of community service providers to provide to affordable housing developers; on an ongoing basis coordinate with developers of proposed projects in Redwood City to ensure organizations are notified when new affordable housing opportunities become available; perform proactive outreach to those developers during the entitlement and building permit process to ensure developers are conducting appropriate marketing about local affordable and accessible housing units.
Responsible Party: **City Manager's Office, Housing Division**
Funding Sources: Departmental Budget

F. Promote Equal Housing Opportunity

To fully meet the community's housing needs, housing must be accessible to all residents, regardless of race, religion, family status, age, or physical disability.

Goal H6 Affirmatively further fair housing opportunities and promote housing throughout the community for all.

POLICY H-6.1: Continue to promote fair housing and support efforts to prevent housing discrimination on the basis of race, ethnicity, ancestry, national origin, religion, sex, sexual orientation, age, marital status, children, disability, or any other arbitrary factor.

POLICY H-6.2: Protect existing tenants, minimize displacement, and provide additional affordable housing opportunities by implementing the City's Anti-Displacement Strategy~~, once adopted~~.

POLICY H-6.3: Support organizations that provide fair housing services to Redwood City residents, and seek to eliminate housing discrimination.

POLICY H-6.4: Promote greater awareness of tenant and landlord rights and obligations.

POLICY H-6.5: Ensure that housing programs maximize choice and avoid unlawful discrimination.

Program H6-1:

EJ Focus

Anti-Displacement Strategy. To address the City's first two housing principles – Preserve and Protect – the City ~~is in the process of developing~~adopted an Anti-Displacement Strategy to serve as a policy roadmap for preventing and mitigating the impacts of displacement.

Objectives:

- ~~Once adopted,~~ Implement recommendations in the Anti-Displacement Strategy including:
  - Tenant Protection Ordinance Amendments
  - Preservation of Unsubsidized Affordable Housing
  - Mobile Home Preservation
  - Community Land Trust Support

Timeframe: Ongoing~~; Adopt~~ ; Begin implementing Anti-Displacement Strategy ~~and begin implementing~~ recommendations in 2022; Complete Tenant Protection Ordinance Amendments by December 2024, establish a housing preservation fund by December 2023 ~~(Immediate~~; Start other ongoing preservation efforts in 2023 including supporting community land trusts (Ongoing), bring proposed amendments for mobile home park rezoning to City Council for hearing in conjunction with the Housing Element (by May 31, 2023)

Responsible Party: **City Manager's Office, Housing Division**

Funding Sources: Departmental Budget, Affordable Housing Funds

Program H6-2:

EJ Focus

Fair Housing Services. The City affirmatively furthers fair housing and supports fair housing organizations that seek to eliminate housing discrimination, and refers all alleged cases of housing discrimination to housing rights organizations. An important tool of the City's Fair Housing efforts is providing education to landlords and tenants to help them both meet their obligations under the law and to support clean, safe, sanitary housing in Redwood City.

Objectives:

- Continue to support fair housing services for Redwood City residents and provide information on housing discrimination and the resources available to victims of discrimination, in both English and Spanish, at City Hall, the public library, and on the City's website. Publish fair housing information, including any community meetings, on non-traditional media such as social media platforms, and conduct targeted outreach to tenants, mobile home park residents, and other lower income populations.
- Continue to educate landlords on reasonable accommodation and disability rights, including posting reasonable accommodation on the website and at prominent locations near the permit counter.
- Continue to support equal opportunity lending programs and ensure that non-discriminatory practices will be

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followed in the selection of residents for participation in housing programs.

Timeframe: Ongoing; post information by December 2024; revisit information and update for accuracy annually
Responsible Party: **City Manager's Office, Housing Division**
Funding Sources: CDBG, Departmental Budget

Program H6-3: **Accessibility.** Universal design is a set of building and design standards that make it easy for someone of any age/ability to occupy a housing unit.

Objective:

- ~~Consider~~Complete analysis and community engagement on implementing a universal design ordinance (accessibility), including considerations of "visitability" of all units, and bring forward ordinance amendments if they provide benefits for housing production for people with disabilities.

Timeframe: Complete analysis and community engagement ~~by 2027 (Mid-Range)~~, including proactive outreach to non-profit service providers and developers, and hold a City Council hearing by December 2027
Responsible Party: **Community Development and Transportation**
Funding Sources: Departmental Budget

Program H6-4: **Water and Sewer Rate Assistance Program (WSRAP).** The City will continue to provide funding assistance to very-low income households in need of help with their water and sewer bills in order to reduce displacement risk of very low-income households due to utility costs.

EJ Focus

Objective:

- Continue funding and implementing the WSRAP

Timeframe: Ongoing
Responsible Party: **Public Works**
Funding Sources: Departmental Budget

Program H6-5:

EJ Focus

Affirmatively Furthering Fair Housing. Federal and State fair housing laws prohibit discrimination in home sales, financing, and rentals based on race, color, religion, sex, or national origin. Redwood City supports and promotes a diverse community of unique neighborhoods where all residents are included and valued, no group is privileged above any other group, and all have opportunity to live in neighborhoods of their choosing. The City has identified the following objectives/meaningful actions to implement:

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
Disproportionate housing needs among households of color, especially Black or African American and Hispanic households	Historical actions that limited economic opportunity and homeownership; limited affordable housing; regional lack of affordable housing supply; high housing costs relative to wages	High	Increase the supply of affordable housing through Implementing Programs: • Program H1-4: Densities in High Opportunity Areas. • Program H2-4: Affordable Housing Development/Inclusionary Housing • Program H2-5: First-Time Homebuyer Opportunities • Program H2-8: Acquisition and Rehabilitation of Existing Housing • Program H3-4: Public Investment in Infrastructure and Accessibility • Program H4-3: Middle Housing Development • Program H4-5: SB 9 Zoning and Subdivision Ordinance Amendments • Program H5-1: Equity and Outreach Plan	~~Increase the supply of affordable housing through Implementing Programs:~~ ~~Program H1-4: Densities~~**Choice and Affordability in High Opportunity Areas**~~.~~ **:** ~~Program H2-4: Affordable Housing Development/Inclusionary Housing~~ ~~Program H2-5: First-Time Homebuyer Opportunities~~ ~~Program H2-8: Acquisition and Rehabilitation of Existing Housing~~ ~~Program H4-3: Middle Housing Development~~ ~~Program H4-5: SB 9 Zoning and Subdivision Ordinance Amendments~~ ~~Program H5-1: Equity and Outreach Plan~~ ~~Program H5-3: Affirmative Marketing of Accessible and Affordable Housing Units~~ ~~Program H6-1: Anti-Displacement Strategy~~ • (from Program H1-4): Study changes to R-1 and/or RH neighborhoods that could increase the density allowed (beyond SB 9 requirements), such as including additional density for corner lots. Complete community engagement and technical study by December 2026; hold hearing with City Council regarding study recommendations by December 2026.

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
			• Program H5-2: Consult with Public Agencies • Program H5-3: Affirmative Marketing of Accessible and Affordable Housing Units • Program H6-1: Anti-Displacement Strategy **Action Outcomes:** Increased public and private investment in low and moderate resource areas and neighborhoods with higher percentages of special needs groups. Through implementation of the City's SB 9 and ADU ordinances, the City seeks to increase affordable housing in high resource single-family districts. The City will seek to collect rental rate information on SB 9 units and ADUs through its permitting process.	• (from Program H2-5): Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for ownership development; Continue to provide homeownership assistance to eligible first-time homebuyers at Wyndham Place; Continue to advertise available homeownership financing opportunities with San Mateo County, such as HEART and MCC; Hold a hearing with the City Council regarding Municipal Code amendments to allow smaller subdivisions (fewer than five units per project) in existing neighborhoods to facilitate homeownership opportunities; Proactively contact owners with expiring affordability covenants annually, starting three years prior to the affordability expiration date; Continue maintaining an affordable housing interest list and promote new affordable housing opportunities to that list, with updates as new opportunities arise. • (from Program H4-3): Complete zoning text amendments to encourage middle housing, including revisions to minimum lot size, lot width, lot frontage, parking requirements, and open space by May 31, 2023; Analyze additional changes to the R-2 through R-5 Zoning Districts to further encourage middle housing, such as establishing a minimum density of no less than 75 percent of the maximum allowable density or one dwelling unit, whichever is greater (Phase 2) by December 2026 • (from Program H4-5): Review the City's Zoning Ordinance and Subdivision Ordinance and implement updates as needed to provide clarity and facilitate housing development under SB 9 by May 31, 2023; In coordination with research being conducted at the

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				State level, pursue opportunities to incentivize and provide funding assistance for homeowners to provide affordable units under SB 9 to further housing opportunities and more affordable homeownership options in high opportunity areas. **Housing Mobility Enhancement:** • (from Program 2-4): Continue to provide subsidies, as funds are available, to assist in the development of affordable housing units, acquisition of land for affordable housing construction, and preservation of existing affordable housing; Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for rental and ownership development; update the affordable housing impact fee nexus study by December 2026, with an initial revision in 2023. • (from Program H5-2): Support the San Mateo County Housing Authority's outreach efforts to property owners related to acceptance of Housing Choice Vouchers, including help with outreach to property owners with units in high and moderate opportunity areas; Work with the County to contact landlords of multi-family complexes in moderate and high opportunity areas every two years and provide fair housing information and assistance (proactively outreach to public agencies annually) • (from Program H5-3): Annually update list of community service providers to provide to affordable housing developers; on an ongoing basis coordinate with developers of proposed projects in Redwood City to ensure organizations are notified when new affordable housing opportunities become available; perform proactive outreach to those developers during the

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				entitlement and building permit process to ensure developers are conducting appropriate marketing about local affordable and accessible housing units **Place-Based Strategies for Community Preservation and Revitalization:** • (from Program H3-4): Continue to improve access to persons with disabilities through the implementation of the City's ADA Transition Plan (slated for completion citywide by 2052) that includes ADA improvement to streets, sidewalks, and public facilities; Annually seek funding, including annual Capital Improvement Program (CIP) and/or CDBG allocations, to prioritize infrastructure and accessibility improvements in the low resource opportunity areas. • (from Program H5-1): Partner with housing advocates and other community organizations to provide information to hard-to-reach populations on housing topics and city initiatives at least annually **Displacement Protection:** • (from Program H2-8): Begin implementing the preservation recommendations from the adopted Anti-Displacement Strategy in 2022, establish a housing preservation fund by December 2023, and start recommendations #3-5 of the Anti-Displacement Strategy in 2023; Engage with nonprofit housing providers regarding the City's interest in establishing partnerships in the acquisition and rehabilitation of for-sale rental properties, with the goal of completing at least one project during the planning period.

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				• (from Program H6-1): Begin implementing Anti-Displacement Strategy recommendations in 2022; Complete Tenant Protection Ordinance Amendments by December 2024, establish a housing preservation fund by December 2023; Start other ongoing preservation efforts in 2023 including supporting community land trusts (Ongoing), bring proposed amendments for mobile home park rezoning to City Council for hearing in conjunction with the Housing Element (by May 31, 2023)
Concentrations of Black or African American and Hispanic residents in low resource areas	Concentration of affordable housing and housing density in central areas of the city with low environmental health and high social vulnerability; lack of affordable housing in higher resourced neighborhoods.	Moderate	Add affordable housing in moderate to high resource areas and address contributing factors through Implementing Programs: • Program H1-4: Densities in High Opportunity Areas • Program H1-5: Accessory Dwelling Units • Program H2-4: Affordable Housing Development/Inclusionary Housing • Program H2-5: First-Time Homebuyer Opportunities • Program H4-3: Middle Housing Development • Program H4-5: SB 9 Zoning and Subdivision Ordinance Amendments	~~Add affordable housing in moderate to high resource areas~~**Choice and** ~~address contributing factors through Implementing Programs:~~ ~~Program H1-4: Densities~~**Affordability in High Opportunity Areas:** ~~• Program H1-5: Accessory Dwelling Units~~ ~~• Program H2-4: Affordable Housing Development/Inclusionary Housing~~ ~~• Program H2-5: First-Time Homebuyer Opportunities~~ ~~• Program H4-3: Middle Housing Development~~ ~~• Program H4-5: SB 9 Zoning and Subdivision Ordinance Amendments~~ • ~~Program H5-3: Affirmative Marketing of Accessible and Affordable Housing Units~~(from Program H1-4): Study changes to R-1 and/or RH neighborhoods that could increase the density allowed (beyond SB 9 requirements), such as including additional density for corner lots. Complete community engagement and technical study by December 2026; hold hearing with

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
			• Program H5-2: Consult with Public Agencies • Program H5-3: Affirmative Marketing of Accessible and Affordable Housing Units **Action Outcomes:** An increased variety of housing options available to Redwood City residents throughout the city, including areas that have in the recent past only allowed single-family (largely ownership) housing. Provide adequate sites for over 1,800 very low-income households, over 1,300 low-income households, over 1,700 moderate-income households, and over 1,600 above moderate income households, exceeding the City's RHNA requirements by more than 150%.	City Council regarding study recommendations by December 2026. • (from Program H1-5): Continue to offer pre-approved plans, which support streamlining the permit review process and flat fees for building permits for ADUs; Promote additional pre-approved plans on the City's website; Provide homeowner/ applicant assistant tools by including and promoting State funding resources including the CalHFA ADU grant program and Casita Coalition financing guide on the City's website, and by promoting home sharing programs to connect ADU owners and renters, and offering counseling with a City staff-ADU specialist; Explore and pursue funding options to support ADU construction for lower-income homeowners; Continue to provide square footage bonuses for ADA accessible ADUs; Analyze the feasibility of eliminating or reducing permit fees or development impact fees for ADA-accessible ADUs that exceed the minimum square footage thresholds for fee waivers (If biannual monitoring shows that ADU production is falling below the Housing Element projections, then within one year implement appropriate action to increase production.) • (from Program 2-4): Continue to provide subsidies, as funds are available, to assist in the development of affordable housing units, acquisition of land for affordable housing construction, and preservation of existing affordable housing; Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for rental and ownership development; update the affordable housing impact fee nexus study by December 2026, with an initial revision in 2023.

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				• (from Program H2-5): Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for ownership development; Continue to provide homeownership assistance to eligible first-time homebuyers at Wyndham Place; Continue to advertise available homeownership financing opportunities with San Mateo County, such as HEART and MCC; Hold a hearing with the City Council regarding Municipal Code amendments to allow smaller subdivisions (fewer than five units per project) in existing neighborhoods to facilitate homeownership opportunities; Proactively contact owners with expiring affordability covenants annually, starting three years prior to the affordability expiration date; Continue maintaining an affordable housing interest list and promote new affordable housing opportunities to that list, with updates as new opportunities arise. • (from Program H4-3): Complete zoning text amendments to encourage middle housing, including revisions to minimum lot size, lot width, lot frontage, parking requirements, and open space by May 31, 2023; Analyze additional changes to the R-2 through R-5 Zoning Districts to further encourage middle housing, such as establishing a minimum density of no less than 75 percent of the maximum allowable density or one dwelling unit, whichever is greater (Phase 2) by December 2026 • (from Program H4-5): Review the City's Zoning Ordinance and Subdivision Ordinance and implement updates as needed to provide clarity and facilitate housing development under SB 9 by May 31, 2023; In coordination with research being conducted at the

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				State level, pursue opportunities to incentivize and provide funding assistance for homeowners to provide affordable units under SB 9 to further housing opportunities and more affordable homeownership options in high opportunity areas. **Housing Mobility Enhancement:** • (from Program H5-2): Support the San Mateo County Housing Authority's outreach efforts to property owners related to acceptance of Housing Choice Vouchers, including help with outreach to property owners with units in high and moderate opportunity areas; Work with the County to contact landlords of multi-family complexes in moderate and high opportunity areas every two years and provide fair housing information and assistance (proactively outreach to public agencies annually) • (from Program H5-3): Annually update list of community service providers to provide to affordable housing developers; on an ongoing basis coordinate with developers of proposed projects in Redwood City to ensure organizations are notified when new affordable housing opportunities become available; perform proactive outreach to those developers during the entitlement and building permit process to ensure developers are conducting appropriate marketing about local affordable and accessible housing units
Concentrations of Black or African American and Hispanic	Housing density most supported and appropriate among transportation	Moderate	Reduce environmental hazards and implement environmental justice measures adopted into the General Plan in ~~2022.~~2023. Implement the Redwood City	**Place-Based Strategies for Community Preservation and Revitalization:** • Reduce environmental hazards and implement environmental justice and air quality measures adopted into the General Plan in 2023, including the prioritization

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
residents in environmental hazard areas	nodes; residents resistant to added density in single family detached neighborhoods.		Equity Plan's Equity Lens, Geographic Equity Index, and Equity Review policies. Provide additional housing opportunities in low environmental hazard areas through Implementing Programs: • Program H1-4: Densities in High Opportunity Areas • Program H1-5: Accessory Dwelling Units • Program H1-6: Densities in Mixed Use Zoning Districts • Program H2-4: Affordable Housing Development/ Inclusionary Housing • Program H2-5: First-Time Homebuyer Opportunities • Program H3-4: Public Investment in Infrastructure and Accessibility • Program H5-1: Equity and Outreach Plan • Program H4-3: Middle Housing Development • Program H4-5: SB 9 Zoning and Subdivision Ordinance Amendments **Action Outcomes:** The City is taking an active role to curb displacement of current lower-income residents while also	of funding for parks and recreational facilities, pedestrian and bicycle infrastructure, and outreach in environmental justice communities. • Implement the Redwood City Equity Plan. The City has committed to apply an Equity Lens to the implementation of projects, programs, and decisions, weighing burdens and benefits of affected parties, engagement of those most impacted by inequities, and considering potential unintended consequences. The City also commits to considering the Geographic Equity Index as part of identifying potential benefits and burdens, as well as to identify communities in which to focus engagement efforts. The City also committed to an Equity Review of City Policies, including best practices such as inclusive hiring, inclusive sourcing or procurement, and economic mobility/financial empowerment. • (from Program H3-4): Continue to improve access to persons with disabilities through the implementation of the City's ADA Transition Plan (slated for completion citywide by 2052) that includes ADA improvement to streets, sidewalks, and public facilities; Annually seek funding, including annual Capital Improvement Program (CIP) and/or CDBG allocations, to prioritize infrastructure and accessibility improvements in the low resource opportunity areas. • (from Program H5-1): Partner with housing advocates and other community organizations to provide information to hard-to-reach populations on housing topics and city initiatives at least annually **Choice and Affordability in High Opportunity Areas (and Low Environmental Risk Areas):**

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
			supporting new development where it makes sense, near transit, services, and jobs and in High Resource areas. The City's Anti-Displacement Strategy has established policies to preserving existing affordable housing. In addition, through the City's Equity Plan and proposed environmental justice policies in the General Plan, the City has identified Equity Lens, Geographic Equity Index, and Equity Review policies to improve environmental conditions, and support the needs of lower income residents in environmental justice areas.	• (from Program H1-4): Study changes to R-1 and/or RH neighborhoods that could increase the density allowed (beyond SB 9 requirements), such as including additional density for corner lots. Complete community engagement and technical study by December 2026; hold hearing with City Council regarding study recommendations by December 2026. • (from Program H1-5): Continue to offer pre-approved plans, which support streamlining the permit review process and flat fees for building permits for ADUs; Promote additional pre-approved plans on the City's website; Provide homeowner/ applicant assistant tools by including and promoting State funding resources including the CalHFA ADU grant program and Casita Coalition financing guide on the City's website, and by promoting home sharing programs to connect ADU owners and renters, and offering counseling with a City staff-ADU specialist; Explore and pursue funding options to support ADU construction for lower-income homeowners; Continue to provide square footage bonuses for ADA accessible ADUs; Analyze the feasibility of eliminating or reducing permit fees or development impact fees for ADA-accessible ADUs that exceed the minimum square footage thresholds for fee waivers (If biannual monitoring shows that ADU production is falling below the Housing Element projections, then within one year implement appropriate action to increase production.) • (from Program H1-6): Complete a zoning text amendment to increase densities by 20 du/ac in the mixed use zoning districts by May 31, 2023

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				• (from Program H4-3): Complete zoning text amendments to encourage middle housing, including revisions to minimum lot size, lot width, lot frontage, parking requirements, and open space by May 31, 2023; Analyze additional changes to the R-2 through R-5 Zoning Districts to further encourage middle housing, such as establishing a minimum density of no less than 75 percent of the maximum allowable density or one dwelling unit, whichever is greater (Phase 2) by December 2026 • (from Program H4-5): Review the City's Zoning Ordinance and Subdivision Ordinance and implement updates as needed to provide clarity and facilitate housing development under SB 9 by May 31, 2023; In coordination with research being conducted at the State level, pursue opportunities to incentivize and provide funding assistance for homeowners to provide affordable units under SB 9 to further housing opportunities and more affordable homeownership options in high opportunity areas. **Housing Mobility Enhancement:** • (from Program 2-4): Continue to provide subsidies, as funds are available, to assist in the development of affordable housing units, acquisition of land for affordable housing construction, and preservation of existing affordable housing; Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for rental and ownership development; update the affordable housing impact fee nexus study by December 2026, with an initial revision in 2023. • (from Program H5-2): Support the San Mateo County Housing Authority's outreach efforts to property owners

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				related to acceptance of Housing Choice Vouchers, including help with outreach to property owners with units in high and moderate opportunity areas; Work with the County to contact landlords of multi-family complexes in moderate and high opportunity areas every two years and provide fair housing information and assistance (proactively outreach to public agencies annually)
Loss of affordable housing; Displacement of residents	Limited affordable housing; regional lack of affordable housing supply; high housing costs relative to wages	High	Support anti-displacement efforts and retention of affordable housing through Implementing Programs that protect residents from displacement and create more affordable housing to address lack of supply and high costs: • Program H1-3: Replacement Unit Requirements • Program H2-3: Preservation of At-Risk, Affordable Housing • Program H2-4: Affordable Housing Development/ Inclusionary Housing • Program H2-5: First-Time Homebuyer Opportunities • Program H2-8: Acquisition and Rehabilitation of Existing Housing ~~Program H2-4: Affordable Housing~~	**Displacement Protection:** • (from Program H1-3): The City shall not approve a housing development project that will require the demolition of residential dwelling units regardless of whether the parcel was listed in the inventory unless a) the project will create at least as many residential dwelling units as will be demolished, and b) certain affordability criteria are met. • (from Program H2-3): Continue to work with non-profit organizations to preserve existing affordable housing in the City; As needed, support funding applications to preserve at-risk units; Conduct proactive outreach to owners of housing with expiring affordability covenants annually, starting three years prior to the affordability expiration date. • (from Program H2-8): Begin implementing the preservation recommendations from the adopted Anti-Displacement Strategy in 2022, establish a housing preservation fund by December 2023, and start recommendations #3-5 of the Anti-Displacement Strategy in 2023; Engage with nonprofit housing providers regarding the City's interest in establishing partnerships in

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
			~~Development/Inclusionary Housing~~ ~~Program H2-5: First-Time Homebuyer Opportunities~~ • Program H3-3: Housing Options for Special Needs and Extremely-Low Income Households • Program H5-1: Equity and Outreach Plan • Program H5-3: Affirmative Marketing of Accessible and Affordable Housing Units • Program H6-1: Anti-Displacement Strategy • Program H6-4: Water and Sewer Rate Assistance Program **Action Outcomes:** Strategic tenant protection policy recommendations will slow the pace and mitigate the impacts of displacement, and development of partnerships and strategies will preserve unsubsidized affordable housing (non-deed restricted). The Anti-Displacement Strategy provides a framework to meaningfully address displacement and serve the	the acquisition and rehabilitation of for-sale rental properties, with the goal of completing at least one project during the planning period, • (from Program H6-1): Begin implementing Anti-Displacement Strategy recommendations in 2022; Complete Tenant Protection Ordinance Amendments by December 2024, establish a housing preservation fund by December 2023; Start other ongoing preservation efforts in 2023 including supporting community land trusts (Ongoing), bring proposed amendments for mobile home park rezoning to City Council for hearing in conjunction with the Housing Element (by May 31, 2023) • (from Program H6-4): Continue to provide funding assistance to very-low income households in need of help with their water and sewer bills in order to reduce displacement risk of very low-income households due to utility costs. **Place-Based Strategies for Community Preservation and Revitalization:** • (from Program H5-1): Partner with housing advocates and other community organizations to provide information to hard-to-reach populations on housing topics and city initiatives at least annually **Housing Mobility Enhancement:** • (from Program 2-4): Continue to provide subsidies, as funds are available, to assist in the development of affordable housing units, acquisition of land for affordable

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Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
			City's most vulnerable residents.	housing construction, and preservation of existing affordable housing; Continue implementing the Affordable Housing Ordinance including below-market-rate (BMR) requirements for rental and ownership development; update the affordable housing impact fee nexus study by December 2026, with an initial revision in 2023. • (from Program H5-2): Support the San Mateo County Housing Authority's outreach efforts to property owners related to acceptance of Housing Choice Vouchers, including help with outreach to property owners with units in high and moderate opportunity areas; Work with the County to contact landlords of multi-family complexes in moderate and high opportunity areas every two years and provide fair housing information and assistance (proactively outreach to public agencies annually) • (from Program 3-3): By December 2024, conduct Zoning Ordinance amendments to allow supportive housing consistent with AB 2162, explicitly allow housing targeted to extremely low-income households, including SROs and group homes for these income groups, to allow low-barrier navigation centers in the CG-R zoning district, DTPP, and North Main Precise Plan, and prioritize funding to assist extremely low-income housing development. • (from Program H5-3): Annually update list of community service providers to provide to affordable housing developers; on an ongoing basis coordinate with developers of proposed projects in Redwood City to ensure organizations are notified when new affordable housing opportunities become available; perform proactive outreach to those developers during the entitlement and building permit process to ensure

Identified Fair Housing Issue	Contributing Factors	Priority Level	Meaningful Actions	Targets and Timeframe
				developers are conducting appropriate marketing about local affordable and accessible housing units

Timeframe: Varies by action item, see action items above.
Responsible Party: **Community Development and Transportation; City Manager's Office, Housing Division**
Funding Sources: Departmental Budget, Affordable Housing Funds, CDBG, HOME

Summary of Quantified Objectives

Table ~~H2-1~~H-3 summarizes Redwood City's quantified objectives for the 2023-~~2030~~2031 Housing Element planning period.

Table ~~H2-1~~H-3: Summary of ~~2021~~2023-~~2029~~2031 Housing Element Quantified Objectives

	Income Level					
	Extremely Low	Very Low	Low	Moderate	Above Moderate	Total
Construction Objective (RHNA)	1,115		643	789	2,041	4,588
Rehabilitation Objective	160				--	160
At-Risk Affordable Housing Units to Preserve	239			--	--	239

polices, and programs:

- Plan for sustainable open space, water, energy, and air quality within our finite resources.
- Work to develop attractive, convenient transportation alternatives, including a transportation hub and ferry system.
- Design for active pedestrian and bicycle-friendly streets and public spaces.
- Partner with our neighborhoods, particularly vulnerable communities and environmental justice communities, to improve the health, safety, and wellbeing for all in our community.

GOAL PS-1: Maintain good local air quality, and reduce the local contributions of airborne pollutants to the air basin.

Policy PS-1.1: Work with neighboring jurisdictions and regional agencies—including the Association of Bay Area Governments (ABAG), the Bay Area Air Quality Management District (BAAQMD), and the Metropolitan Transportation Commission (MTC)—to reduce motor vehicle emissions.

Policy PS-1.2: Minimize vehicle emissions by reducing automobile use and encouraging alternative means of transportation by:

- Planning patterns of land use and development to create complete neighborhoods where residents of environmental justice communities can meet their daily needs through active transportation.
- Prioritizing capital improvement projects that support increased non-motorized and sustainable modes of transportation in environmental justice communities.
- Investing in and designing transportation infrastructure to improve safety in environmental justice communities, especially for vulnerable road users such as pedestrians, bicyclists, children, seniors, and people with disabilities.

Policy PS-1.3: Pursue efforts to reduce air pollution and GHG emissions by promoting the use of renewable energy (e.g., solar, wind, and hydroelectric power), and implement effective energy conservation and efficiency measures.

Policy PS-1.4: Integrate air quality planning with land use, economic development, and transportation planning.

Policy PS-1.5: Require projects that generate potentially significant levels of air pollutants to incorporate the most effective air quality mitigation into project design, as feasible.

GOAL PS-2: Minimize the potential impacts from land uses that may pollute proximate to sensitive receptors, including Environmental Justice communities.

Policy PS-2.1: Consider surrounding land uses when locating sensitive receptors such as schools, hospitals, and residential uses, particularly in Environmental Justice communities, so they are not unreasonably exposed to uses that generate pollutants considered detrimental to human health.

Policy PS-2.2: Prioritize opportunities for compact housing in Downtown and other areas buffered from designated through truck routes.

Policy PS-2.3: Consider re-routing truck routes and high volumes of non- residential traffic away from residential neighborhoods, particularly high-density residential neighborhoods and Environmental Justice communities.

Policy PS-2.4: Avoid placing sensitive uses within 500 feet–or other distance deemed to be appropriate based on project-specific health risk assessment data–of the Port of Redwood City, related heavy industrial areas, and any roadways serving Port uses.

Policy PS-2.5: Encourage the development and/or implementation of new technologies that address or mitigate pollutant emissions at the Port, in the Environmental Justice communities, transportation facilities, and industrial use locations.

Policy PS-2.6: Minimize potential impacts from air pollution on sensitive uses throughout Redwood City, including the Environmental Justice communities, near freeways, truck routes, high-volume arterials and sources of toxic air contaminants (TACs)[1].

Policy PS-2.~~6~~7: Require all land uses proposed within 500 feet of U.S. 101, El Camino Real, and Woodside Road that will house, accommodate, or serve sensitive receptors to incorporate appropriate design and construction features (e.g., filters on HVAC systems) that reduce potential exposure of persons to pollutants.

Policy PS-2.~~7~~8: Discourage the establishment of any new school or housing for senior residents within 500 feet of a freeway.

GOAL PS-~~8~~3: Protect Environmental Justice community residents from the harmful effects of air pollutants.

[1] TACs can include but are not limited to asbestos, chloroform, vinyl chloride, inorganic arsenic, nickel, formaldehyde, particulate emission from diesel-fuled engines, environmental tobacco smoke per California Air Resources Board (ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminents)

Policy PS-3.1: Reduce mobile sources of air pollution in and adjacent to the Environmental Justice communities.

Policy PS-8.2: Limit development of new sensitive uses in the Environmental Justice communities near freeways, truck routes, high volume arterials, and sources of toxic air contaminants (TACs). Require any such uses to incorporate measures to minimize the potential impacts from air pollutants.

Policy 3: Limit development of new sources of toxic air contaminants (TACs) in and near EJ communities. Require any such uses to incorporate measures to reduce the concentration of emissions.

Policy 4: [Encourage and support] existing sensitive uses in EJ communities near freeways, truck routes, high-volume arterials, and sources of toxic air contaminants (TACs) to implement measures to minimize potential impacts from air pollution.

Policy 5: [Encourage and support] existing uses that are sources of toxic air contaminants (TACs) in and near EJ communities to implement measures to minimize potential impacts from air pollution.

~~Policy 6: Communicate risks of living near freeway to residents of EJ communities.~~

Policy 7: Implement the strategies in the Transportation Element and the Public Safety Element that reduce vehicle miles traveled or improve air quality including: Goal BE-25, BE-26, BE-30, BE-31, PS-3,PS-4, PS-5.

GOAL PS-3: Reduce the volume of pollutants generated by motorized vehicles.

Policy PS-3.1: Support programs that increase ridesharing, reduce pollutants generated by vehicle use, and meet the transportation control measures recommended by BAAQMD in the most recent Clean Air Plan.

Policy PS-3.2: Support programs that decrease vehicle emissions by increasing the number of housing units located near jobs and transit, and encouraging commuting via transit, walking, and bicycling; thereby decreasing vehicle miles traveled (VMT).

Policy PS-3.3: Implement policies of the Built Environment Element that provide for compact, urban-style forms of development and complete streets and neighborhoods to reduce vehicle emissions by placing residents closer to jobs and services and providing alternative modes of transportation.

Policy PS-3.4: Implement the policies of the Built Environment Element that promote transportation mode shifts away from private automobile travel.

Policy PS-3.5: Work with local schools and school districts to encourage children to walk or bike

to school.

GOAL PS-4: Promote efficient management and use of energy resources to help minimize greenhouse gas emissions.

Policy PS-4.1: Continue to implement the City's Reach Codes ordinance. During code adoption cycles, work to enhance Reach Codes by reducing the number of possible exemptions, extending coverage to existing buildings, and introducing the phase-out of natural gas hookups.

Policy PS-4.2: Establish City energy conservation practices that lead by example.

Policy PS-4.3: Encourage and promote the establishment of local renewable energy generation projects, including solar and battery storage projects.

Policy PS-4.4: Promote urban forestation and other ecosystems that offer significant carbon mitigation potential.

GOAL PS-5: Mitigate against climate change.

Policy PS-5.1: Consult with State agencies and ABAG to implement AB 32, the Global Warming Solutions Act of 2006, and SB 375, the Sustainable Communities and Climate Protection Act, and in particular, utilize incentives to facilitate infill and transit-oriented development.

Policy PS-5.2: Strive to reduce per capita GHG emissions and total municipal GHG emissions to 50 percent below 2005 levels by 2030.

Policy PS-5.3: Incorporate consideration of, and measures to mitigate the risks of, sea level rise, increased precipitation, flooding, extreme heat events, severe winds, prolonged drought, and other effects of climate change into the planning process.

GOAL PS-6: Protect built and natural environments from the effects of climate change.

Policy PS-6.1: Consider developing and adopting a standalone Citywide Climate Adaptation Plan.

Policy PS-6.2: Ensure consistency in climate change adaptation planning between the City's General Plan Safety Element and other climate change and adaptation planning efforts, including the City's Climate Action Plan, the San Mateo County Multi-Jurisdictional Local Hazard Mitigation Plan, and Climate Ready San Mateo County, and County of San Mateo's multi-sector adaptation strategy.

Policy PS-6.3: Support research that examines the effects of climate change on Redwood City, including both built and natural environments.

Policy PS-6.4: Improve utility and transportation infrastructure, if needed, to ensure functionality during and following extreme heat and severe weather events, which may bring extreme precipitation and flooding.

Policy PS-6.5: Continue to plan, design, or require new development and retrofits to plan for and design for increases in extreme heat, extreme precipitation, and severe wind events, and prolonged drought conditions.

Policy PS-6.6: Ensure public facilities and properties continue to function in the face of increasingly frequent and severe hazard events.

Policy PS-6.7: Consider future sea level rise in the planning and design of future development.

Policy PS-6.8: Ensure ongoing regional coordination for resiliency planning and sea level rise protection projects.

Policy PS-6.9: Consider sea level rise in the development of watershed management plans and flood control infrastructure.

Policy PS-6.10: Encourage the use of environmentally sensitive sea level rise adaptation strategies that incorporate natural infrastructure.

Policy PS-6.11: Plan for the protection of the Inner Harbor area against the effects of sea level rise.

Policy PS-6.12: Work to achieve water demand that does not exceed State requirements and strive to further reduce demands by 5% to reduce future constraints on development during droughts and to increase water supply reliability

Policy PS-6.13: Use environmentally sensitive adaptation, including natural infrastructure, to the maximum extent feasible when retrofitting public facilities and properties.

Policy PS-6.14: Consider reconciling existing City standards for storm drain design criteria with precipitation data from the State.

GOAL PS-7: Create a community resilient under changing climate conditions.

Policy PS-7.1: Increase public awareness about climate change, and encourage Redwood City residents and businesses to participate in activities and lifestyle changes that reduce GHG emissions and increase climate change adaptation.

Policy PS-7.2: Ensure rapid and regular communications with residents prior to, during, and after extreme weather events including severe wind and rainstorms, extreme heat days, and unhealthy smoke from wildfires.

Policy PS-7.3: Ensure the provision of emergency shelter or cooling centers/hubs.

Policy PS-7.4: Ensure climate change adaptation planning efforts make specific efforts to include and

build the resilience of vulnerable and environmental justice communities.

Policy PS-7.5: Facilitate emergency service providers' and critical facilities' operations to provide adequate response times as hazard events increase in frequency and severity.

GOAL PS-8: Protect Environmental Justice community residents from the harmful effects of air pollutants.

Implementation Programs

Procedures, Permits, Agreements, Ordinances

Program PS-1: **Air Quality Standards.** Use methodologies and practices set by the U.S. Environmental Protection Agency, CARB, and the BAAQMD that measure air quality at emission sources.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-2: **Dust and Emission Abatement.** Adopt and enforce dust and emission abatement measures for construction activities based on the BAAQMD's guidelines and other appropriate regulations.

Timeframe: Long Range

Responsible Party: Community Development; Public Works Services Department

Funding Sources: General Fund

Program PS-3: **Air Pollution Emission Standards.** Require all types of stationary sources of pollution in Redwood City to meet regional, State, and federal air pollution emission standards.

Timeframe: Long Range

Responsible Party: Community Development

Funding Sources: Developer fees

Program PS-4: **Air Pollution Control Plans**. Require developers to implement appropriate air pollution control plans to reduce dust and exhaust emissions from construction equipment.

Timeframe: Long Range

Responsible Party: Community Development

Funding Sources: Developer fees

Program PS-5: **Energy Efficiency Standards.** Require new buildings and building additions to meet green building standards, consistent with the Green Building Ordinance.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: Developer fees, grants

Program PS-6: Allowable Emission Sources. Require that potential air quality impacts from new development projects in the City be evaluated pursuant to the applicable BAAQMD CEQA Guidelines in effect at the time the City commences the air quality evaluation, including, as applicable, the establishment of specific overlay zones around existing and planned sources of toxic air contaminants. Only allow emission sources or odor sources if the minimum screening distances between sources and receptors established in the BAAQMD CEQA Guidelines or other appropriate source can be met, unless detailed project- specific studies demonstrate compatibility with adjacent uses despite separations that do not meet the screening distance requirements.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6a: Conditions of development approval. New residential development or new sensitive land uses within [1,000] feet of a major arterial or freeway [must] include project features such as landscaping, ventilation systems, double-paned windows, setbacks, and barriers to reduce exposure to air pollution, [as recommended by the California Air Resources Board (CARB) and/or the Bay Area Air Quality Management District].

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6b: **TAC Point Sources Registration and Assessment**. Assess development in and around Environmental Justice communities to confirm all TACs point sources are registered with the BAAQMD, as required. Coordinate with each TAC point source facility to assess the potential for and barriers to upgrades, improvements, or relocations that would reduce the impact of their emissions on adjacent Environmental Justice communities.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6c: **New Toxic Air Contaminants Sources**. As BAAQMD's project-level significance thresholds evolve and apply to new TAC generating sources proposed to be located within 1,000 feet of sensitive receptors shall be required to identify and demonstrate that mitigation measures are capable of reducing potential emissions below BAAQMD's project-level significance thresholds.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-7: Sensitive Receptor Protection. Increase protection of sensitive receptors (facilities where individuals are highly susceptible to the adverse effects of air pollutants, such as housing, child care centers, retirement homes, schools, and hospitals) near high-volume roadways, dry cleaners using perchlorethylene, large gas stations, the Port of Redwood City, and rail yards. Amend the Municipal Code and other regulations to require mitigation measures such as increased indoor air filtration to increase the protection of sensitive receptors near major emission sources.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-8: Sensitive Receptor Siting Requirements. Require projects proposed within 500 feet of freeways and that house or accommodate sensitive receptors to include an analysis of the potential health risks. Mitigation measures that comply with adopted standards of the BAAQMD for control of odor/toxics for sensitive receptors shall be identified in order to reduce these risks to acceptable levels.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6.2b: Create a schedule to regularly update the Climate Action Plan, Climate Adaptation Plan, Local Hazard Mitigation Plan, and Safety Element, and coordinate content, and use information from these related plans to increase efficiency and improve implementation.

Timeframe: Short Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.3c: Coordinate with the San Mateo County OneShoreline program and other relevant programs to conduct a study into the potential impacts of sea level rise on shoreline groundwater levels in the City. Based on the rising groundwater levels study, amend the Redwood City Municipal Code to protect existing and future development from the effects of rising groundwater. This may include measures to protect underground utilities from constant submersion, the construction of building foundations and roadbeds in saturated soils, the protection of underground structures, the protection of groundwater tables from dewatering during construction, and the protection of people and the environment from toxic or hazardous materials that may travel due to rising groundwater levels.

Timeframe: Long Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.5a: Amend Redwood City building codes and other development documents to ensure new development's site planning, building design, and construction materials accommodate increased precipitation, flooding, extreme heat events, severe winds, and prolonged drought. Periodically update the codes and documents to ensure compliance with best practices. Best practices include but are not limited to:

- Raising floor levels and minimum flood construction levels.
- Incorporating adaptive measures, such as shading, adequate ventilation and green or white roofs.
- Insulating and improving the air tightness of buildings to increase reliance against extreme cold and heat.
- Using passive cooling and energy efficiency design requirements or allowing manual overrides (e.g., openable windows) when mechanical elements are in place will increase resilience, especially in the event of power outages.

Timeframe: Short Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.5b: Amend the Redwood City municipal code and other development documents to require project applicants to identify natural infrastructure that may be used for adaptation purposes to reduce the effects of climate change hazards on the proposed project. Identification of potential climate change adaptation measures should be required as part of the initial plan set review stage of the development review process. Project proposals should include analysis of the feasibility of integrating natural infrastructure before proposing alternative measures.

Timeframe: Short Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.6a: Identify critical facilities and City-owned buildings and infrastructure in hazard-prone areas and develop a program to protect them against the impacts of sea level rise.

Timeframe: Mid and Long Range

Responsible Party: Community Development, Public Works, and Transportation

Funding Sources: General Fund

Program PS-6.7a: Consistent with State recommendations and the San Mateo County One Shoreline program, consider identifying mid-century and end of century sea level rise projections that would be consistently used by the city in planning efforts and to evaluate all private and public development applications to ensure projects in sea level rise inundation zones are protected from inundation over the life of the project.

Timeframe: Short Range

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6.7b: Seek funding sources and collaborate with local and regional public and private entities that can assist communities and businesses with technical assistance and potential funding for sea level rise resiliency planning. Technical assistance may include supporting business resiliency through preparedness education, trainings, and resources to protect properties from the effects of sea level rise.

Timeframe: Mid Range

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6.9a: Use the City's selected sea level rise projections in hydraulic/hydrodynamic modeling, as well as climate adaptation strategies. The climate adaptation strategies may include but not be limited to:

- Avoidance/planned retreat,
- Enhanced levees and setback levees accommodating habitat transition and buffer zones,
- Expanded tidal prisms for enhanced natural scouring of channel sediments,
- Raised and flood proofed structures,
- Provision for additional floodwater pumping stations, and
- Inland detention basins to reduce riverine peak discharges.

Timeframe: Ongoing

Responsible Party: Community Development and Transportation/Public Works

Funding Sources: General Fund

Program PS-6.10a: Use existing natural features and ecosystem processes, or the restoration thereof, in sea level rise adaptation projects and strategies. This includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Proposals addressing adaptation must analyze the feasibility of natural features and ecosystem process before proposing alternative measures.

Timeframe: Ongoing

Responsible Party: Community Development and Transportation/Public Works

Funding Sources: General Fund

Program PS-6.11a: In coordination with San Mateo County's OneShoreline program and other adjacent jurisdictions, create a document that identifies appropriate sea level rise hazard mitigation and adaptation objectives specific to the Inner Harbor area, Redwood Shores, Pacific Shores, and surrounding areas.

Timeframe: Short Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.12a: Assess City waste and wastewater systems to determine they can accommodate drought-induced projected changes in water quality and availability.

Timeframe: Ongoing

Responsible Party: Public Works

Funding Sources: General Fund

Program PS-6.12b: Expand the service area for the recycled water system as outlined in Phase II.B Pipeline Alignment Study to reduce demand on the domestic water system during times of drought.

Timeframe: Ongoing

Responsible Party: Public Works and Engineering

Funding Sources: General Fund

Program PS-6.12c: Expand the existing recycled water system to work towards provide service to additional areas of the City.

Timeframe: Ongoing

Responsible Party: Public Works and Engineering

Funding Sources: General Fund

Program PS-6.12d: Require public and private development projects to design sites, buildings, and structures that minimize water use and increase water recycling.

Timeframe: Ongoing

Responsible Party: Community Development and Transportation/Public Works

Funding Sources: General Fund

Program PS-6.12e: Amend the Redwood City Recycled Water Area to include additional areas and continue to require dual plumbing and use of recycled water for irrigation.

Timeframe: Mid Range

Responsible Party: Community Development and Transportation and Public Works

Funding Sources: General Fund

Program PS-7.5a: Regularly update and supply the latest technical information to emergency service providers and critical facility operators to assist their planning for and provision of services.

Timeframe: Ongoing

Responsible Party: City Manager Office

Funding Sources: General Fund

Program PS-7.5b: Track and monitor first responder calls to hazard events associated with wildfires, extreme wind events, flooding, mudslides, and other extreme weather events to identify increasing trends related to changing climate conditions.

Timeframe: Ongoing

Responsible Party: City Manager Office, Fire Department

Funding Sources: General Fund

Special Programs/Projects

Program PS-11: "**Spare the Air" Program**. Participate in the BAAQMD's "Spare the Air" program.

Timeframe: Long Range

Responsible Party: City Manager Office/Economic Development

Funding Sources: General Fund

Program PS-12: New Technologies. Support new technologies by replacing Redwood City fleet vehicles with vehicles that use technology such as hybrid, electric, biofuel, or other appropriate technology. Support new technologies that address or mitigate Port, transportation, and industrial use pollutant emissions.

Timeframe: Ongoing

Responsible Party: City Manager Office/Economic Development; Public Works Services Department
Funding Sources: General Fund

Program PS-13: Greenhouse Gas Emissions Reduction Targets. Adopt GHG reduction targets and consider adopting interim targets and accelerating the timeframe for achieving carbon neutrality. The targets should support the State's efforts to achieve emissions reductions mandated under AB 32, the region's efforts to implement its Sustainable Community Strategy under SB 375, targets suggested by Executive Order S-3-05, and the State's 2045 carbon neutrality target

Timeframe: Immediate

Responsible Party: City Manager Office/Economic Development

Funding Sources: General Fund

Program PS-14: Greenhouse Gas Inventories. Complete new municipal and community GHG inventories at least every five years, and ideally every one to two years. Repeated inventories can show progress made toward meeting the city's GHG reduction targets, resulting from implementation of the City's Climate Action Plan GHG reduction policies in the General Plan, and other efforts.

Timeframe: Ongoing

Responsible Party: City Manager Office/Economic Development

Funding Sources: General Fund, grants

Program PS-6.1a: Prepare, implement, and regularly update a Climate Adaptation Plan that complements the Redwood City Climate Action Plan. The Climate Adaptation Plan should:

Identify specific strategies, develop actions, and cost estimates, and prioritize actions to increase local resilience of City infrastructure and critical assets, including community-identified and natural systems like wetlands and urban forests. Look for synergies between natural processes and engineering solutions.

Identify a prioritized list of actions (e.g., projects) with a timeline, capital expenditure plan, and framework for monitoring and adaptive management. Efforts should be made to integrate capital projects, existing infrastructure, emergency planning, and community services. Efforts should be made to include adaptation actions that lessen potential health risks to sensitive and vulnerable populations, including children, older adults, and individuals with heart and lung conditions.

Incorporate social equity issues and make particular efforts to involve vulnerable populations and environmental justice communities. Partner with vulnerable populations and environmental justice communities from the beginning of the Climate Adaptation Plan planning process and maintain partnerships throughout Plan implementation and future updates.

Timeframe: Short Range, then review/update every eight years

Responsible Party: Public Works

Funding Sources: General Fund

Program PS-6.3b: Consider coordination with adjacent jurisdictions to conduct a study into sea level rise's potential impacts including saltwater intrusion into near shore groundwater aquifers. The study could consider the impacts of saltwater intrusion on:

- Overland flooding;
- Water, sanitary sewer and storm drain pipelines;
- Soil liquefaction risk; and
- Old soil contaminants.

Timeframe: Long Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.4a: Design and construct utility infrastructure, including water supply, wastewater, and storm drain lines, and transportation infrastructure, including roadways, trails, bike paths, and rail lines, to withstand projected increases in extreme precipitation and storm events.

Timeframe: Ongoing

Responsible Party: Public Works and Engineering

Funding Sources: General Fund

Program PS-6.4b: Identify, and address as appropriate, deficiencies in existing utility and transportation infrastructure that may fail or suffer severe damage during extreme precipitation, flooding, and storm events.

Timeframe: Ongoing

Responsible Party: Public Works and Engineering

Funding Sources: General Fund

Program PS-6.6a: Identify critical facilities in hazard-prone areas and work to relocate or harden (including retrofitting or other mitigation techniques design to reduce risk or impact) these facilities to reduce risk of damage and loss of service.

Timeframe: Ongoing

Responsible Party: Public Works and Engineering

Funding Sources: General Fund

Program PS-6.6b: Purchase generators and explore solar and battery storage microgrid and islanding opportunities for critical facilities and infrastructure that lack adequate backup power.

Timeframe: Ongoing

Responsible Party: Public Works and Engineering

Funding Sources: General Fund

Program PS-6.7b: Identify sea level rise projections and use the projections for design and review of all private and public projects located in the sea level rise zone. Identify projections that are consistent with guidance contained within the State Agency Sea-Level Rise Action Plan for California, published by the Ocean Protection Council in 2022.

Timeframe: Short Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-7.3a: Consider establishing resilience hubs and cooling centers where community members can obtain information on how to prepare for climate change hazards and/or receive services (e.g., water, food, bed, charging stations, and clean air) during extreme heat and severe weather events. This includes:

- Identifying public facilities, such as community centers, libraries, schools where cooling centers and resilience hubs can be co-located to support vulnerable communities;
- Identifying possible partners, including business owners, property owners, religious and civic organizations, emergency service agencies, and others who may be able to contribute privately-owned space to create pop-up cooling centers to cover gaps in coverage of public-owned cooling centers;
- Setting and publishing standardized temperature or air quality triggers for when cooling centers and resilience hubs will open; and
- Track and monitor activation and usage of cooling centers and emergency shelters related to extreme heat, power loss, and public safety power shutoff events.

Timeframe: Short Range, Ongoing

Responsible Party: City Manager Office/Public Works

Funding Sources: General Fund

Program PS-7.4a: Identify and monitor vulnerable populations that could be impacted by reduced air quality, smoke from wildfires, increased extreme heat evets, power shortages or shut-offs, and exposure to flooding.

Timeframe: Short Range, Ongoing

Responsible Party: City Manager Office, Public Works, Fire Department

Funding Sources: General Fund

Outreach, Education

Program PS-18: Air Quality and Air Pollution —Education. Educate the public regarding best management practices that help to improve air quality and air pollution.

Timeframe: Long Range

Responsible Party: City Manager Office/Economic Development

Funding Sources: General Fund, grants

Program 1:Air pollution education. Disseminate information to residents and property owners living within [500/1,000 feet] of a freeway to inform them about the air pollution risks in those areas and what mitigation measures they can take.

Program PS-19: Green Building Education. Educate the public regarding the City's Green Building Ordinance and Reach Codes Provide information regarding opportunities for renewable energy, battery storage, EV charging, and energy and water conservation retrofits for existing buildings.

Timeframe: Long Range

Responsible Party: City Manager Office/Economic Development

Funding Sources: General Fund, grants

Program PS-7.1a: Develop a climate change-specific outreach program to inform community members how to prepare for, withstand, and recover after climate hazard events. Incorporate methods to overcome language, technological, and other barriers to reaching vulnerable communities. The outreach program should include:

- Public outreach to increase customer participation in water conservation programs and encourage water conservation methods during non-drought times.
- Information about existing energy efficiency and weatherization programs to reduce energy demand, make buildings safer to shelter in, and make buildings more resilient during power outages.
- Information about renewable energy, battery storage, and building and transportation electrification programs, financing, and rebates
- Extreme heat safety precautions to protect public health and extreme heat building retrofit guidance for home and business owners.
- Process to notify owners of property in areas with inundation or flooding potential regarding those hazards when they seek development review or other related County services.

Timeframe: Mid-Range

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-7.2a: Establish an environmental reverse calling center or participate in the San Mateo County (SMC) ALERT emergency alert system. If participating in the SMC ALERT system, ensure that the system will provide information to all residents and ensure that the alerts include fire, flooding, temperature (excessive cold or heat), earthquake, and severe weather events. Ensure the SMC ALERT system provides information regarding the locations of emergency shelters, cooling centers, and emergency services.

Timeframe: Short Range

Responsible Party: City Manager Office/ San Mateo County

Funding Sources: General Fund

Program PS-7.2b: Develop an emergency notification system for the most vulnerable community members before, during, and after a climate change-induced hazard event and assist in their evacuation, if needed.

Timeframe: Short Range, Ongoing

Responsible Party: City Manager Office/City Fire Department

Funding Sources: General Fund

Physical Improvements

Program PS-49: Upgraded Levees to Meet End of Century Sea Level Rise Projections. Upgrade existing levees in accordance with state and federal standards to meet end of century sea level rise projections such that the levees can be certified by FEMA for flood protection under sea level rise conditions.

Timeframe: Ongoing

Responsible Party: Public Works Services Department; Community Development

Funding Sources: General Fund

Inter-Agency and Other Organizations Consultation

Program PS-20: Regional Air Quality Consultation. Notify local and regional jurisdictions of proposed projects that may affect regional air quality, as identified by project type and size thresholds in the BAAQMD CEQA Guidelines and other appropriate sources.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-6.2a: Actively participate in the development and timely implementation of the San Mateo County Multi-Jurisdictional Local Hazard Mitigation Plan, Hazard Mitigation Action Plan specific to Redwood City. Allocate adequate City resources to ensure timely implementation of mitigation actions.

Timeframe: Ongoing

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-6.3a: Consult with the U.S. Geological Survey, Bay Conservation and Development Commission, California Coastal Commission, and other monitoring agencies to study near-term (50 years), mid-term (100 years), and long- term (200+ years) high probability climate change effects.

Timeframe: Ongoing

Responsible Party: City Manager Office/Community Development and Transportation

Funding Sources: General Fund

Program PS-6.8a: Collaborate regularly with sea level rise planning partners, such as the San Mateo County Flood & Sea Level Rise Resiliency District (OneShoreline), that can provide technical assistance for sea level rise resiliency planning.

Timeframe: Ongoing

Responsible Party: Community Development and Transportation

Funding Sources: General Fund

Program PS-22: Local Agency Consultation. Continue to consult with other local governments in addressing climate change. Participate in the countywide Regionally-Integrated Climate Action Planning Suite (RICAPS) initiative programs such as the Cities for Climate Protection Campaign to address local and regional climate change concerns and leverage multi-agency support for countywide climate initiatives.

Timeframe: Ongoing

Responsible Party: Public Works Services Department

Funding Sources: Grants, General Fund

- Former and ongoing industrial activities create hazardous conditions, including contaminated sites and the risk of hazardous materials release.
- Properties along U.S. 101, El Camino Real, and Woodside Road have the potential for high levels of lead in the soils.
- Operations at San Carlos Airport impact how land can be used within certain airport-influence zones in Redwood City.
- As the city's population grows over time, the need for more police and fire resources is likely; without increasing resources, an increase in population may strain local response times.
- All of these issues make emergency preparedness very important in Redwood City.

Hazards Management Goals, Policies, and Programs

By identifying and understanding possible hazards, the City can work to create safeguards to prevent accidents and work to ensure a higher level of safety for Redwood City residents and the community at large.

These goals and policies emphasize the importance of developing emergency preparedness and response programs that can minimize the impact of local hazards. The following Guiding Principles are addressed by the Hazards Management goals, polices, and programs:

- Partner with and embrace neighborhoods to improve health, safety, and well being for all.
- Continue to make community participation an important part of achieving a great city.

GOAL PS-8

Minimize the potential damage to structures and loss of life that result from earthquakes and other geological hazards.

Policy PS-6.1: Identify structural types, land uses, and sites that are highly sensitive to earthquake activity and other geological hazards; seek to abate or modify them to achieve acceptable levels of risk.

Policy PS-6.2: Inform the public through schools, community centers, and other agencies and media channels what can be done to reduce risks from seismic events to persons and property.

Policy PS-6.3: Work to ensure that structures and the public in Redwood City are exposed to reduced risks from seismic and geological events.

GOAL PS-7:

Provide adequate and appropriately-designed storm drainage and flood control facilities to meet current and future needs and minimize the risk of flooding.

Policy PS-7.1: Avoid or minimize the risks of flooding to new development. Carefully evaluate whether

new development should be located in flood hazard zones, and identify construction methods or other methods to minimize damage if new development is located in flood hazard zones.

Policy PS-7.2: Improve the drainage system's level of service to minimize storm flooding.

Policy PS-7.3: Strive to maintain the structural and operational integrity of essential public facilities during flooding. Locate, when feasible, new essential public facilities outside of flood hazard zones; identify construction methods or other methods to minimize damage if these facilities are located in flood hazard zones. Essential public facilities include City government operations facilities, police and fire facilities, and hospitals.

Policy PS-7.4: Prioritize improvements to Redwood City's storm drain system in areas that are prone to flooding. Encourage the use of preventive and low-impact measures as well as maintaining, upgrading, and constructing new flood prevention infrastructure to reduce the risk of flooding.

Policy PS-7.5: Consult with public agencies responsible for flood protection, including the U.S. Army Corps of Engineers, FEMA, and the California Department of Water Resources to maintain the most current flood hazard and floodplain information and use it as a basis for project review of flood protection systems such as levees and to guide development in accordance with federal, State, and local standards.

Policy PS-7.6: Minimize impervious surfaces to reduce stormwater runoff and increase flood protection.

Policy PS-7.7: Consult with "up-stream" jurisdictions to:

- Minimize the runoff from these areas into Redwood City's drainage system. Work with the jurisdictions located within the Redwood City watershed area, including San Carlos, Woodside, Menlo Park, Atherton, and San Mateo County
- Pursue policies and measures to minimize runoff and reduce flooding while sharing the costs of major capital improvements.

GOAL PS-8:

Protect city residents, and businesses and employees from potential hazards associated with the use, storage, transport, and disposal of hazardous materials in and through Redwood City.

Policy PS-8.1: Establish policies to regulate and reduce hazardous waste within Redwood City that are consistent with the County's Hazardous Waste Management Plan and other County regulatory programs.

Policy PS-8.2: Educate residents and businesses about household hazardous wastes, less toxic materials that can be used in place of toxic materials, and proper household hazardous waste disposal methods.

Policy PS-8.3: Work to ensure that land previously used as agriculture, commercial, and industrial is safe and contains no environmental hazards.

Policy PS-8.4: Encourage the use of green building practices to reduce potentially hazardous materials in construction materials.

GOAL PS-9: Minimize public health and environmental impacts of hazardous waste and/or solid waste and groundwater threats in Environmental Justice communities.

Policy PS-9.1: Prohibit the development of new hazardous waste and/or solid waste facilities in Environmental Justice communities.

Policy PS-9.2: Reduce the impact of existing hazardous waste and/or solid waste facilities and groundwater threats in Environmental Justice communities.

Policy PS- 9.3: Reduce new groundwater threats in Environmental Justice communities.

GOAL PS-9: Maintain the ability of the Redwood City community to respond promptly, efficiently, and effectively in the event of a major earthquake or other natural or human-caused disaster.

Policy PS-9.1: Promote improved inter-jurisdictional consultation and communication regarding disaster or emergency plans of San Mateo County, and for seismic safety upgrades of public facilities and infrastructure such as dams, reservoirs, bayfront levees, and highway structures. Continue to identify local hazards in Redwood City and plan for hazard mitigation and recovery.

Policy PS-9.2: Identify alternative water sources for fire-fighting use during a disaster.

Policy PS-9.3: Conduct ongoing public outreach regarding procedures and plans to be followed in the event of an emergency.

GOAL PS-10: Minimize risks of potential hazards in the vicinity of San Carlos Airport.

Policy PS-10.1: Work to achieve consistency between General Plan land use and related policies and the San Carlos Airport Comprehensive Land Use Plan, as is appropriate for Redwood City. Measures may include restrictions on permitted land uses and development criteria, including height restrictions.

GOAL PS-11: Provide a high level of public safety services.

Policy PS-11.1: Work with the Police Department to determine and meet community needs for law enforcement services.

Policy PS-11.2: Work with the Fire Department to determine and meet community needs for fire protection and related emergency services.

Policy PS-11.3: Continue to monitor gang activities in the community; consult with surrounding jurisdictions and outside groups and organizations to prevent criminal activities and gang violence. Continue to provide youth programs. Aggressively respond to criminal and gang activity in the community, and work collaboratively on local and countywide programs to reduce crime and prevent gang violence.

The Housing Element includes a policy about providing home- buying incentives for Redwood City's emergency personnel, to ensure first responders can locate close to emergencies in the City.

GOAL PS-12: Provide a safe pedestrian and bicycle environment citywide.

Policy PS-12.1: Enhance pedestrian and bicycle safety through the inclusion of well-designed streets, sidewalks, crosswalks, bike lanes, traffic control devices, and school routes.

GOAL PS-13 Prevent the loss of life and mitigate the potential damage to structures by creating fire adaptive communities.

Policy PS-13.1: Continue to plan for new construction and redevelopment that decreases the likelihood of fire and decreases the impacts of fire damage.

Policy PS-13.2: Continue to allow structures and infrastructure located in the Very High Fire Hazard Severity Zone (VHFSZ) to be rebuilt or redeveloped after a large fire, in accordance with the Building and Fire Codes in place at the time of the rebuilding.

Policy PS-13.3: Ensure that local infrastructure (including water supply and emergency services have adequate capacity to support wildfire emergencies.

Policy PS-13.4: Continue to support and implement fuel management programs

Policy PS-13.5: Periodically reevaluate land use policy allowing for new development in the Very High Fire Hazard Severity Zone.

Implementation Programs

Procedures, Permits, Agreements, Ordinances

Program PS-23: Seismic Safety Addressed in CEQA. Require environmental documents prepared in connection with CEQA to address seismic safety issues; provide adequate mitigation for existing and potential hazards.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: Development fees

Program PS-24: Geotechnical Analysis. Require a geotechnical analysis for construction in areas with potential geological hazards; implement appropriate mitigation recommendations.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: Development fees

Program PS-25: International Building Code. Continue to implement the International Building Code seismic safety standards for construction of new buildings; update the City's codes as needed to respond to new information, standards, and technology.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: None Required

Program PS-26: Geological Hazard Mapping. Use appropriate geological hazard mapping techniques to evaluate potential seismic and slope stability hazards associated with proposed new development.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-27: New Development Protected from Flooding. Require new development to be designed to provide protection from potential impacts of flooding resulting from significant flood events, consistent with evolving State and federal guidelines and as directed by the City Engineer, and to consider possible sea level rises.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-28: Stormwater System Maintenance and Upgrade Funding. As appropriate, allocate increased funding in Redwood City's Capital Improvement Program to upgrade and/or replace stormwater drainage facilities.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-29: Update Flooding Information and Maps. As new and updated flooding information is provided by FEMA and other regional agencies, update the maps and information in the General Plan and maintained by the City to reflect current conditions.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-30: Hazardous Waste Ordinance. Adopt a Hazardous Waste Ordinance that is compatible with the County Hazardous Waste Management Plan.

Timeframe: Ongoing
Responsible Party: Community Development; Public Works Services Department
Funding Sources: General Fund

Program PS-31: Hazardous Materials Buffer. Require a buffer zone between areas where significant quantities of hazardous materials are present and sensitive receptors, such as residences, hospitals and nursing/convalescent homes, hotels and lodging, schools, and day care centers.

Timeframe: Ongoing
Responsible Party: Community Development; Fire Department
Funding Sources: General Fund

Program PS-32: Emergency Operations Plan. Review and update, as needed, the City's emergency operations plan in coordination with the County's Local Hazard Mitigation Plan to address disasters such as earthquakes, flooding, dam or levee failure, hazardous materials spills, epidemics, fires, extreme weather, major transportation accidents, and terrorism.

Timeframe: Ongoing
Responsible Party: City Manager Office; Police Department; Fire Department
Funding Sources: General Fund

Program PS-33: Emergency Vehicle Access and Secure Evacuation Routes. Require new development to provide adequate access for emergency vehicles, particularly fire-fighting equipment, as well as secure evacuation routes for inhabitants.

Timeframe: Ongoing
Responsible Party: Police Department; Fire Department
Funding Sources: General Fund

Program PS-34: Emergency Aid Standing Agreements. Maintain standing agreements with other public and private agencies to furnish specified aid upon demand in the event of a major emergency, as appropriate.

Timeframe: Ongoing
Responsible Party: Police Department; Fire Department
Funding Sources: General Fund

Program PS-35: Emergency Response Preparedness Programs. Maintain and update, as appropriate, the City's emergency response preparedness programs, plans, and procedures to protect the health and safety of the community, and to provide effective and quick recovery of affected areas in the event of a major disaster. In particular, incorporate into such plans and programs strategies to provide continuous access to and from the Police Station via the Redwood Creek undercrossing of U.S. 101.

Timeframe: Ongoing
Responsible Party: Police Department; Fire Department
Funding Sources: General Fund

Program PS-36: Community Emergency Response Team. Maintain funding for programs such as CERT (Community Emergency Response Team) to conduct public education of emergency preparedness for all types of emergencies.

Timeframe: Ongoing
Responsible Party: Fire Department
Funding Sources: Grants, General Fund

Program PS-37: County Airport Land Use Plan. Refer all General Plan and Zoning Map amendments/updates, Precise Plans, and other amendments affecting property within Area B of the Airport Influence Area (AIA) Boundary for San Carlos Airport to the C/CAG Airport Land Use Commission for a determination of consistency with the County Airport Land Use Plan for the environs of San Carlos Airport.

Timeframe: Ongoing
Responsible Party: Community Development

Funding Sources: Development fees

Program PS-38: Crime and Drug Prevention Programs. Continue to implement existing volunteer programs, after-school activities such as DARE, police activities within local schools, Neighborhood Watch programs, the Police Activities League, and school resource and outreach programs for crime and drug prevention.

Timeframe: Ongoing
Responsible Party: Police Department
Funding Sources: Grants, General Fund

Program PS-39: Adequate Police and Fire Departments Service Requirements. Provide funding for the Police Department and Fire Department to maintain sufficient personnel and the highest level of training, technology, and equipment to meet service requirements of new growth and other specific needs, as appropriate.

Timeframe: Ongoing
Responsible Party: Police Department; Fire Department; City Manager Office/Economic Development
Funding Sources: General Fund

Program PS-40: Adequate Lighting. Require new development to provide adequate safety lighting in pedestrian areas and parking lots.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-41: Stormwater and Creek Protection. Adopt a Creek Enhancement Ordinance. Address the following in the ordinance: flood control issues, biological resource opportunities, aesthetics, recreational/trail opportunities, public safety issues, property owners' responsibilities to correct/improve creek banks (including offering incentives such as rebates, classes/seminars, technical assistance, etc.)

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-13.1: New and Re-development Siting Requirements

- Continue to require new development (including new subdivisions) and re-development to provide adequate defensible space to minimize the risk of structural damage associated with wildland fires.

- Require new development be in areas with adequate water supply and water supply infrastructure, where possible.
- Require new development be in areas with adequate fire fighting protection.
- Continue to implement the California Building and California Fire Codes.
- Require new essential public facilities be sited outside of the Very High Fire Hazard Severity Zone, when feasible.
- Require new development located in the Very High Fire Hazard Severity Zone to:
    - prepare fire protection plans
    - have more than one ingress/egress point

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-13.2: Re-development Policy. Periodically review and amend, as appropriate, the City's policy allowing structures to be rebuilt in Very High Fire Hazard Severity Zone after a fire.

Timeframe: Every 8 years

Responsible Party: Community Development and Fire

Funding Sources: General Fund

Program PS-13.3: Zoning Code, Building Code Updates.

- Avoid, if possible, or minimize new residential development in the Very High Fire Hazard Severity Zone.
- Update site design and maintenance standards to account for new and emerging technologies and State fire standards.
- Require residential and nonresidential structures to have street numbers (and street name, as appropriate) visible from public and private roadways and alleys.

Timeframe: Ongoing

Responsible Party : Community Development

Funding Sources: General Fund

Program PS-13.4: Statewide Fire Protection Standards. Continue to implement Statewide standards for fire protection for new development and re-development, including evacuation route design and standards. Require all new development and re-development comply with the latest building and fire codes.

Timeframe: Ongoing

Responsible Party: Community Development and Fire

Funding Sources: General Fund

Program PS-13.5: Incorporate Fire Safe Design into New Development and Re-development

- Identify development that does not comply with current fire safety standards, in terms of road standards and vegetative hazards, establish and implement a mitigation plan to remedy the noncompliance, as appropriate.
- Require new development and re-development to incorporate fire safe design by requiring property owners to submit plans showing ingress/egress, evacuation routes, emergency vehicle access, visible home addressing and signage, and fuel modification/fire-retardant zones. This may include but not be limited to defensible space, drought and fire resistant landscaping.
- Require new development and re-development to meet or exceed title 14, CCR, division 1.5, chapter 7, subchapter 2, articles 1-5 (commencing with section 1270) and title 14, CCR, division 1.5, chapter 7, subchapter 3, article 3 (commencing with section 1299.01) for the Very High Fire Hazard Severity Zone.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-13.6: Monitor Future Fire Risk and Assess Service. Periodically review trends and climate change projections affecting future fire risk and fire risk reduction capabilities to ensure that fire services remain adequate; modify service provision and develop mitigation measures, as necessary. Identify development that does not meet local fire code; look to develop mitigation programs.

Timeframe: Ongoing
Responsible Party: Community Development and Fire Department
Funding Sources: General Fund

Program PS-9.1: Hazardous Materials, Hazardous Waste, or Solid Waste Storage and Handling. Use land use regulations and/or ordinances to ensure that new businesses and facilities that use, store, or handle hazardous materials, hazardous waste, or solid waste are permitted in Environmental Justice communities, only if the new businesses and facilities meet current zoning regulations, fire regulations, and other appropriate regulations and provide a safe distance from sensitive uses such as schools, daycare facililities, residences, and public community facilities.

Timeframe: Ongoing
Responsible Party: Community Development and Fire Department
Funding Sources: General Fund

Plans and Studies

Program PS-42: Emergency Evacuation Routes and Plans. Prepare and regularly update emergency evacuation routes and plans.

Timeframe: Ongoing
Responsible Party: Police Department; Fire Department

Funding Sources: General Fund

Program PS-43: Storm Drainage Facility Master Plan. Develop a Storm Drainage Master Plan to address flooding hazards and storm drainage facility needs. The Storm Drainage Master Plan should seek to balance the two primary functions of creeks: flood control and riparian habitat.

Timeframe: Mid Range
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-44: Local Hazard Mitigation Plan. Continue to actively coordinate with San Mateo County on the regular update of the Multi-Jurisdictional Local Hazard Mitigation Plan and the implementation of the City's Action Plan it commits to in the Local Hazard Mitigation Plan, Volume II. Review the Hazard Mitigation Plan in conjunction with the City's General Plan, Climate Action Plan, future Climate Adaptation Plan, and other resiliency planning and emergency response planning documents to ensure consistency of approach across all documents.

Timeframe: Ongoing
Responsible Party: Fire Department, Community Development
Funding Sources: General Fund

Special Programs/Projects

Program PS-45: Geologic Hazard Abatement Districts. Prepare soils map and seismic safety maps as part of establishing Geologic Hazard Abatement Districts to reduce risk levels from slope instability, seismic events, and other geologic hazards.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-46: Protect Essential Public Facilities from Flooding. Assess the level of impact on existing public facilities if flooding were to occur. Develop strategies to minimize impacts and provide continued operation of essential public facilities.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-47: Community Facility Improvement Maintenance. Consider establishing a Community Facility Improvement Maintenance District to assist with creek maintenance and Sea Level Rise issues.

Timeframe: Mid Range

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-48: Hazardous Material Releases from Prior Land Uses. Establish development standards for new development and redevelopment in areas previously used for commercial, agricultural, or industrial uses to identify and abate hazardous material releases from prior land uses that have the potential to affect future property owners or users. A Phase I Environmental Site Assessment should be required where appropriate and environmental testing and/or remediation may be required based on the findings of the Phase I.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: Development fees

Program PS-13.7: At-Risk Population Registration Program. Create and implement a registration program identifying and noting the location of Redwood City's at risk populations.

Timeframe: Within 2 years of Safety Element adoption

Responsible Party: Community Development

Funding Sources: General Fund

Program PS – 13.8: Clean Air Quality Resources. Consider programs to provide resources and safe spaces to residents to reduce wildfire smoke exposure, such as establishing clean air shelters.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources

Physical Improvements

Program PS-49: Levees Upgraded to FEMA Standards. Upgrade existing levees in accordance with FEMA standards and FEMA direction to protect residential and commercial areas against 100-year flood hazards and sea level rise.

Timeframe: Ongoing

Responsible Party: Public Works Services Department; Community Development

Funding Sources: General Fund

Program PS-50: Implement Comprehensive Flood Prevention Measures. Implement comprehensive

flood prevention measures in areas of the City that experience repetitive flooding, including the Friendly Acres/East Bayshore and Centennial neighborhoods. Upgrade the Fifth Avenue Pump Station to increase stormwater capacity in the Friendly Acres neighborhood. Raise the levee of the Bayfront Canal to increase the canal's capacity to store and convey stormwater. Complete improvements to provide a 30- year storm level of flood protection, including sea level rise projections.

Timeframe: Mid Range

Responsible Party: Public Works Services Department; Community Development

Funding Sources: General Fund, Capital Improvement Program

Program PS-13.9: Hazard Reduction Projects. Maintain or require the maintenance of fire hazard reduction projects, including but not limited to community fire breaks, private and public road clearance.

Timeframe: Ongoing

Responsible Party: Community Development (Code Enforcement), Parks, Recreation, and Community Services, Fire (for City owned property), and Transportation

Funding Sources: General Fund

Program PS-13.10: Fire Flow Capacity. Continue to implement improvements identified in the Urban Water Management Plan to achieve a minimum fire flow of 1,000 gallons of water per minute for one and two family dwellings, as specified in Section 507.1.1 of the Municipal Code.

Timeframe: Ongoing

Responsible Party: Community Development and Fire

Funding Sources: General Fund and Grants

Program PS-13.11: Establish Firebreak Areas. Establish and maintain firebreak areas to restrict the spread of wildfire.

Timeframe: Ongoing

Responsible Party: Public Works and Fire

Funding Sources: General Fund

Outreach, Education

Program PS-51: Seismic Events and Hazardous Materials Outreach. Make information regarding seismic events and hazardous materials (provided in Hazardous Materials Business Plans), readily available to City and County emergency responders. Work with schools, media, and other agencies to inform the public about seismic event risk and planning.

Timeframe: Ongoing

Responsible Party: Community Development; Fire Department; Public Works Services Department
Funding Sources: General Fund

Program PS-52: Creekside Property Owner Education. Educate creekside property owners in low-cost, ecologically enhancing methods to maintain and improve creek bank stability, habitat restoration, and prevent bank erosion.

Timeframe: Ongoing
Responsible Party: Community Development; Public Works Services Department
Funding Sources: General Fund

Program PS-13.12: Emergency Preparedness. Continue to provide public education regarding fire prevention and/or preparedness including but not limited to importance of providing and maintaining defensible space/vegetation clearance and personal evacuation plans, emergency preparedness kits/supplies, City or County fire prevention and response services.

Timeframe: Ongoing
Responsible Party: Community Development; Public Works Services Department
Funding Sources: General Fund

Inter-Agency and Other Organizations Consultation

Program BE-53: Interagency Stormwater Drainage Consultation. Meet and consult with San Mateo County and surrounding jurisdictions to ensure that the other jurisdictions assume responsibility for reducing stormwater flow into Redwood City's drainage system and improve the drainage in their low-lying areas. Include the development community in these discussions to help assess how to best improve potential flooding in low-lying areas.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program BE-54: Flooding Consultation. Consult with public agencies that have responsibility for flood protection regarding data, flood hazard zones, and emergency response.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program BE-55: Sea Level Rise Consultation. Consult with relevant state, regional, and local agencies, particularly the San Mateo County One Shoreline program, to coordinate planning for sea level rise and

rising groundwater levels.

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-56: County Environmental Health Department Consultation. Consult with the County Environmental Health Department to regularly inspect businesses for compliance with their Hazardous Materials Management Plans.

Timeframe: Ongoing

Responsible Party: Fire Department; Community Development

Funding Sources: General Fund

Program PS-57: Hazardous Waste Consultation. Consult with San Mateo County to:

- Sponsor household hazardous waste disposal programs for residents to bring pesticides, cleaning fluids, paint cans, and other common household toxics to a centralized location for proper disposal.
- Educate users about less toxic materials that can be used in place of hazardous materials.

Timeframe: Ongoing

Responsible Party: City Manager Office/Economic Development; Fire Department

Funding Sources: General Fund

Program 9.1b: Hazardous Waste and Solid Waste Consultation. Consult with the County and other regulatory agencies to ensure that existing hazardous waste and solid waste facilities meet health and safety standards in or near Environmental Justice communities.

Timeframe: Ongoing

Responsible Party: Community Development; Fire Department

Funding Sources: General Fund

Program PS-58: Bay Area Air Quality Management District Asbestos Airborne Toxic Control Measure. Require conformance with Bay Area Air Quality Management District Asbestos Airborne Toxic Control Measure (CCR, Title 17, §93105) for all discretionary projects and all projects requiring a grading permit that are located in areas likely to contain naturally occurring asbestos (serpentine or ultramafic rock).

Timeframe: Ongoing

Responsible Party: Community Development

Funding Sources: General Fund

Program PS-59: Watershed Multi-Jurisdictional Consultation. Pursue consultation with jurisdictions that share watersheds with Redwood City to limit stormwater runoff volume and contribute to flood-control improvements.

Timeframe: Mid Range

Responsible Party: Public Works Services Department; Community Development

Funding Sources: General Fund

Program PS-59: Flood Insurance Rate Map Revisions. Initiate flood insurance rate map revisions for city projects, when appropriate.

Timeframe: Ongoing

Responsible Party: Public Works Services Department; Community Development

Funding Sources: General Fund

Program PS-60: Inter-Agency Emergency Preparedness/Mutual Aid. Continue to work with other local cities, San Mateo County, regional organizations, and State agencies to ensure emergency preparedness and fire suppression services are provided in an efficient and coordinated manner. Continue to participate in mutual aid multi-agency agreements.

Timeframe: Ongoing

Responsible Party: Fire Department

Funding Sources: General Fund

Key Noise Considerations

Key considerations relative to noise in Redwood City are:

- The most significant noise sources in Redwood City–cars, trucks, trains, and airplanes–are beyond the City's regulatory control. However, the City can use land use planning strategies to minimize the effects of transportation-related noise.
- Train horns continue to be a source of community noise complaints.
- Housing, mixed-use districts, and residential neighborhoods have distinctly different noise conditions, which the respective residents generally understand and accept. The City must adopt reasonable and appropriate noise regulations that reflect the characteristics of the different areas in which residential uses are allowed.
- Heavier industrial business activities, and specifically those associated with the Port of Redwood City, have associated noise levels that generally are incompatible with residential uses. Land use policies emphasize separation of such uses as feasible, and local regulatory controls can be used to minimize conflicts.

Noise Goals, Policies, and Programs

The Redwood City General Plan Noise Chapter emphasizes careful planning to avoid locating sensitive receptors adjacent to or near significant noise sources, as well as addressing and minimizing noise at the source. The following goals, policies, and implementation programs reflect the City's commitment to adopting new and creative regulations to noise issues unique to Redwood City.

The following Guiding Principle is addressed by the Noise goals, polices, and programs:

- ***Partner with and embrace neighborhoods to improve health, safety, and well being for all.***

GOAL PS-13 Minimize the impact of point source noise and ambient noise levels throughout

Policy PS-13.1: Modify noise level standards as appropriate for all land uses.

Policy PS-13.2: Revise the City's Noise Ordinance to address ongoing noise issues by using quantitative noise limits where appropriate and establishing comprehensive noise control measures.

Policy PS-13.3: Consider noise impacts as part of the development review process, particularly the location of parking, ingress/egress/loading, and refuse collection areas relative to surrounding residential development and other noise-sensitive land uses.

Policy PS-13.4: In accordance with the Municipal Code and noise standards contained in the General Plan, strive to provide a noise environment that is at an acceptable noise level near schools, hospitals, and other noise sensitive areas.

Policy PS-13.5: Limit the hours of operation at all noise generation sources that are adjacent to noise sensitive areas, wherever practical.

Policy PS-13.6: Require all exterior noise sources (construction operations, air compressors, pumps, fans, and leaf blowers) to use available noise suppressions devices and techniques to bring exterior noise down to acceptable levels that are compatible with adjacent land uses.

Policy PS-13.7: Require that mixed-use structures be designed to account for noise from adjacent uses, and minimize transfer of noise and vibration from commercial/retail to residential use.

Policy PS-13.8: Implement appropriate standard construction noise controls for all construction projects.

Policy PS-13.9: Require noise created by new non-transportation noise sources to be mitigated so as not to exceed acceptable interior and exterior noise level standards.

Policy PS-13.10: Do not allow new residential or other noise sensitive land use development in noise impacted areas unless effective mitigation measures are incorporated into the project design to reduce outdoor activity area noise levels.

GOAL PS-14 Minimize the impacts of transportation-related noise.

Policy PS-14.1: Consult with responsible federal and State agencies to minimize the impact of transportation-related noise, including noise associated with freeways, major arterials, rail lines, and airports.

Policy PS-14.2: Require that proposed land use policy actions (such as a General Plan amendment, Zoning amendment, or a Precise Plan) within the identified aircraft noise contours for San Carlos Airport are:

- Reviewed by the Airport Land Use Commission (C/CAG Board)
- Mitigated for potential noise impacts, as appropriate to applicable City noise standards, by the developer
- Consistent with the Aircraft Noise/Land Use Compatibility Standards in the San Mateo County Airport Land Use Plan.

Policy PS-14.3: Continue to consult with San Mateo County Department of Public Works Airport Division, the Federal Aviation Administration (FAA), and Pilots Association to promote “fly neighborly” programs that minimize noise impacts from aircraft take-offs and other low-altitude aircraft operations associated with San Carlos Airport.

Policy PS-14.4: Require development that is, or will be, affected by railroad noise and/or vibration to include appropriate measures to minimize adverse noise effects on residents and business persons.

Policy PS-14.5: Provide, as appropriate, funding to monitor noise levels and investigate noise complaints.

Policy PS-14.6: Provide education to the community at large about the importance of maintaining a healthy noise environment, and identify ways residents can assist in noise abatement efforts.

Implementation Programs

Procedures, Permit, Agreements, Ordinances

Program PS-60: Noise Regulation Enforcement.

- Continue to enforce City and State noise regulations to protect residents from excessive noise levels. Periodically update City regulations for adequacy and revise, as needed, to address community needs and changes in legislation and technology.
- Allow for appropriate enforcement of all noise regulations, including fines for violations.
- Consider requiring that all building permit applicants sign a form acknowledging requirements of the City's Noise Ordinance.

Timeframe: Short Range and Ongoing
Responsible Party: Community Development; Public Works Services Department, Police Department
Funding Sources: General Fund

Program PS-61: Acoustical Analyses. Require acoustical analyses, as appropriate, for proposed stand-alone residential development within the 60 dB CNEL or higher contour, as shown in Figure PS- 12. Require incorporation of mitigation measures as necessary to reduce noise levels to levels deemed appropriate by the City.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: Developer funding

Program PS-62: Commercial Drive-Through Compatibility. Require commercial drive-through uses to demonstrate compatibility with adjacent land uses.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: Developer funding

Program PS-63: Enforcing Construction and Maintenance Noise Regulations. Minimize noise from property maintenance equipment, construction activities, and other non-transportation noise sources by enforcing construction and maintenance hours, including vehicle start-up and preparation. Enforce standard construction noise controls such as:

- Limit construction to the hours of 8:00 A.M. to 5:00 P.M. on weekdays, and 9:00 A.M. to 5:00 P.M. on Saturdays, with no noise-generating construction on Sundays or holidays.
- Control noise from construction workers' radios to the point where they are not audible at existing residences that border the project site.

- Equip all internal combustion engine-driven equipment with mufflers that are in good condition and appropriate for the equipment.
- Utilize quiet models of air compressors and other stationary noise sources where technology exists.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
- Prohibit unnecessary idling of internal combustion engines.
- Notify residents adjacent to the project site of the construction schedule in writing.

Timeframe: Short Range and Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-64: Noise Element and Amendment Comprehensive Airport Land Use Plan Consistency. Refer all amendments to the Noise Element to the Airport Land Use Commission (C/CAG) for a determination of consistency with the relevant airport/land use compatibility criteria and guidelines contained in the San Mateo County Comprehensive Airport Land Use Plan for the environs of San Carlos Airport.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: Development application fees

Program PS-65: New Project and Comprehensive Airport Land Use Plan Consistency. Voluntarily refer development projects within the planning boundary of San Carlos Airport to the Airport Land Use Commission (C/CAG) for a determination of consistency with the relevant airport/land use compatibility criteria and guidelines contained in the San Mateo County Comprehensive Airport Land Use Plan for the environs of San Carlos Airport.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: Development application fees

Program PS-66: Vibration Standards. Consider adoption of vibration standards, and codify acceptable levels within the city.

Timeframe: Short Range
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-67: Railroad Vibration. Require vibration-sensitive buildings (including but not limited to residential buildings) to be sited at least 100 feet from the centerline of railroad tracks, whenever feasible. Require the preparation of a site-specific vibration study for any residential or vibration-sensitive development proposed within 100 feet of the centerline of railroad tracks in Redwood City. The study shall include recommended measures to reduce vibration to meet citywide vibration standards, as defined per Program PS-66 of the General Plan. Potential measures to reduce vibration include, but are not limited to, modifications in site planning or building construction. The City shall

include the recommendation(s) of site-specific vibration studies as conditions of any subsequent project approvals involving potentially significant vibration impacts.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-68: Maintenance Equipment Restrictions. Consider the possible restriction of certain types of heating, ventilating, and air conditioning systems (HVAC) and/or maintenance equipment (such as leaf blowers) within the city.

Timeframe: Short Range
Responsible Party: Community Development
Funding Sources: None required

Program PS-69: **Motor Vehicle Noise Standards.** Encourage the enforcement of State of California motor vehicle noise standards for cars, trucks, and motorcycles by the California Highway Patrol and the City's Police Department.

Timeframe: Ongoing
Responsible Party: Police Department
Funding Sources: General Fund

Special Programs/Projects

Program PS-70: Noise Complaints Monitoring System. Develop and/or refine a tracking/monitoring system of noise complaints within the city such that repeat offenders might be more easily identified.

Timeframe: Short Range and Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Program PS-71: Quiet Pavement Surfaces. Consider quiet pavement surfaces in the City's repaving plans as an opportunity to make a noticeable reduction in traffic noise along city streets.

Timeframe: Short Range and Ongoing
Responsible Party: Public Works Services Department
Funding Sources: General Fund

Program PS-72: Noise/Land Use Compatibility Guidelines. Create flexibility in the City's noise/land use compatibility guidelines to recognize the special conditions of mixed-use development, including such development along arterials and near rail lines.

Timeframe: Short Range and Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Outreach, Education

Program PS-73: Noise Education. Help to educate the construction and development community about noise insulation/attenuation techniques in new residential construction.

Timeframe: Ongoing
Responsible Party: Community Development
Funding Sources: General Fund

Inter-Agency and Other Organizations Consultation

Program PS-74: Noise Consultation. Consult with other governmental agencies to minimize transportation-related noise including noise from freeways, major arterials, rail lines, and airports.

Timeframe: Ongoing
Responsible Party: City Manager Office/Economic Development
Funding Sources: General Fund

Redwood City Focused General Plan Update Project

Appendix C: Existing Conditions Report

HOUSING NEEDS DATA REPORT: REDWOOD CITY

ABAG/MTC Staff and Baird + Driskell Community Planning

2021-04-02



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1 INTRODUCTION

The Bay Area continues to see growth in both population and jobs, which means more housing of various types and sizes is needed to ensure that residents across all income levels, ages, and abilities have a place to call home. While the number of people drawn to the region over the past 30 years has steadily increased, housing production has stalled, contributing to the housing shortage that communities are experiencing today. In many cities, this has resulted in residents being priced out, increased traffic congestion caused by longer commutes, and fewer people across incomes being able to purchase homes or meet surging rents.

The 2023-2031 Housing Element Update provides a roadmap for how to meet our growth and housing challenges. Required by the state, the Housing Element identifies what the existing housing conditions and community needs are, reiterates goals, and creates a plan for more housing. The Housing Element is an integral part of the General Plan, which guides the policies of Redwood City.

2 SUMMARY OF KEY FACTS

- **Population** – Generally, the population of the Bay Area continues to grow because of natural growth and because the strong economy draws new residents to the region. The population of Redwood City increased by 15.1% from 2000 to 2020, which is above the growth rate of the Bay Area.

- **Age** – In 2019, Redwood City's youth population under the age of 18 was 18,353 and senior population 65 and older was 10,870. These age groups represent 21.4% and 12.7%, respectively, of Redwood City's population.

- **Race/Ethnicity** – In 2020, 44.1% of Redwood City's population was White while 1.5% was African American, 15.1% was Asian, and 35.4% was Latinx. People of color in Redwood City comprise a proportion below the overall proportion in the Bay Area as a whole.[1]

- **Employment** – Redwood City residents most commonly work in the *Financial & Professional Services* industry. From January 2010 to January 2021, the unemployment rate in Redwood City decreased by 3.6 percentage points. Since 2010, the number of jobs located in the jurisdiction increased by 25,090 (56.7%). Additionally, the jobs-household ratio in Redwood City has increased from 1.77 in 2002 to 2.35 jobs per household in 2018.

- **Number of Homes** – The number of new homes built in the Bay Area has not kept pace with the demand, resulting in longer commutes, increasing prices, and exacerbating issues of displacement and homelessness. The number of homes in Redwood City increased, 8.1% from 2010 to 2020, which is *above* the growth rate for San Mateo County and *above* the growth rate of the region's housing stock during this time period.

- **Home Prices** – A diversity of homes at all income levels creates opportunities for all Redwood City residents to live and thrive in the community.

    - **Ownership** The largest proportion of homes had a value in the range of $1M-$1.5M in 2019. Home prices increased by 124.5% from 2010 to 2020.

    - **Rental Prices** – The typical contract rent for an apartment in Redwood City was $2,230 in 2019. Rental prices increased by 76.8% from 2009 to 2019. To rent a typical apartment without cost burden, a household would need to make $89,440 per year.[2]

- **Housing Type** – It is important to have a variety of housing types to meet the needs of a community today and in the future. In 2020, 44.5% of homes in Redwood City were single family detached, 12.9% were single family attached, 6.0% were small multifamily (2-4 units), and 34.5% were medium or large multifamily (5+ units). Between 2010 and 2020, the number of

[1] The Census Bureau's American Community Survey accounts for ethnic origin separate from racial identity. The numbers reported here use an accounting of both such that the racial categories are shown exclusive of Latinx status, to allow for an accounting of the Latinx population regardless of racial identity. The term Hispanic has historically been used to describe people from numerous Central American, South American, and Caribbean countries. In recent years, the term Latino or Latinx has become preferred. This report generally uses Latinx, but occasionally when discussing US Census data, we use Hispanic or Non-Hispanic, to clearly link to the data source.
[2] Note that contract rents may differ significantly from, and often being lower than, current listing prices.

multi-family units increased more than single-family units. Generally, in Redwood City, the share of the housing stock that is detached single family homes is below that of other jurisdictions in the region.

- **Cost Burden** – The U.S. Department of Housing and Urban Development considers housing to be affordable for a household if the household spends less than 30% of its income on housing costs. A household is considered "cost-burdened" if it spends more than 30% of its monthly income on housing costs, while those who spend more than 50% of their income on housing costs are considered "severely cost-burdened." In Redwood City, 20.9% of households spend 30%-50% of their income on housing, while 20.0% of households are severely cost burden and use the majority of their income for housing.

- **Displacement/Gentrification** – According to research from The University of California, Berkeley, 22.7% of households in Redwood City live in neighborhoods that are susceptible to or experiencing displacement, and 9.4% live in areas at risk of or undergoing gentrification. 46.4% of households in Redwood City live in neighborhoods where low-income households are likely excluded due to prohibitive housing costs. There are various ways to address displacement including ensuring new housing at all income levels is built.

- **Neighborhood** – 43.0% of residents in Redwood City live in neighborhoods identified as "Highest Resource" or "High Resource" areas by State-commissioned research, while 17.4% of residents live in areas identified by this research as "Low Resource" or "High Segregation and Poverty" areas. These neighborhood designations are based on a range of indicators covering areas such as education, poverty, proximity to jobs and economic opportunities, low pollution levels, and other factors.[3]

- **Special Housing Needs** – Some population groups may have special housing needs that require specific program responses, and these groups may experience barriers to accessing stable housing due to their specific housing circumstances. In Redwood City, 7.2% of residents have a disability of any kind and may require accessible housing. Additionally, 9.4% of Redwood City households are larger households with five or more people, who likely need larger housing units with three bedrooms or more. 9.6% of households are female-headed families, which are often at greater risk of housing insecurity.

> ***Note on Data***
>
> *Many of the tables in this report are sourced from data from the Census Bureau's American Community Survey or U.S. Department of Housing and Urban Development's Comprehensive Housing Affordability Strategy (CHAS) data, both of which are samples and as such, are subject to sampling variability. This means that data is an estimate, and that other estimates could be possible if another set of*

[3] For more information on the "opportunity area" categories developed by HCD and the California Tax Credit Allocation Committee, see this website: https://www.treasurer.ca.gov/ctcac/opportunity.asp. The degree to which different jurisdictions and neighborhoods have access to opportunity will likely need to be analyzed as part of new Housing Element requirements related to affirmatively furthering fair housing. ABAG/MTC will be providing jurisdictions with technical assistance on this topic this summer, following the release of additional guidance from HCD.

respondents had been reached. We use the five-year release to get a larger data pool to minimize this "margin of error" but particularly for the smaller cities, the data will be based on fewer responses, and the information should be interpreted accordingly.

Additionally, there may be instances where there is no data available for a jurisdiction for particular data point, or where a value is 0 and the automatically generated text cannot perform a calculation. In these cases, the automatically generated text is "NODATA." Staff should reword these sentences before using them in the context of the Housing Element or other documents.

Note on Figures

Any figure that does not specify geography in the figure name represents data for Redwood City.

3 LOOKING TO THE FUTURE: REGIONAL HOUSING NEEDS

3.1 Regional Housing Needs Determination

The Plan Bay Area 2050[4] Final Blueprint forecasts that the nine-county Bay Area will add 1.4 million new households between 2015 and 2050. For the eight-year time frame covered by this Housing Element Update, the Department of Housing and Community Development (HCD) has identified the region's housing need as 441,176 units. The total number of housing units assigned by HCD is separated into four income categories that cover housing types for all income levels, from very low-income households to market rate housing.[5] This calculation, known as the Regional Housing Needs Determination (RHND), is based on population projections produced by the California Department of Finance as well as adjustments that incorporate the region's existing housing need. The adjustments result from recent legislation requiring HCD to apply additional adjustment factors to the baseline growth projection from California Department of Finance, in order for the regions to get closer to healthy housing markets. To this end, adjustments focus on the region's vacancy rate, level of overcrowding and the share of cost burdened households, and seek to bring the region more in line with comparable ones.[6] These new laws governing the methodology for how HCD calculates the RHND resulted in a significantly higher number of housing units for which the Bay Area must plan compared to previous RHNA cycles.

3.2 Regional Housing Needs Allocation

A starting point for the Housing Element Update process for every California jurisdiction is the Regional Housing Needs Allocation or RHNA – the share of the RHND assigned to each jurisdiction by the Association of Bay Area Governments (ABAG). State Housing Element Law requires ABAG to develop a methodology that calculates the number of housing units assigned to each city and county and distributes each jurisdiction's housing unit allocation among four affordability levels. For this RHNA cycle, the RHND increased by 135%, from 187,990 to 441,776. For more information on the RHNA process this cycle, see ABAG's website: https://abag.ca.gov/our-work/housing/rhna-regional-housing-needs-allocation

Almost all jurisdictions in the Bay Area are likely to receive a larger RHNA this cycle compared to the last cycle, primarily due to changes in state law that led to a considerably higher RHND compared to previous cycles.

In January 2021, ABAG adopted a Draft RHNA Methodology, which is currently being reviewed by HCD. For Redwood City, the proposed RHNA to be planned for this cycle is 4,588 units, a slated increase from the last cycle. **Please note that the previously stated figures are merely illustrative, as ABAG has yet to issue Final RHNA allocations. The Final RHNA allocations that local jurisdictions will use for**

---

[4] Plan Bay Area 2050 is a long-range plan charting the course for the future of the nine-county San Francisco Bay Area. It covers four key issues: the economy, the environment, housing and transportation

[5] HCD divides the RHND into the following four income categories:
Very Low-income: 0-50% of Area Median Income
Low-income: 50-80% of Area Median Income
Moderate-income: 80-120% of Area Median Income
Above Moderate-income: 120% or more of Area Median Income

[6] For more information on HCD's RHND calculation for the Bay Area, see this letter sent to ABAG from HCD on June 9, 2020: https://www.hcd.ca.gov/community-development/housing-element/docs/abagrhna-final060920(r).pdf

their Housing Elements will be released at the end of 2021. The potential allocation that Redwood City would receive from the Draft RHNA Methodology is broken down by income category as follows:

Table 1: Illustrative Regional Housing Needs Allocation from Draft Methodology

Income Group	Redwood City Units	San Mateo County Units	Bay Area Units	Redwood City Percent	San Mateo County Percent	Bay Area Percent
Very Low Income (<50% of AMI)	1115	12196	114442	24.3%	25.6%	25.9%
Low Income (50%-80% of AMI)	643	7023	65892	14.0%	14.7%	14.9%
Moderate Income (80%-120% of AMI)	789	7937	72712	17.2%	16.6%	16.5%
Above Moderate Income (>120% of AMI)	2041	20531	188130	44.5%	43.1%	42.6%
Total	4588	47687	441176	100.0%	100.0%	100.0%

Source: Association of Bay Area Governments Methodology and tentative numbers were approved by ABAG's Executive board on January 21, 2021 (Resolution No. 02-2021). The numbers were submitted for review to California Housing and Community Development in February 2021, after which an appeals process will take place during the Summer and Fall of 2021.
THESE NUMBERS SHOULD BE CONSIDERED PRELIMINARY AND SUBJECT TO CHANGE PER HCD REVIEW

4 POPULATION, EMPLOYMENT AND HOUSEHOLD CHARACTERISTICS

4.1 Population

The Bay Area is the fifth-largest metropolitan area in the nation and has seen a steady increase in population since 1990, except for a dip during the Great Recession. Many cities in the region have experienced significant growth in jobs and population. While these trends have led to a corresponding increase in demand for housing across the region, the regional production of housing has largely not kept pace with job and population growth. Since 2000, Redwood City's population has increased by 15.1%; this rate is above that of the region as a whole, at 14.8%. In Redwood City, roughly 14.6% of its population moved during the past year, a number 1.2 percentage points greater than the regional rate of 13.4%.

Table 2: Population Growth Trends

Geography	1990	1995	2000	2005	2010	2015	2020
Redwood City	66072	70724	75402	75723	76815	83180	86754
San Mateo County	649623	685354	707163	719844	718451	761748	773244
Bay Area	6020147	6381961	6784348	7073912	7150739	7595694	7790537

Universe: Total population
Source: California Department of Finance, E-5 series
For more years of data, please refer to the Data Packet Workbook, Table POPEMP-01.

In 2020, the population of Redwood City was estimated to be 86,754 (see Table 2). From 1990 to 2000, the population increased by 14.1%, while it increased by 1.9% during the first decade of the 2000s. In the most recent decade, the population increased by 12.9%. The population of Redwood City makes up 11.2% of San Mateo County.[7]

[7] To compare the rate of growth across various geographic scales, Figure 1 shows population for the jurisdiction, county, and region indexed to the population in the year 1990. This means that the data points represent the population growth (i.e. percent change) in each of these geographies relative to their populations in 1990.

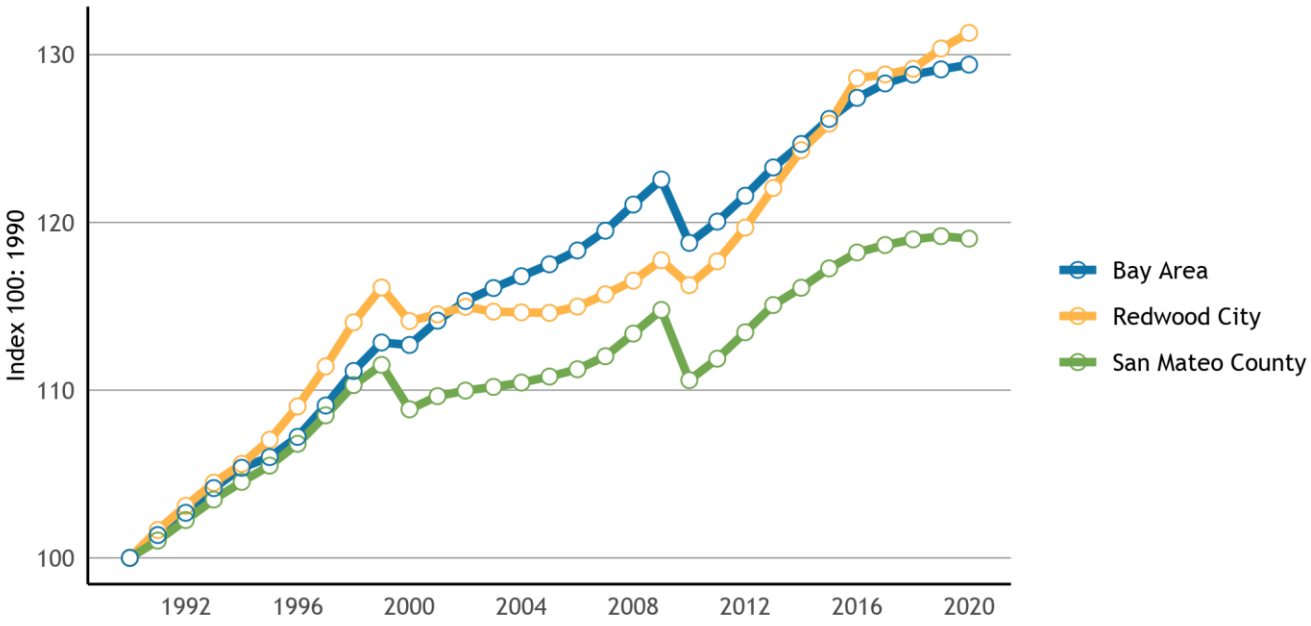


Figure 1: Population Growth Trends

Source: California Department of Finance, E-5 series Note: The data shown on the graph represents population for the jurisdiction, county, and region indexed to the population in the first year shown. The data points represent the relative population growth in each of these geographies relative to their populations in that year.
For some jurisdictions, a break may appear at the end of each decade (1999, 2009) as estimates are compared to census counts. DOF uses the decennial census to benchmark subsequent population estimates.
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-01.

4.2 Age

The distribution of age groups in a city shapes what types of housing the community may need in the near future. An increase in the older population may mean there is a developing need for more senior housing options, while higher numbers of children and young families can point to the need for more family housing options and related services. There has also been a move by many to age-in-place or downsize to stay within their communities, which can mean more multifamily and accessible units are also needed.

In Redwood City, the median age in 2000 was 33.8; by 2019, this figure had increased, landing at around 37 years. More specifically, the population of those under 14 has increased since 2010, while the 65-and-over population has increased (see Figure 2).

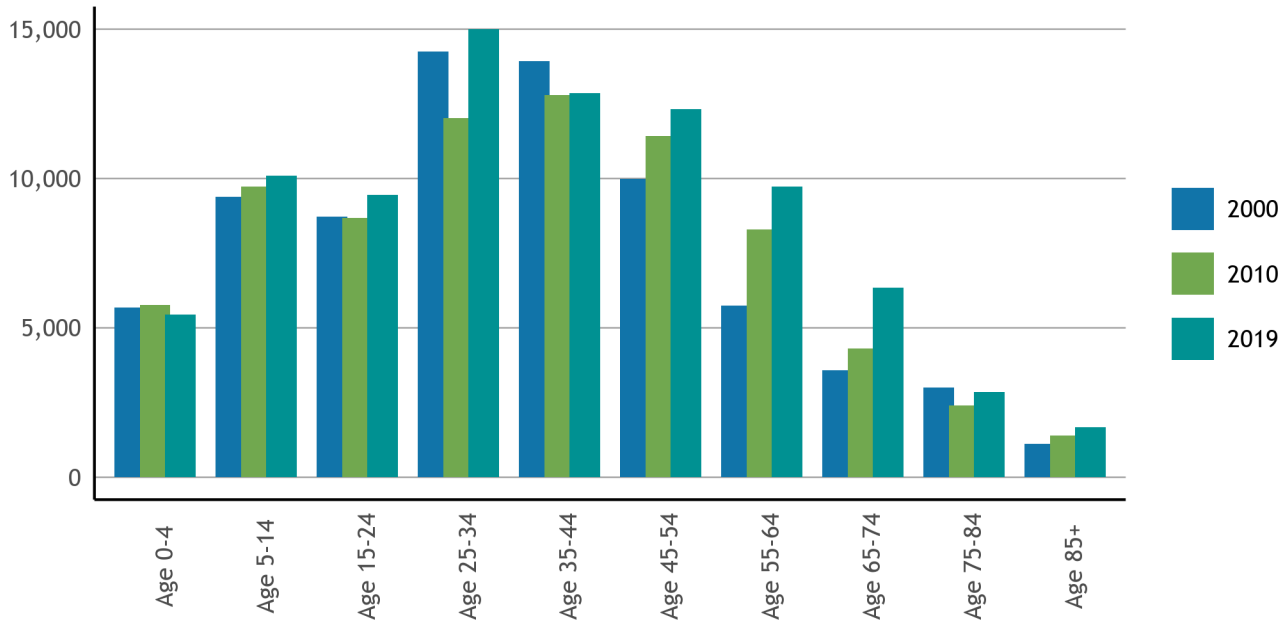


Figure 2: Population by Age, 2000-2019

Universe: Total population
Source: U.S. Census Bureau, Census 2000 SF1, Table P12; U.S. Census Bureau, Census 2010 SF1, Table P12; U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B01001
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-04.

Looking at the senior and youth population by race can add an additional layer of understanding, as families and seniors of color are even more likely to experience challenges finding affordable housing. People of color[8] make up 25.9% of seniors and 50.2% of youth under 18 (see Figure 3).

[8] Here, we count all non-white racial groups

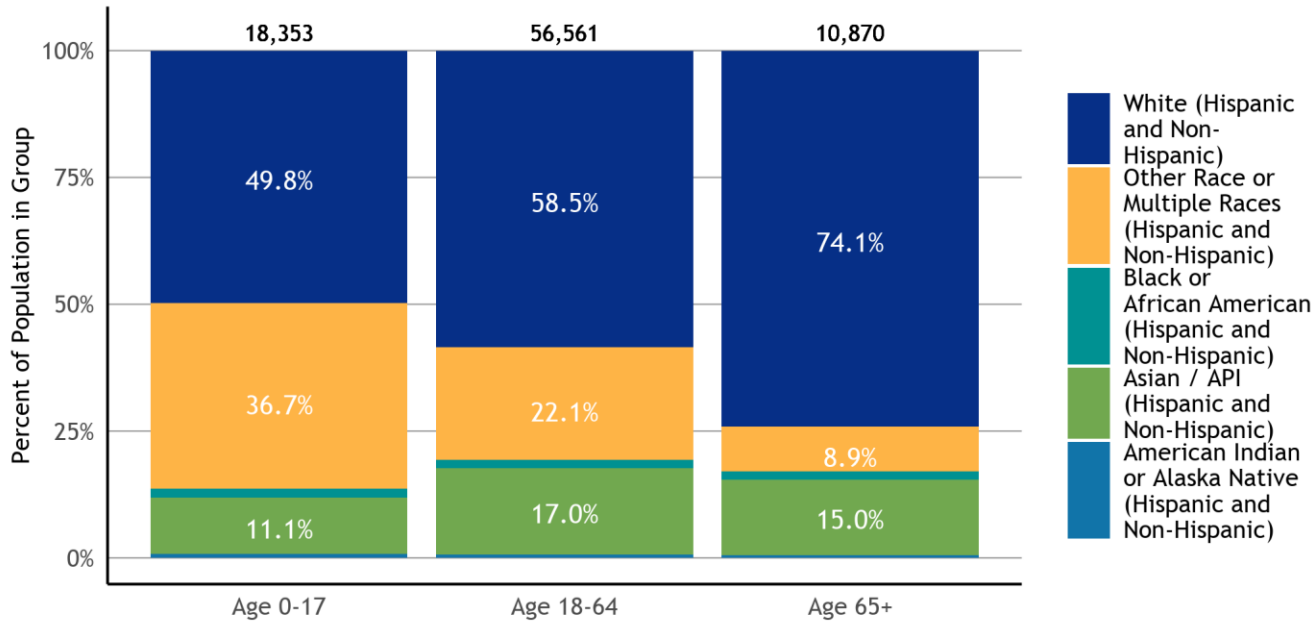


Figure 3: Senior and Youth Population by Race

Universe: Total population
Notes: In the sources for this table, the Census Bureau does not disaggregate racial groups by Hispanic/Latinx ethnicity, and an overlapping category of Hispanic / non-Hispanic groups has not been shown to avoid double counting in the stacked bar chart.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B01001(A-G)
For the data table behind this figure, please refer to the Data Packet Workbook, Table SEN-02.

4.3 Race and Ethnicity

Understanding the racial makeup of a city and region is important for designing and implementing effective housing policies and programs. These patterns are shaped by both market factors and government actions, such as exclusionary zoning, discriminatory lending practices and displacement that has occurred over time and continues to impact communities of color today[9]. Since 2000, the percentage of residents in Redwood City identifying as White has decreased – and by the same token the percentage of residents of all *other* races and ethnicities has *increased* – by 11.2 percentage points, with the 2019 population standing at 37,794 (see Figure 4). In absolute terms, the *Hispanic or Latinx* population increased the most while the *White, Non-Hispanic* population decreased the most.

[9] See, for example, Rothstein, R. (2017). The color of law : a forgotten history of how our government segregated America. New York, NY & London, UK: Liveright Publishing.

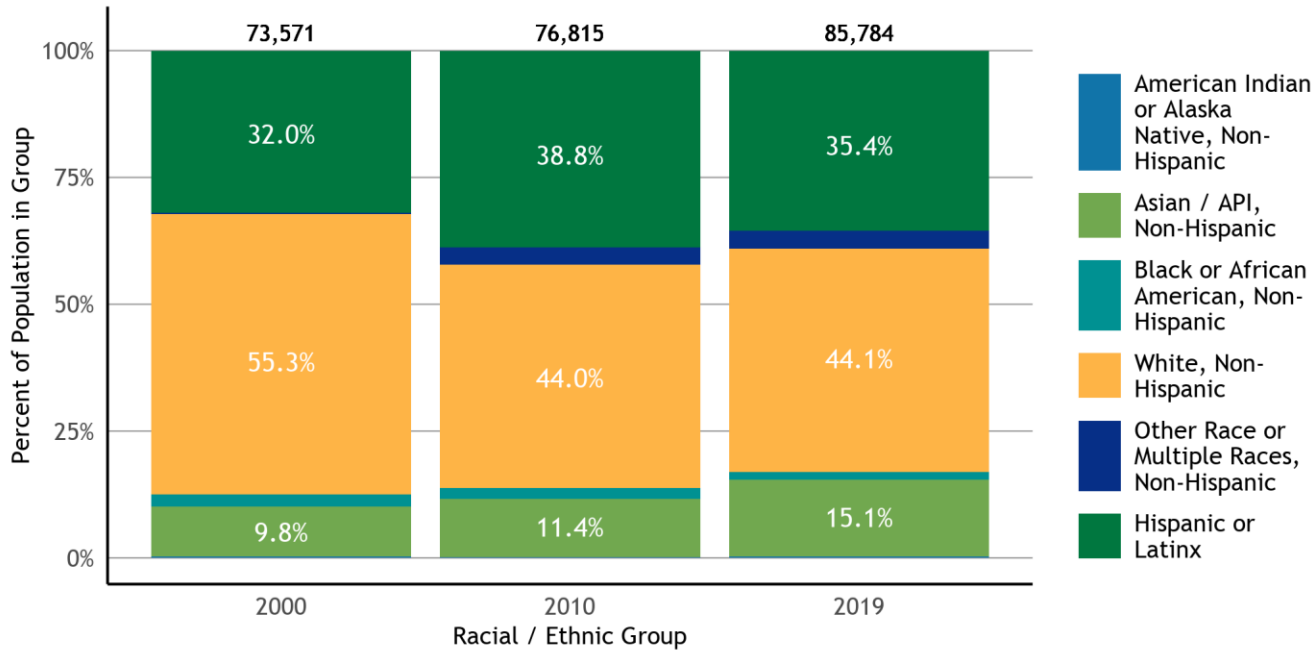


Figure 4: Population by Race, 2000-2019

Universe: Total population
Notes: Data for 2019 represents 2015-2019 ACS estimates. The Census Bureau defines Hispanic/Latinx ethnicity separate from racial categories. For the purposes of this graph, the "Hispanic or Latinx" racial/ethnic group represents those who identify as having Hispanic/Latinx ethnicity and may also be members of any racial group. All other racial categories on this graph represent those who identify with that racial category and do not identify with Hispanic/Latinx ethnicity.
Source: U.S. Census Bureau, Census 2000, Table P004; U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B03002
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-02.

4.4 Employment Trends

4.4.1 Balance of Jobs and Workers

A city houses employed residents who either work in the community where they live or work elsewhere in the region. Conversely, a city may have job sites that employ residents from the same city, but more often employ workers commuting from outside of it. Smaller cities typically will have more employed residents than jobs there and export workers, while larger cities tend to have a surplus of jobs and import workers. To some extent the regional transportation system is set up for this flow of workers to the region's core job centers. At the same time, as the housing affordability crisis has illustrated, local imbalances may be severe, where local jobs and worker populations are out of sync at a sub-regional scale.

One measure of this is the relationship between *workers* and *jobs*. A city with a surplus of workers "exports" workers to other parts of the region, while a city with a surplus of jobs must conversely "import" them. Between 2002 and 2018, the number of jobs in Redwood City increased by 38.3% (see Figure 5).

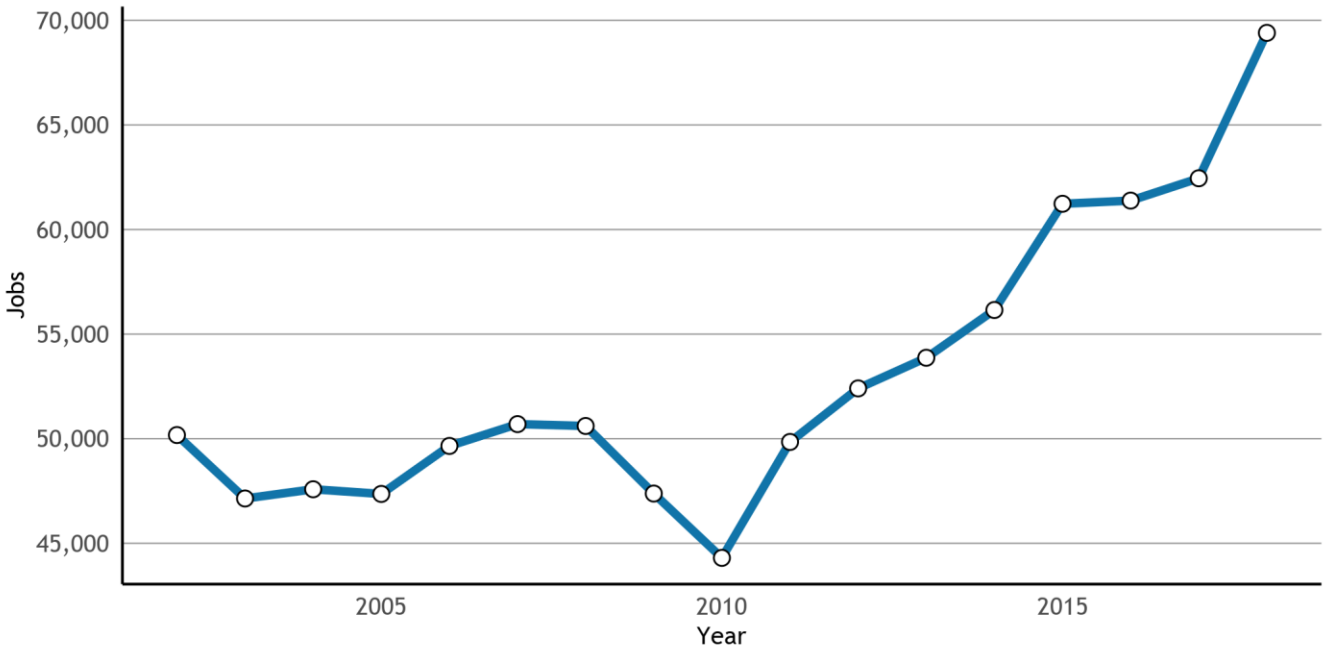


Figure 5: Jobs in a Jurisdiction

Universe: Jobs from unemployment insurance-covered employment (private, state and local government) plus United States Office of Personnel Management-sourced Federal employment
Notes: The data is tabulated by place of work, regardless of where a worker lives. The source data is provided at the census block level. These are crosswalked to jurisdictions and summarized.
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Workplace Area Characteristics (WAC) files, 2002-2018
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-11.

There are 46,687 employed residents, and 60,225 jobs[10] in Redwood City - the ratio of jobs to resident workers is 1.29; Redwood City is *a net importer of workers*.

Figure 6 shows the balance when comparing jobs to workers, broken down by different wage groups, offering additional insight into local dynamics. A community may offer employment for relatively low-income workers but have relatively few housing options for those workers - or conversely, it may house residents who are low wage workers but offer few employment opportunities for them. Such relationships may cast extra light on potentially pent-up demand for housing in particular price categories. A relative *surplus* of jobs relative to residents in a given wage category suggests the need to import those workers, while conversely, surpluses of workers in a wage group relative to jobs means the community will export those workers to other jurisdictions. Such flows are not inherently bad, though over time, sub-regional imbalances may appear. Redwood City has more low-wage *jobs* than low-wage *residents* (where low-wage refers to jobs paying less than $25,000). At the other end of the

[10] Employed *residents* in a jurisdiction is counted by place of residence (they may work elsewhere) while *jobs* in a jurisdiction are counted by place of work (they may live elsewhere). The jobs may differ from those reported in Figure 5 as the source for the time series is from administrative data, while the cross-sectional data is from a survey.

wage spectrum, the city has more high-wage *jobs* than high-wage *residents* (where high-wage refers to jobs paying more than $75,000) (see Figure 6).[11]

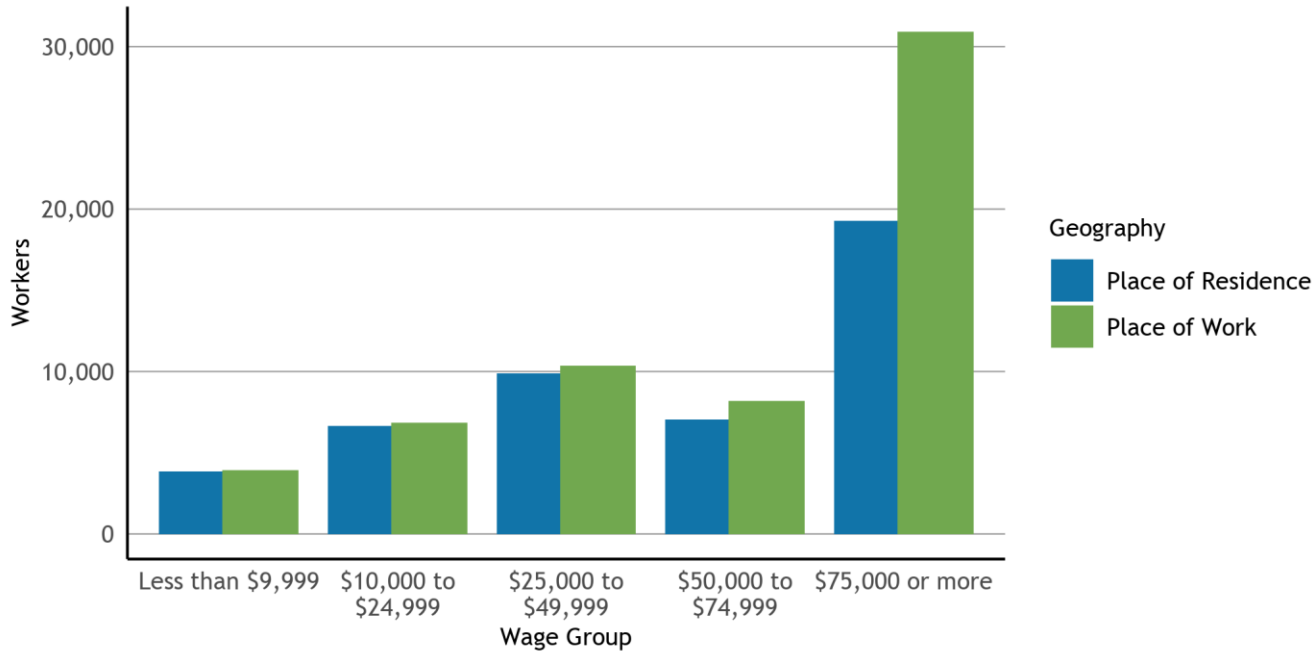


Figure 6: Workers by Earnings, by Jurisdiction as Place of Work and Place of Residence

Universe: Workers 16 years and over with earnings
Source: U.S. Census Bureau, American Community Survey 5-Year Data 2015-2019, B08119, B08519
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-10.

Figure 7 shows the balance of a jurisdiction's resident workers to the jobs located there for different wage groups as a ratio instead - a value of 1 means that a city has the same number of jobs in a wage group as it has resident workers - in principle, a balance. Values above 1 indicate a jurisdiction will need to import workers for jobs in a given wage group. At the regional scale, this ratio is 1.04 jobs for each worker, implying a modest import of workers from outside the region (see Figure 7).

[11] The source table is top-coded at $75,000, precluding more fine grained analysis at the higher end of the wage spectrum.

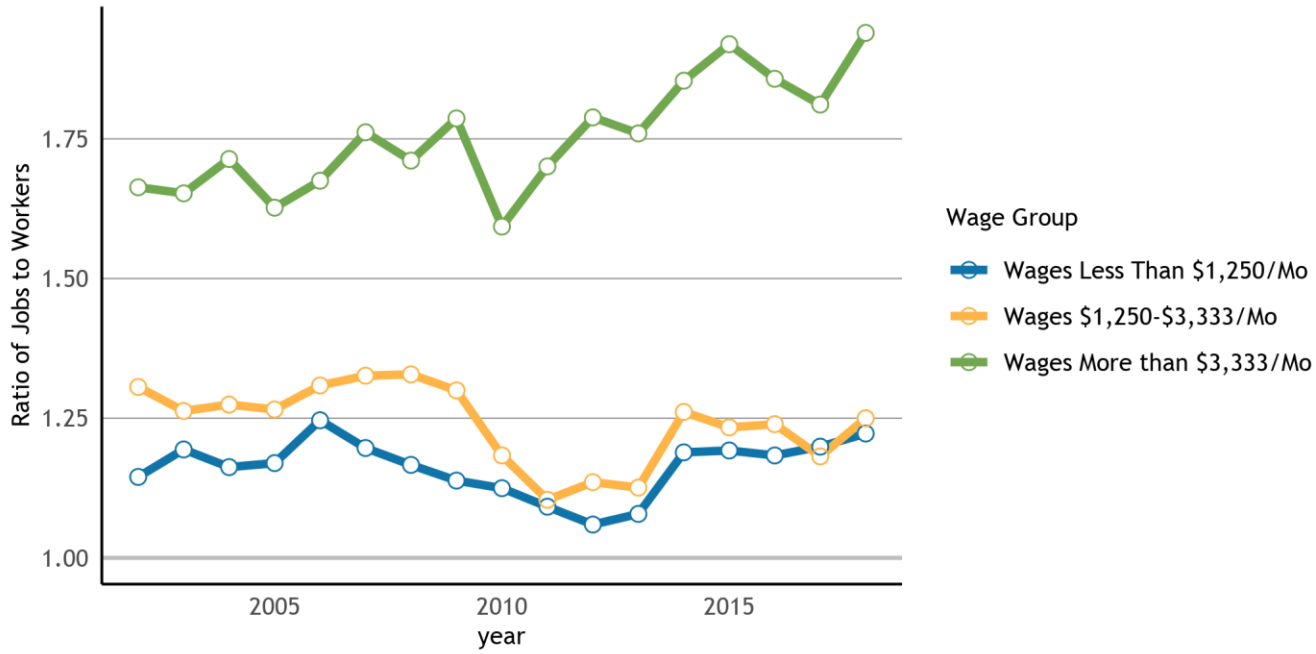


Figure 7: Jobs-Worker Ratios, By Wage Group

Universe: Jobs in a jurisdiction from unemployment insurance-covered employment (private, state and local government) plus United States Office of Personnel Management-sourced Federal employment
Notes: The ratio compares job counts by wage group from two tabulations of LEHD data: Counts by place of work relative to counts by place of residence. See text for details.
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Workplace Area Characteristics (WAC) files (Jobs); Residence Area Characteristics (RAC) files (Employed Residents), 2010-2018
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-14.

Such balances between jobs and workers may directly influence the housing demand in a community. New jobs may draw new residents, and when there is high demand for housing relative to supply, many workers may be unable to afford to live where they work, particularly where job growth has been in relatively lower wage jobs. This dynamic not only means many workers will need to prepare for long commutes and time spent on the road, but in the aggregate it contributes to traffic congestion and time lost for all road users.

If there are more jobs than employed residents, it means a city is relatively jobs-rich, typically also with a high jobs to household ratio. Thus bringing housing into the measure, the *jobs-household ratio* in Redwood City has increased from 1.77 in 2002, to 2.35 jobs per household in 2018 (see Figure 8).

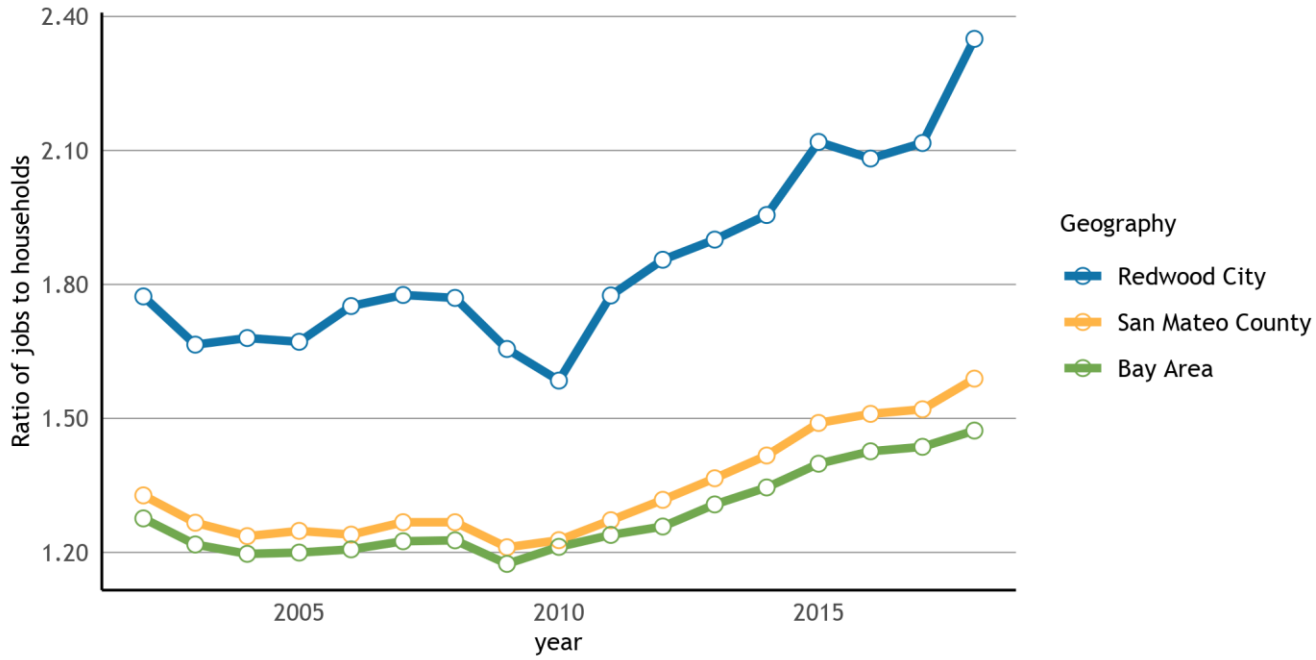


Figure 8: Jobs-Household Ratio

Universe: Jobs in a jurisdiction from unemployment insurance-covered employment (private, state and local government) plus United States Office of Personnel Management-sourced Federal employment; households in a jurisdiction
Notes: The data is tabulated by place of work, regardless of where a worker lives. The source data is provided at the census block level. These are crosswalked to jurisdictions and summarized. The ratio compares place of work wage and salary jobs with households, or occupied housing units. A similar measure is the ratio of jobs to housing units. However, this jobs-household ratio serves to compare the number of jobs in a jurisdiction to the number of housing units that are actually occupied. The difference between a jurisdiction's jobs-housing ratio and jobs-household ratio will be most pronounced in jurisdictions with high vacancy rates, a high rate of units used for seasonal use, or a high rate of units used as short-term rentals.
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, Workplace Area Characteristics (WAC) files (Jobs), 2002-2018; California Department of Finance, E-5 (Households)
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-13.

4.4.2 Sector Composition

In terms of sectoral composition, the largest industry in which Redwood City residents work is *Financial & Professional Services*, and the largest sector in which San Mateo residents work is *Health & Educational Services* (see Figure 9). For the Bay Area as a whole, the *Health & Educational Services* industry employs the most workers.

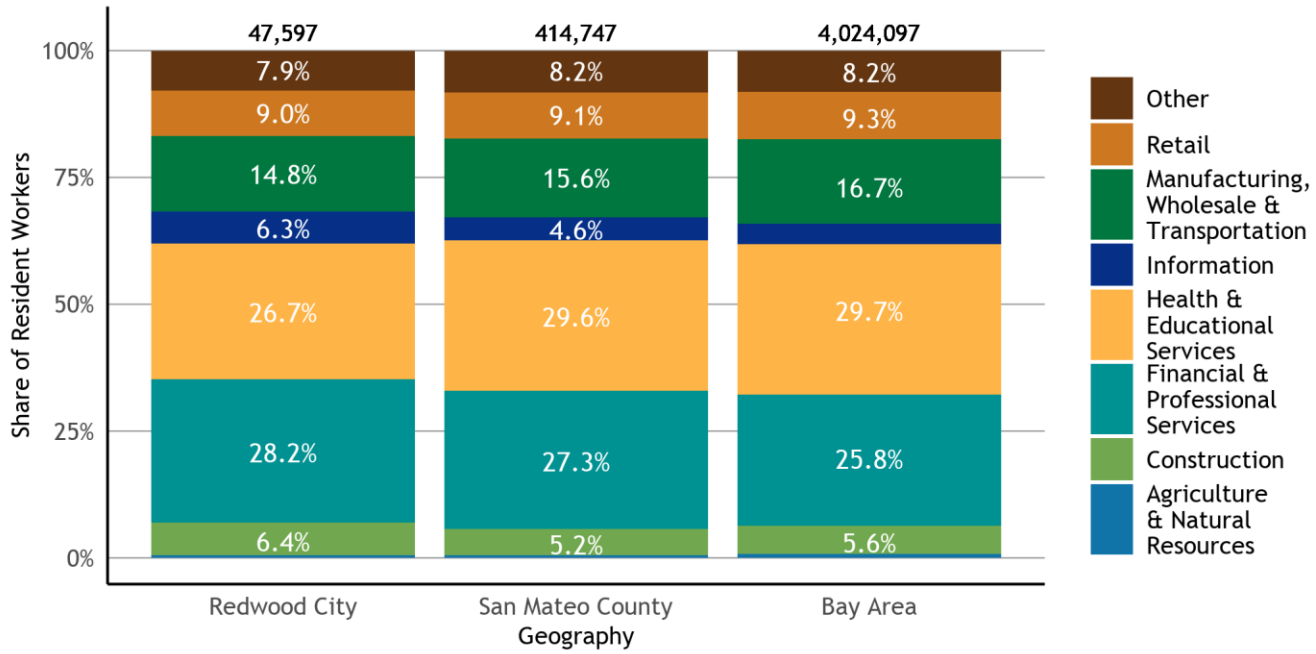


Figure 9: Resident Employment by Industry

Universe: Civilian employed population age 16 years and over
Notes: The data displayed shows the industries in which jurisdiction residents work, regardless of the location where those residents are employed (whether within the jurisdiction or not). Categories are derived from the following source tables: Agriculture & Natural Resources: C24030_003E, C24030_030E; Construction: C24030_006E, C24030_033E; Manufacturing, Wholesale & Transportation: C24030_007E, C24030_034E, C24030_008E, C24030_035E, C24030_010E, C24030_037E; Retail: C24030_009E, C24030_036E; Information: C24030_013E, C24030_040E; Financial & Professional Services: C24030_014E, C24030_041E, C24030_017E, C24030_044E; Health & Educational Services: C24030_021E, C24030_024E, C24030_048E, C24030_051E; Other: C24030_027E, C24030_054E, C24030_028E, C24030_055E
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table C24030
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-06.

4.4.3 Unemployment

In Redwood City, there was a 3.6 percentage point decrease in the unemployment rate between January 2010 and January 2021. Jurisdictions through the region experienced a sharp rise in unemployment in 2020 due to impacts related to the COVID-19 pandemic, though with a general improvement and recovery in the later months of 2020.

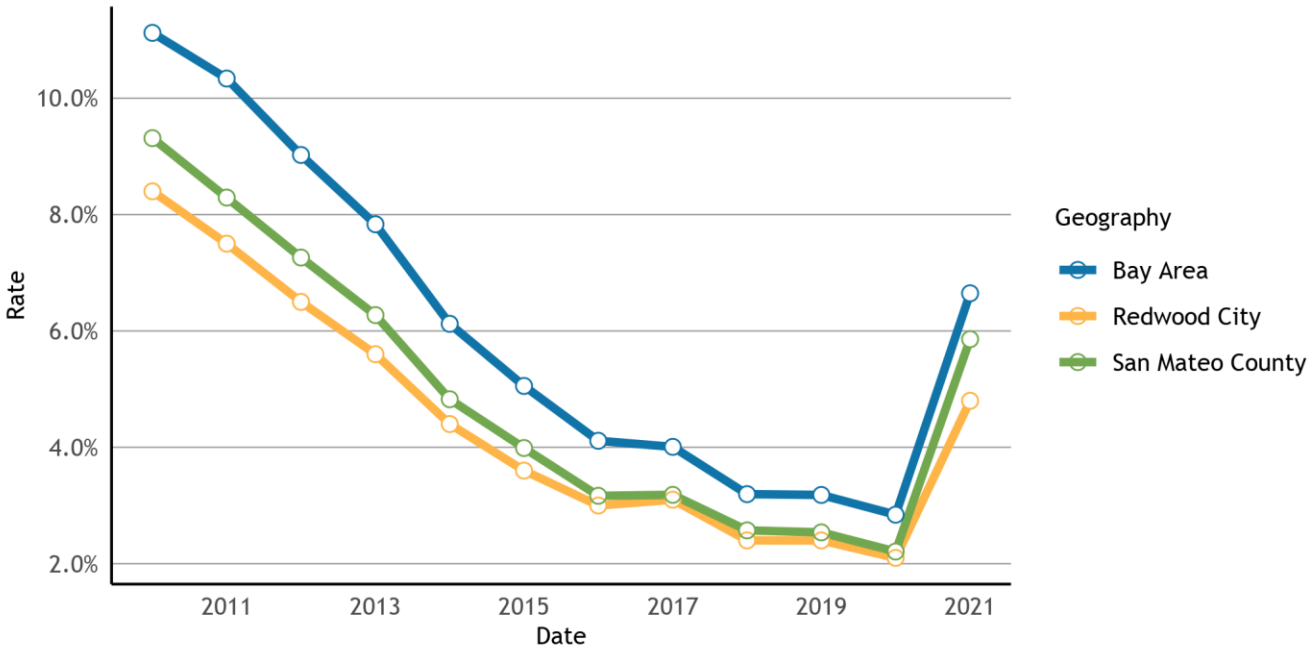


Figure 10: Unemployment Rate

Universe: Civilian noninstitutional population ages 16 and older
Notes: Unemployment rates for the jurisdiction level is derived from larger-geography estimates. This method assumes that the rates of change in employment and unemployment are exactly the same in each sub-county area as at the county level. If this assumption is not true for a specific sub-county area, then the estimates for that area may not be representative of the current economic conditions. Since this assumption is untested, caution should be employed when using these data. Only not seasonally-adjusted labor force (unemployment rates) data are developed for cities and CDPs.
Source: California Employment Development Department, Local Area Unemployment Statistics (LAUS), Sub-county areas monthly updates, 2010-2021.
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-15.

4.5 Extremely Low-Income Households

Despite the economic and job growth experienced throughout the region since 1990, the income gap has continued to widen. California is one of the most economically unequal states in the nation, and the Bay Area has the highest income inequality between high- and low-income households in the state[12].

In Redwood City, 47.2% of households make more than 100% of the Area Median Income (AMI)[13], compared to 15.5% making less than 30% of AMI, which is considered extremely low-income (see Figure 11).

[12] Bohn, S.et al. 2020. Income Inequality and Economic Opportunity in California. *Public Policy Institute of California*.
[13] Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located. Households making between 80 and 120

Regionally, more than half of all households make more than 100% AMI, while 15% make less than 30% AMI. In San Mateo County, 30% AMI is the equivalent to the annual income of $44,000 for a family of four. Many households with multiple wage earners – including food service workers, full-time students, teachers, farmworkers and healthcare professionals – can fall into lower AMI categories due to relatively stagnant wages in many industries.

Note on Estimating the Projected Number of Extremely Low-Income Households

Local jurisdictions are required to provide an estimate for their projected extremely low-income households in their Housing Elements. HCD's official Housing Element guidance notes that jurisdictions can use their RHNA for very low-income households (those making 0-50% AMI) to calculate their projected extremely low-income households. For more information, visit HCD's Building Blocks page on Extremely Low-Income Housing Needs.

This document does not contain the required data point of projected extremely low-income households, as Bay Area jurisdictions have not yet received their final RHNA numbers. Once Redwood City receives its 6th Cycle RHNA, staff can estimate the projected extremely low-income households using one of the following three methodologies:

Option A: *Assume that 59.8% of Redwood City's very low-income RHNA is for extremely low-income households.*

According to HCD's Regional Housing Need Determination for the Bay Area, 15.5% of the region's housing need is for 0-30% AMI households while 25.9% is for 0-50% AMI households. Therefore, extremely low-income housing need represents 59.8% of the region's very low-income housing need, as 15.5 divided by 25.9 is 59.8%. This option aligns with HCD's guidance to use U.S. Census data to calculate the percentage of very low-income RHNA that qualifies for extremely low-income households, as HCD uses U.S. Census data to calculate the Regional Housing Need Determination.

Option B: *Assume that 55.9% of Redwood City's very low-income RHNA is for extremely low-income households.*

According to the data shown below (Figure 11), 8,358 of Redwood City's households are 0-50% AMI while 4,673 are extremely low-income. Therefore, extremely low-income households represent 55.9% of households who are 0-50% AMI, as 4,673 divided by 8,358 is 55.9%. This option aligns with HCD's guidance to use U.S. Census data to calculate the percentage of very low-income RHNA that qualifies for extremely low-income households, as the information in Figure 11 represents a tabulation of Census Bureau Data.

Option C: *Assume that 50% of Redwood City's very low-income RHNA is for extremely low-income households.*

HCD's guidance notes that instead of using use U.S. Census data to calculate the percentage of very low-income RHNA that qualifies for extremely low-income households, local jurisdictions can presume that 50% of their RHNA for very low-income households qualifies for extremely low-income households.

percent of the AMI are moderate-income, those making 50 to 80 percent are low-income, those making 30 to 50 percent are very low-income, and those making less than 30 percent are extremely low-income. This is then adjusted for household size.

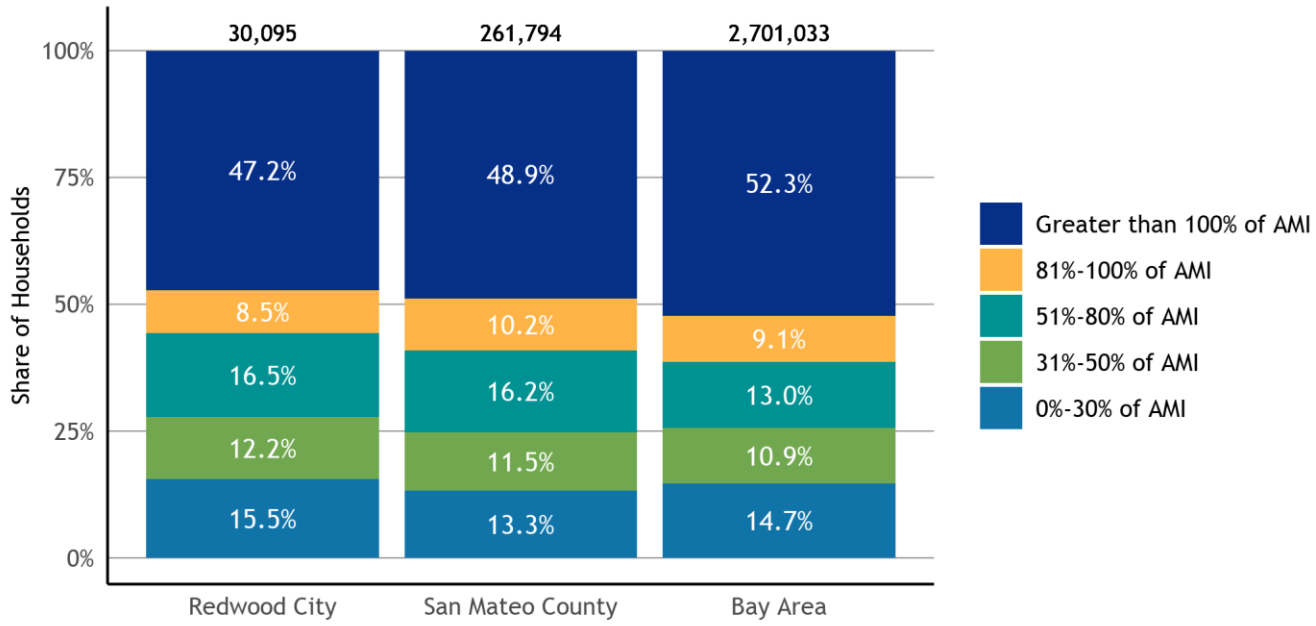


Figure 11: Households by Household Income Level

Universe: Occupied housing units
Notes: Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located. The data that is reported for the Bay Area is not based on a regional AMI but instead refers to the regional total of households in an income group relative to the AMI for the county where that household is located. Local jurisdictions are required to provide an estimate for their projected extremely low-income households (0-30% AMI) in their Housing Elements. HCD's official Housing Element guidance notes that jurisdictions can use their RHNA for very low-income households (those making 0-50% AMI) to calculate their projected extremely low-income households. As Bay Area jurisdictions have not yet received their final RHNA numbers, this document does not contain the required data point of projected extremely low-income households. The report portion of the housing data needs packet contains more specific guidance for how local staff can calculate an estimate for projected extremely low-income households once jurisdictions receive their 6th cycle RHNA numbers.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table ELI-01.

Throughout the region, there are disparities between the incomes of homeowners and renters. Typically, the number of low-income renters greatly outpaces the amount of housing available that is affordable for these households.

In Redwood City, the largest proportion of renters falls in the *Greater than 100% of AMI* income group, while the largest proportion of homeowners are found in the *Greater than 100% of AMI* group (see Figure 12).

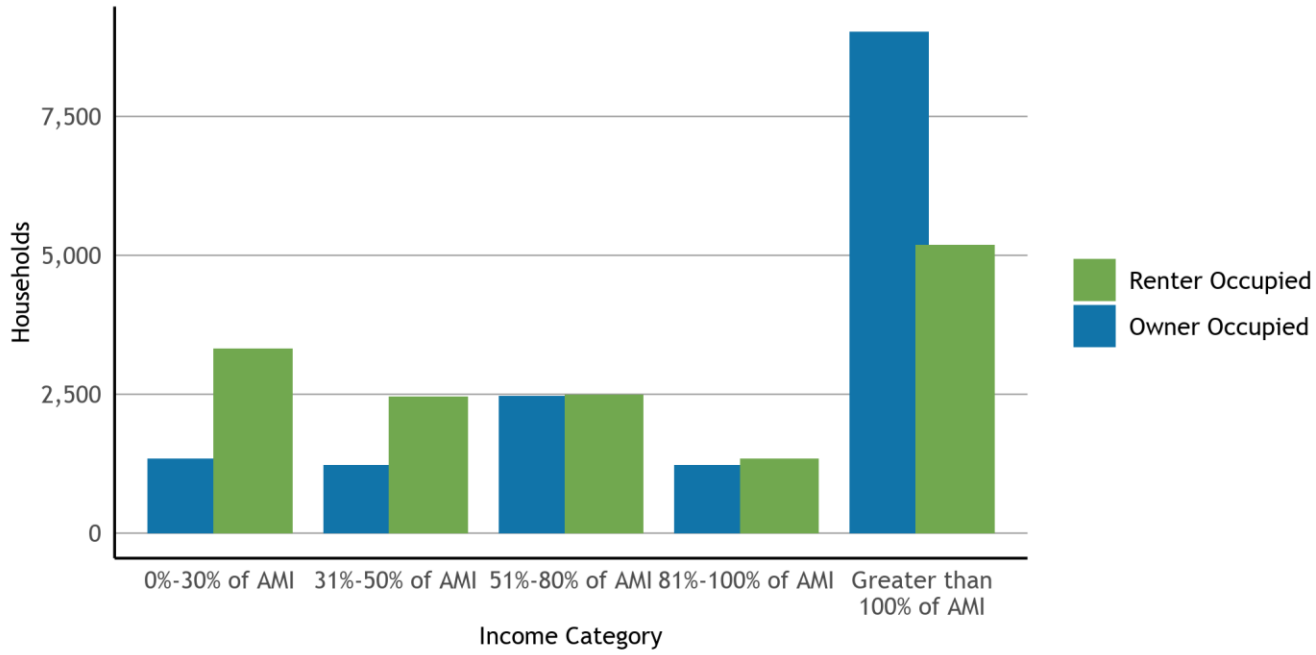


Figure 12: Household Income Level by Tenure

Universe: Occupied housing units
Notes: Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-21.

Currently, people of color are more likely to experience poverty and financial instability as a result of federal and local housing policies that have historically excluded them from the same opportunities extended to white residents.[14] These economic disparities also leave communities of color at higher risk for housing insecurity, displacement or homelessness. In Redwood City, American Indian or Alaska Native (Hispanic and Non-Hispanic) residents experience the highest rates of poverty, followed by Black or African American (Hispanic and Non-Hispanic) residents (see Figure 13).

[14] Moore, E., Montojo, N. and Mauri, N., 2019. Roots, Race & Place: A History of Racially Exclusionary Housing the San Francisco Bay Area. *Hass Institute*.

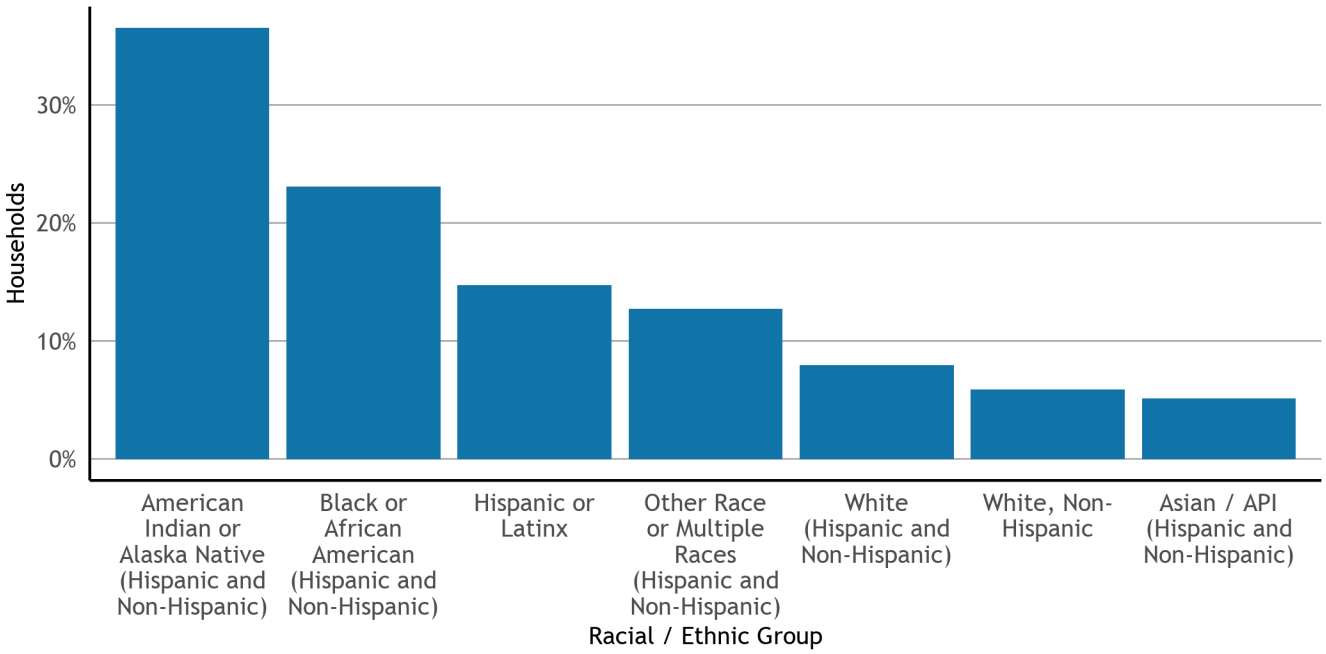


Figure 13: Poverty Status by Race

Universe: Population for whom poverty status is determined
Notes: The Census Bureau uses a federally defined poverty threshold that remains constant throughout the country and does not correspond to Area Median Income. For this table, the Census Bureau does not disaggregate racial groups by Hispanic/Latinx ethnicity. However, data for the white racial group is also reported for white householders who are not Hispanic/Latinx. Since residents who identify as white and Hispanic/Latinx may have very different experiences within the housing market and the economy from those who identify as white and non-Hispanic/Latinx, data for multiple white sub-groups are reported here. The racial/ethnic groups reported in this table are not all mutually exclusive. Therefore, the data should not be summed as the sum exceeds the population for whom poverty status is determined for this jurisdiction. However, all groups labelled "Hispanic and Non-Hispanic" are mutually exclusive, and the sum of the data for these groups is equivalent to the population for whom poverty status is determined.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B17001(A-I)
For the data table behind this figure, please refer to the Data Packet Workbook, Table ELI-03.

4.6 Tenure

The number of residents who own their homes compared to those who rent their homes can help identify the level of housing insecurity – ability for individuals to stay in their homes – in a city and region. Generally, renters may be displaced more quickly if prices increase. In Redwood City there are a total of 30,829 housing units, and more residents rent than own their homes: 50.2% versus 49.8% (see Figure 14). By comparison, 39.8% of households in San Mateo County are renters, while 44% of Bay Area households rent their homes.

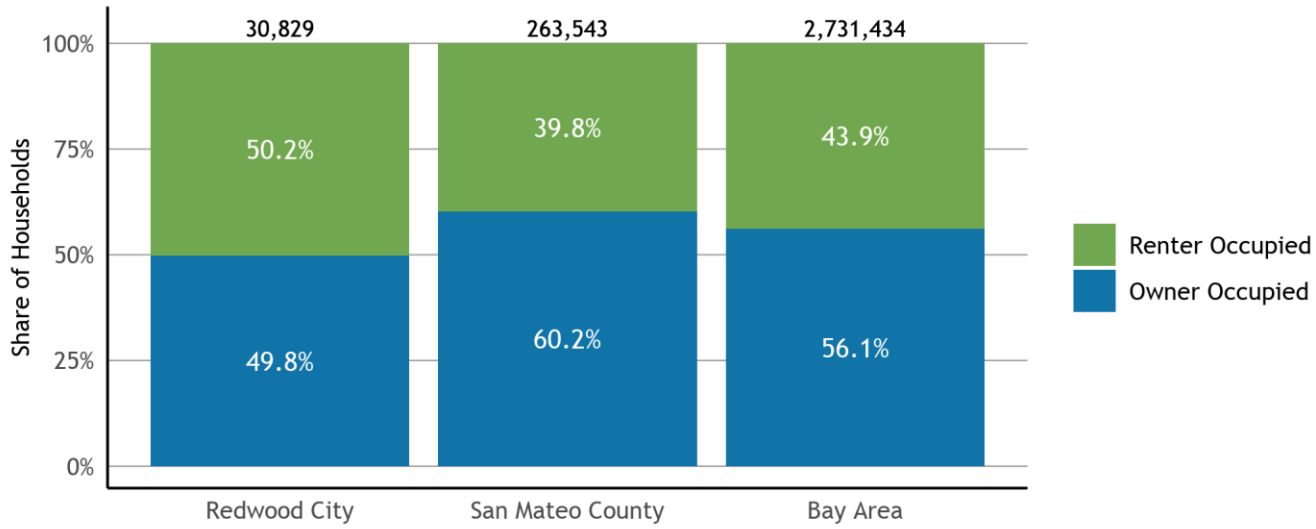


Figure 14: Housing Tenure

Universe: Occupied housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25003
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-16.

Homeownership rates often vary considerably across race/ethnicity in the Bay Area and throughout the country. These disparities not only reflect differences in income and wealth but also stem from federal, state, and local policies that limited access to homeownership for communities of color while facilitating homebuying for white residents. While many of these policies, such as redlining, have been formally disbanded, the impacts of race-based policy are still evident across Bay Area communities.[15] In Redwood City, 20.7% of Black households owned their homes, while homeownership rates were 58.1% for Asian households, 27.9% for Latinx households, and 54.6% for White households. Notably, recent changes to state law require local jurisdictions to examine these dynamics and other fair housing issues when updating their Housing Elements.

[15] See, for example, Rothstein, R. (2017). The color of law : a forgotten history of how our government segregated America. New York, NY & London, UK: Liveright Publishing.

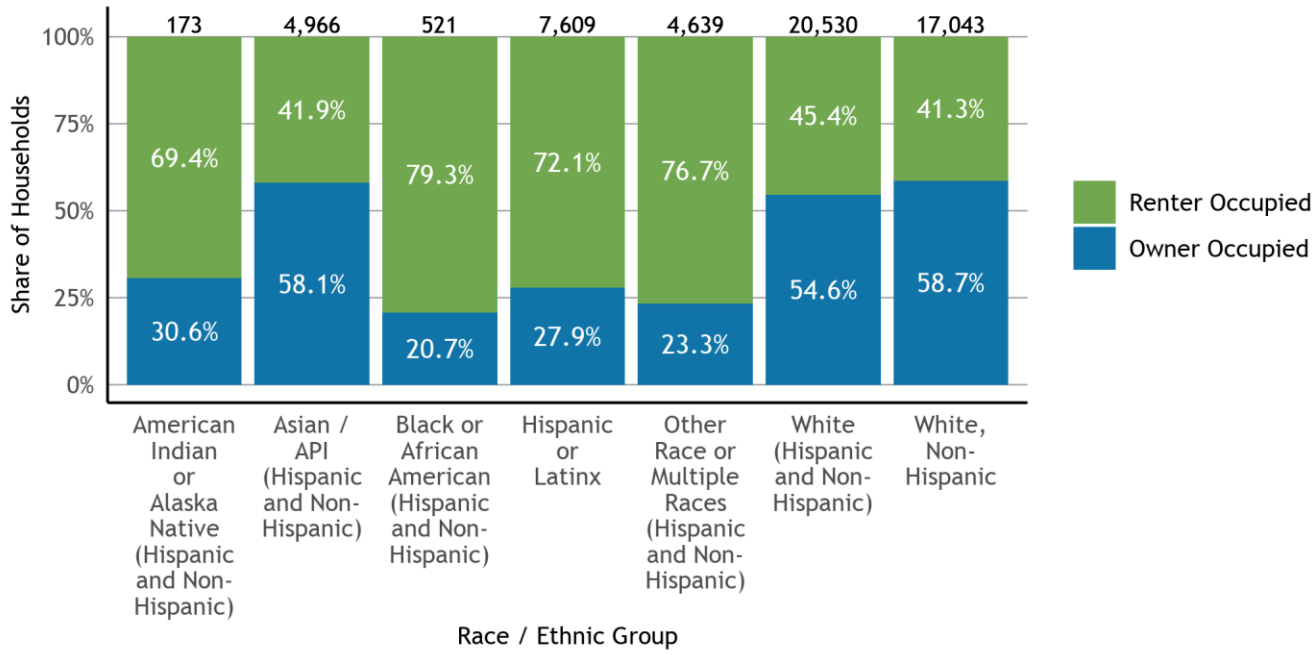


Figure 15: Housing Tenure by Race of Householder

Universe: Occupied housing units
Notes: For this table, the Census Bureau does not disaggregate racial groups by Hispanic/Latinx ethnicity. However, data for the white racial group is also reported for white householders who are not Hispanic/Latinx. Since residents who identify as white and Hispanic/Latinx may have very different experiences within the housing market and the economy from those who identify as white and non-Hispanic/Latinx, data for multiple white sub-groups are reported here. The racial/ethnic groups reported in this table are not all mutually exclusive. Therefore, the data should not be summed as the sum exceeds the total number of occupied housing units for this jurisdiction. However, all groups labelled "Hispanic and Non-Hispanic" are mutually exclusive, and the sum of the data for these groups is equivalent to the total number of occupied housing units.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25003(A-I)
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-20.

The age of residents who rent or own their home can also signal the housing challenges a community is experiencing. Younger households tend to rent and may struggle to buy a first home in the Bay Area due to high housing costs. At the same time, senior homeowners seeking to downsize may have limited options in an expensive housing market.

In Redwood City, 68.8% of householders between the ages of 25 and 44 are renters, while 27.9% of householders over 65 are (see Figure 16).

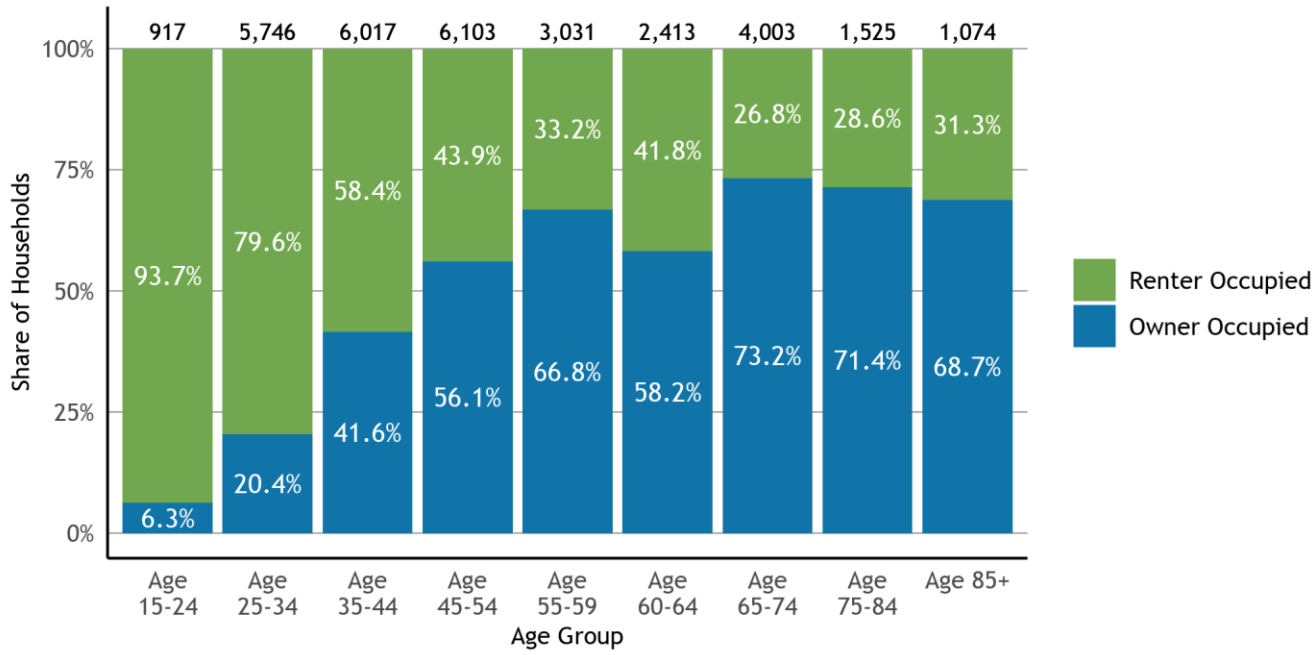


Figure 16: Housing Tenure by Age

Universe: Occupied housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25007
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-18.

In many cities, homeownership rates for households in single-family homes are substantially higher than the rates for households in multi-family housing. In Redwood City, 82.4% of households in detached single-family homes are homeowners, while 11.1% of households in multi-family housing are homeowners (see Figure 17).

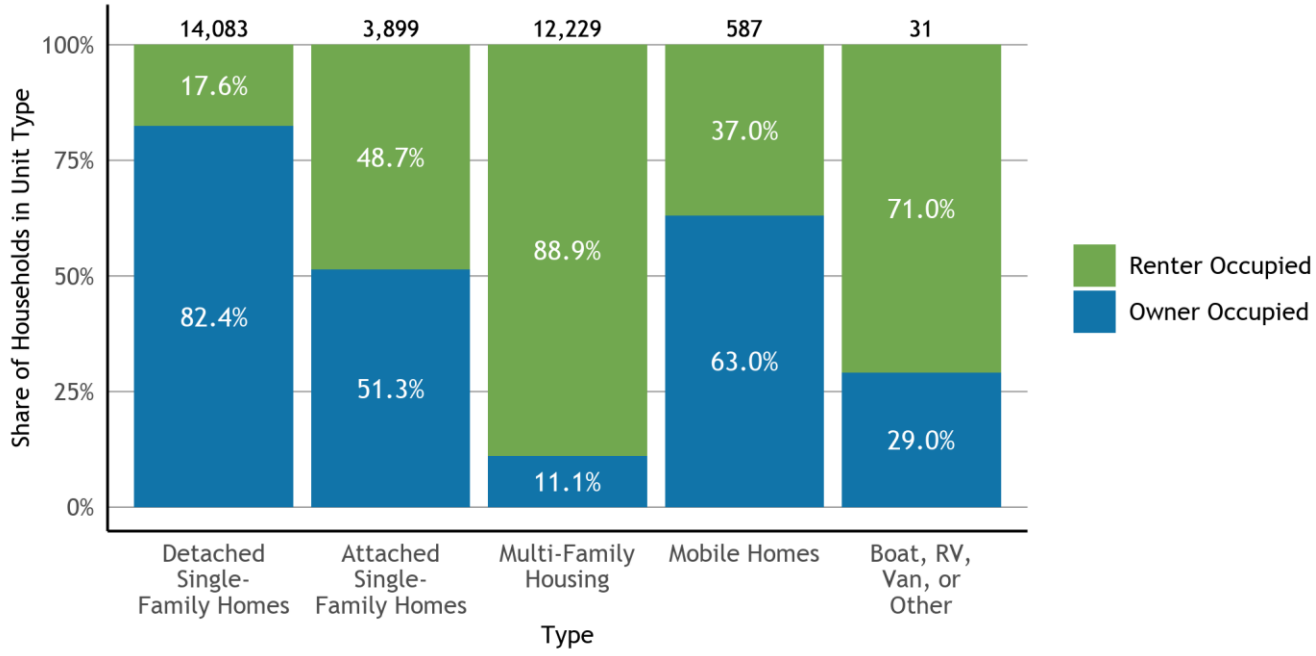


Figure 17: Housing Tenure by Housing Type

Universe: Occupied housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25032
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-22.

4.7 Displacement

Because of increasing housing prices, displacement is a major concern in the Bay Area. Displacement has the most severe impacts on low- and moderate-income residents. When individuals or families are forced to leave their homes and communities, they also lose their support network.

The University of California, Berkeley has mapped all neighborhoods in the Bay area, identifying their risk for gentrification. They find that in Redwood City, 22.7% of households live in neighborhoods that are susceptible to or experiencing displacement and 9.4% live in neighborhoods at risk of or undergoing gentrification.

Equally important, some neighborhoods in the Bay Area do not have housing appropriate for a broad section of the workforce. UC Berkeley estimates that 46.4% of households in Redwood City live in neighborhoods where low-income households are likely to be excluded due to prohibitive housing costs.[16]

[16] More information about this gentrification and displacement data is available at the Urban Displacement Project's webpage: https://www.urbandisplacement.org/. Specifically, one can learn more about the different gentrification/displacement typologies shown in Figure 18 at this link: https://www.urbandisplacement.org/sites/default/files/typology_sheet_2018_0.png. Additionally, one can view maps that show which typologies correspond to which parts of a jurisdiction here: https://www.urbandisplacement.org/san-francisco/sf-bay-area-gentrification-and-displacement

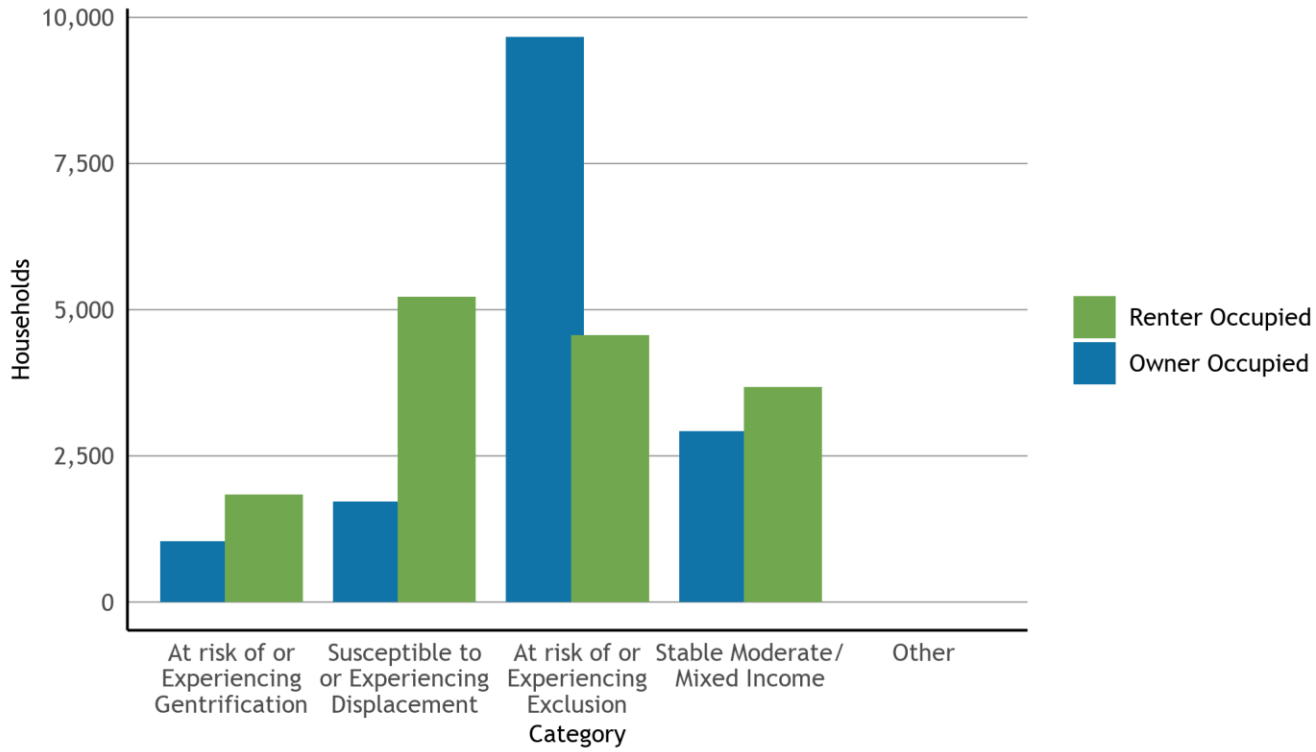


Figure 18: Households by Displacement Risk and Tenure

Universe: Households
Notes: Displacement data is available at the census tract level. Staff aggregated tracts up to jurisdiction level using census 2010 population weights, assigning a tract to jurisdiction in proportion to block level population weights. Total household count may differ slightly from counts in other tables sourced from jurisdiction level sources. Categories are combined as follows for simplicity: At risk of or Experiencing Exclusion: At Risk of Becoming Exclusive; Becoming Exclusive; Stable/Advanced Exclusive At risk of or Experiencing Gentrification: At Risk of Gentrification; Early/Ongoing Gentrification; Advanced Gentrification Stable Moderate/Mixed Income: Stable Moderate/Mixed Income Susceptible to or Experiencing Displacement: Low-Income/Susceptible to Displacement; Ongoing Displacement Other: High Student Population; Unavailable or Unreliable Data
Source: Urban Displacement Project for classification, American Community Survey 5-Year Data (2015-2019), Table B25003 for tenure.
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-25.

5 HOUSING STOCK CHARACTERISTICS

5.1 Housing Types, Year Built, Vacancy, and Permits

In recent years, most housing produced in the region and across the state consisted of single-family homes and larger multi-unit buildings. However, some households are increasingly interested in "missing middle housing" – including duplexes, triplexes, townhomes, cottage clusters and accessory dwelling units (ADUs). These housing types may open up more options across incomes and tenure, from young households seeking homeownership options to seniors looking to downsize and age-in-place.

The housing stock of Redwood City in 2020 was made up of 44.5% single family detached homes, 12.9% single family attached homes, 6.0% multifamily homes with 2 to 4 units, 34.5% multifamily homes with 5 or more units, and 2.0% mobile homes (see Figure 19). In Redwood City, the housing type that experienced the most growth between 2010 and 2020 was *Multifamily Housing: Five-plus Units*.

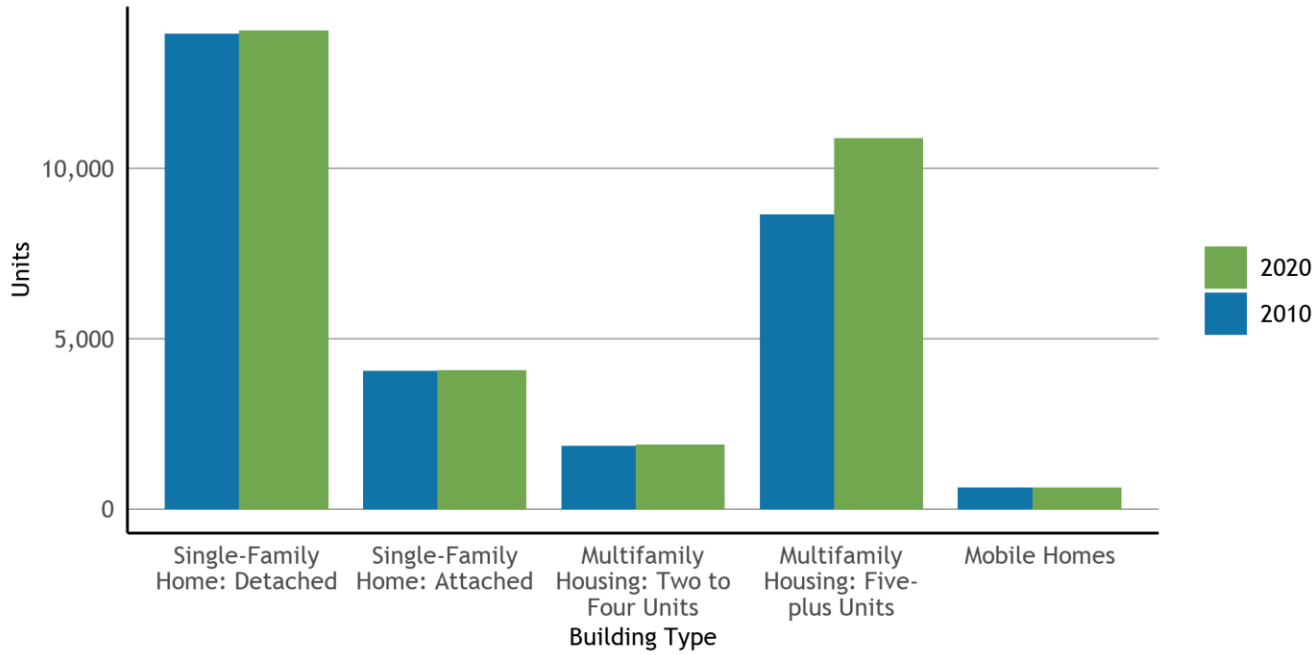


Figure 19: Housing Type Trends

Universe: Housing units
Source: California Department of Finance, E-5 series
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-01.

Production has not kept up with housing demand for several decades in the Bay Area, as the total number of units built and available has not yet come close to meeting the population and job growth experienced throughout the region. In Redwood City, the largest proportion of the housing stock was built 1940 to 1959, with 10,803 units constructed during this period (see Figure 20). Since 2010, 6.9% of the current housing stock was built, which is 2,212 units.

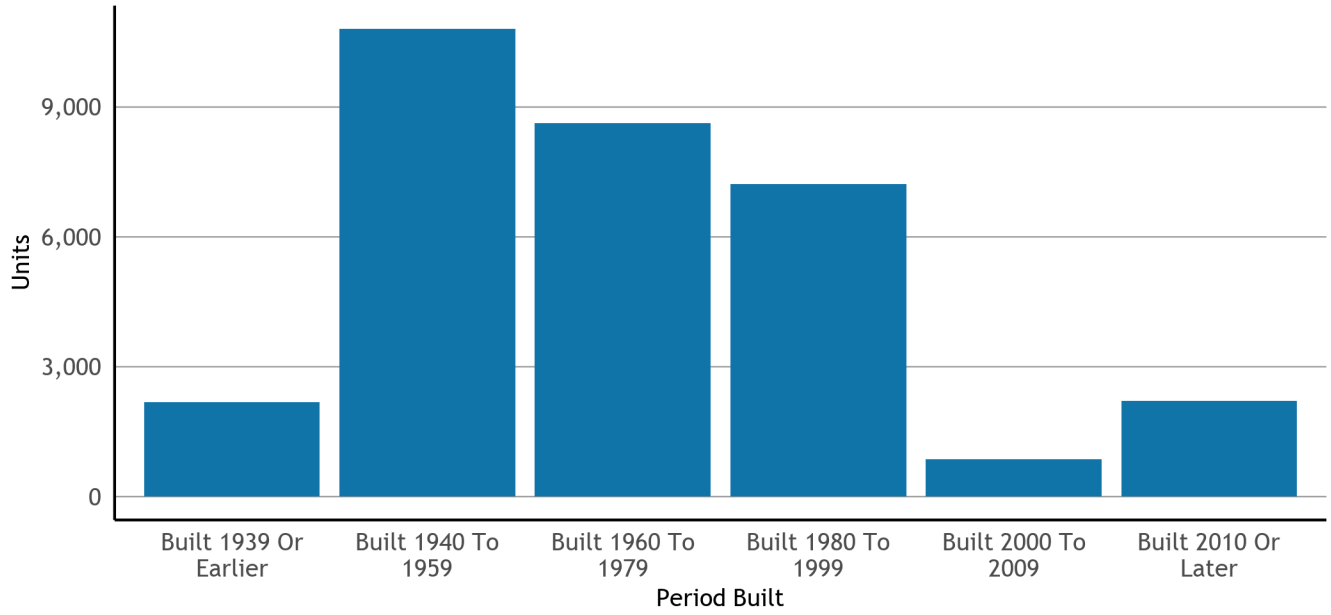


Figure 20: Housing Units by Year Structure Built

Universe: Housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25034
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-04.

Vacant units make up 3.4% of the overall housing stock in Redwood City. The rental vacancy stands at 2.9%, while the ownership vacancy rate is 0.8%. Of the vacant units, the most common type of vacancy is *For Rent* (see Figure 21).[17]

Throughout the Bay Area, vacancies make up 2.6% of the total housing units, with homes listed for rent; units used for *recreational or occasional use*, and units not otherwise classified (*other vacant*) making up the majority of vacancies. The Census Bureau classifies a unit as vacant if no one is occupying it when census interviewers are conducting the American Community Survey or Decennial Census. Vacant units classified as "for recreational or occasional use" are those that are held for short-term periods of use throughout the year. Accordingly, vacation rentals and short-term rentals like AirBnB are likely to fall in this category. The Census Bureau classifies units as "other vacant" if they are vacant due to foreclosure, personal/family reasons, legal proceedings, repairs/renovations, abandonment, preparation for being rented or sold, or vacant for an extended absence for reasons such as a work assignment, military duty, or incarceration.[18] In a region with a thriving economy and housing market like the Bay Area, units being renovated/repaired and prepared for rental or sale are likely to represent a large portion of the "other vacant" category. Additionally, the need for seismic retrofitting

[17] The vacancy rates by tenure is for a smaller universe than the total vacancy rate first reported, which in principle includes the full stock (3.4%). The vacancy by tenure counts are rates relative to the rental stock (occupied and vacant) and ownership stock (occupied and vacant) - but exclude a a significant number of vacancy categories, including the numerically significant *other vacant*.
[18] For more information, see pages 3 through 6 of this list of definitions prepared by the Census Bureau: https://www.census.gov/housing/hvs/definitions.pdf.

in older housing stock could also influence the proportion of "other vacant" units in some jurisdictions.[19]

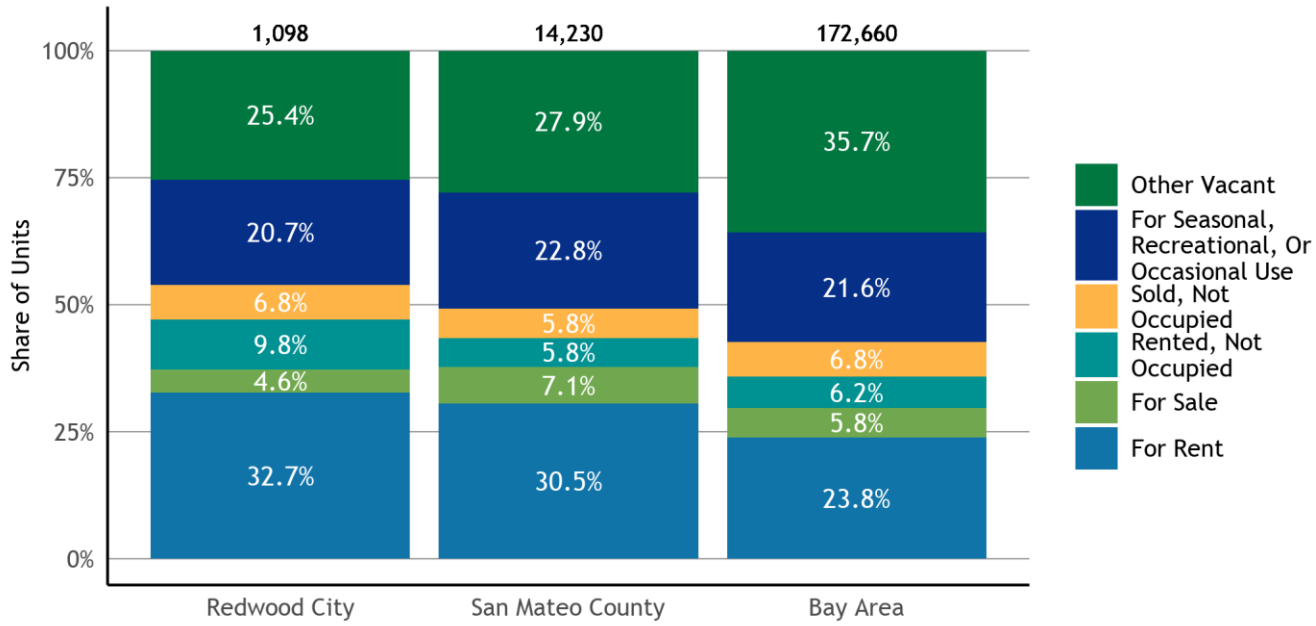


Figure 21: Vacant Units by Type

Universe: Vacant housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25004
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-03.

Between 2015 and 2019, 2,057 housing units were issued permits in Redwood City. 86.6% of permits issued in Redwood City were for above moderate-income housing, 0.0% were for moderate-income housing, and 13.4% were for low- or very low-income housing (see Table 3).

Table 3: Housing Permitting

Income Group	value
Above Moderate Income Permits	1782
Low Income Permits	151
Very Low Income Permits	124
Moderate Income Permits	0

Universe: Housing permits issued between 2015 and 2019
Notes: HCD uses the following definitions for the four income categories: Very Low Income: units affordable to households making less than 50% of the Area Median Income for the county in which the jurisdiction is located. Low Income: units affordable to households making between 50% and 80% of the Area Median Income for the county in which the jurisdiction is located. Moderate Income: units affordable to households making between 80% and 120% of the Area Median Income for the

[19] See Dow, P. (2018). Unpacking the Growth in San Francisco's Vacant Housing Stock: Client Report for the San Francisco Planning Department. University of California, Berkeley.

county in which the jurisdiction is located. Above Moderate Income: units affordable to households making above 120% of the Area Median Income for the county in which the jurisdiction is located.
Source: California Department of Housing and Community Development (HCD), 5th Cycle Annual Progress Report Permit Summary (2020)
This table is included in the Data Packet Workbook as Table HSG-11.

5.2 Assisted Housing Developments At-Risk of Conversion

While there is an immense need to produce new affordable housing units, ensuring that the existing affordable housing stock remains affordable is equally important. Additionally, it is typically faster and less expensive to preserve currently affordable units that are at risk of converting to market-rate than it is to build new affordable housing.

The data in the table below comes from the California Housing Partnership's Preservation Database, the state's most comprehensive source of information on subsidized affordable housing at risk of losing its affordable status and converting to market-rate housing. However, this database does not include all deed-restricted affordable units in the state, so there may be at-risk assisted units in a jurisdiction that are not captured in this data table. There are 833 assisted units in Redwood City in the Preservation Database. Of these units, 7.0% are at *High Risk* or *Very High Risk* of conversion.[20]

Note on At-Risk Assisted Housing Developments

HCD requires that Housing Elements list the assisted housing developments at risk of converting to market-rate uses. For more information on the specific properties that are at Moderate Risk, High Risk, or Very High Risk of conversion, local jurisdiction staff should contact Danielle Mazzella, Preservation & Data Manager at the California Housing Partnership, at dmazzella@chpc.net.

Table 4: Assisted Units at Risk of Conversion

Income	Redwood City	San Mateo County	Bay Area
Low	682	4656	110177
Moderate	93	191	3375
High	0	359	1854
Very High	58	58	1053
Total Assisted Units in Database	833	5264	116459

Universe: HUD, Low-Income Housing Tax Credit (LIHTC), USDA, and CalHFA projects. Subsidized or assisted developments that do not have one of the aforementioned financing sources may not be included.

[20] California Housing Partnership uses the following categories for assisted housing developments in its database:
Very-High Risk: affordable homes that are at-risk of converting to market rate within the next year that do not have a known overlapping subsidy that would extend affordability and are not owned by a large/stable non-profit, mission-driven developer.
High Risk: affordable homes that are at-risk of converting to market rate in the next 1-5 years that do not have a known overlapping subsidy that would extend affordability and are not owned by a large/stable non-profit, mission-driven developer.
Moderate Risk: affordable homes that are at-risk of converting to market rate in the next 5-10 years that do not have a known overlapping subsidy that would extend affordability and are not owned by a large/stable non-profit, mission-driven developer.
Low Risk: affordable homes that are at-risk of converting to market rate in 10+ years and/or are owned by a large/stable non-profit, mission-driven developer.

Notes: While California Housing Partnership's Preservation Database is the state's most comprehensive source of information on subsidized affordable housing at risk of losing its affordable status and converting to market-rate housing, this database does not include all deed-restricted affordable units in the state. Consequently, there may be at-risk assisted units in a jurisdiction that are not captured in this data table. Per HCD guidance, local jurisdictions must also list the specific affordable housing developments at-risk of converting to market rate uses. This document provides aggregate numbers of at-risk units for each jurisdiction, but local planning staff should contact Danielle Mazzella with the California Housing Partnership at dmazzella@chpc.net to obtain a list of affordable properties that fall under this designation. California Housing Partnership uses the following categories for assisted housing developments in its database: Very-High Risk: affordable homes that are at-risk of converting to market rate within the next year that do not have a known overlapping subsidy that would extend affordability and are not owned by a large/stable non-profit, mission-driven developer. High Risk: affordable homes that are at-risk of converting to market rate in the next 1-5 years that do not have a known overlapping subsidy that would extend affordability and are not owned by a large/stable non-profit, mission-driven developer. Moderate Risk: affordable homes that are at-risk of converting to market rate in the next 5-10 years that do not have a known overlapping subsidy that would extend affordability and are not owned by a large/stable non-profit, mission-driven developer. Low Risk: affordable homes that are at-risk of converting to market rate in 10+ years and/or are owned by a large/stable non-profit, mission-driven developer.
Source: California Housing Partnership, Preservation Database (2020)
This table is included in the Data Packet Workbook as Table RISK-01.

5.3 Substandard Housing

Housing costs in the region are among the highest in the country, which could result in households, particularly renters, needing to live in substandard conditions in order to afford housing. Generally, there is limited data on the extent of substandard housing issues in a community. However, the Census Bureau data included in the graph below gives a sense of some of the substandard conditions that may be present in Redwood City. For example, 1.2% of renters in Redwood City reported lacking a kitchen and 0.6% of renters lack plumbing, compared to 0.3% of owners who lack a kitchen and 0.4% of owners who lack plumbing.

Note on Substandard Housing

HCD requires Housing Elements to estimate the number of units in need of rehabilitation and replacement. As a data source for housing units in need of rehabilitation and replacement is not available for all jurisdictions in the region, ABAG was not able to provide this required data point in this document. To produce an estimate of housing needs in need of rehabilitation and replacement, staff can supplement the data below on substandard housing issues with additional local information from code enforcement, recent windshield surveys of properties, building department data, knowledgeable builders/developers in the community, or nonprofit housing developers or organizations. For more information, visit HCD's Building Blocks page on Housing Stock Characteristics.

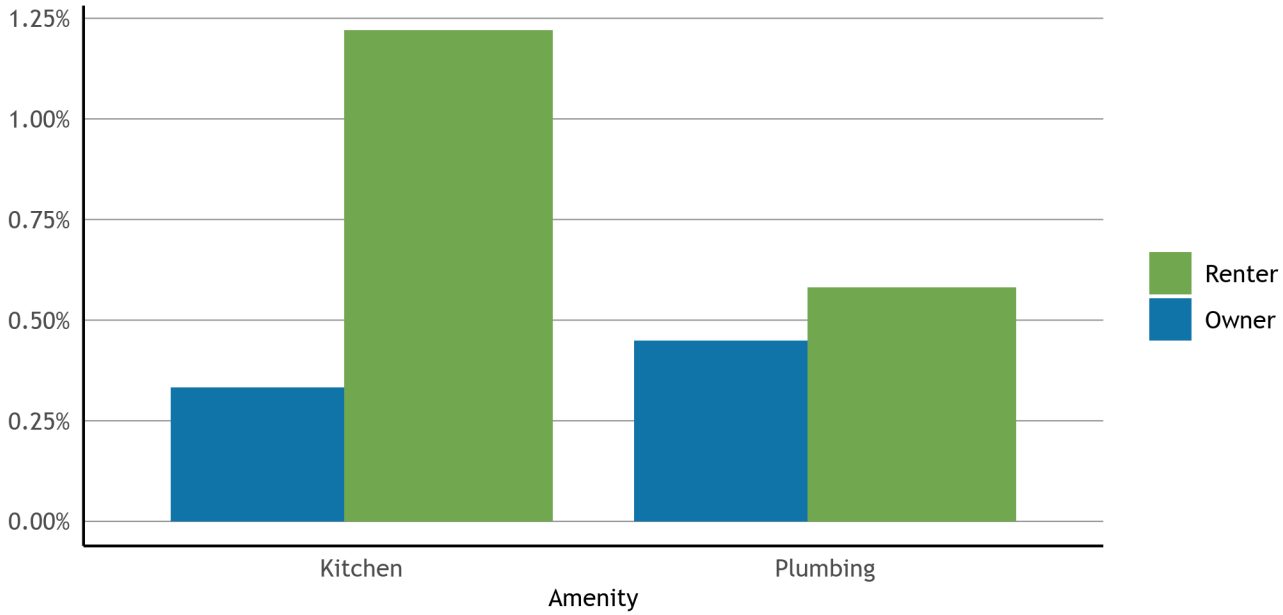


Figure 22: Substandard Housing Issues

Universe: Occupied housing units
Notes: Per HCD guidance, this data should be supplemented by local estimates of units needing to be rehabilitated or replaced based on recent windshield surveys, local building department data, knowledgeable builders/developers in the community, or nonprofit housing developers or organizations.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25053, Table B25043, Table B25049
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-06.

5.4 Home and Rent Values

Home prices reflect a complex mix of supply and demand factors, including an area's demographic profile, labor market, prevailing wages and job outlook, coupled with land and construction costs. In the Bay Area, the costs of housing have long been among the highest in the nation. The typical home value in Redwood City was estimated at $1,616,690 by December of 2020, per data from Zillow. The largest proportion of homes were valued between $1M-$1.5M (see Figure 23). By comparison, the typical home value is $1,418,330 in San Mateo County and $1,077,230 the Bay Area, with the largest share of units valued $1m-$1.5m (county) and $500k-$750k (region).

The region's home values have increased steadily since 2000, besides a decrease during the Great Recession. The rise in home prices has been especially steep since 2012, with the median home value in the Bay Area nearly doubling during this time. Since 2001, the typical home value has increased 168.1% in Redwood City from $603,100 to $1,616,690. This change is above the change in San Mateo County, and above the change for the region (see Figure 24).

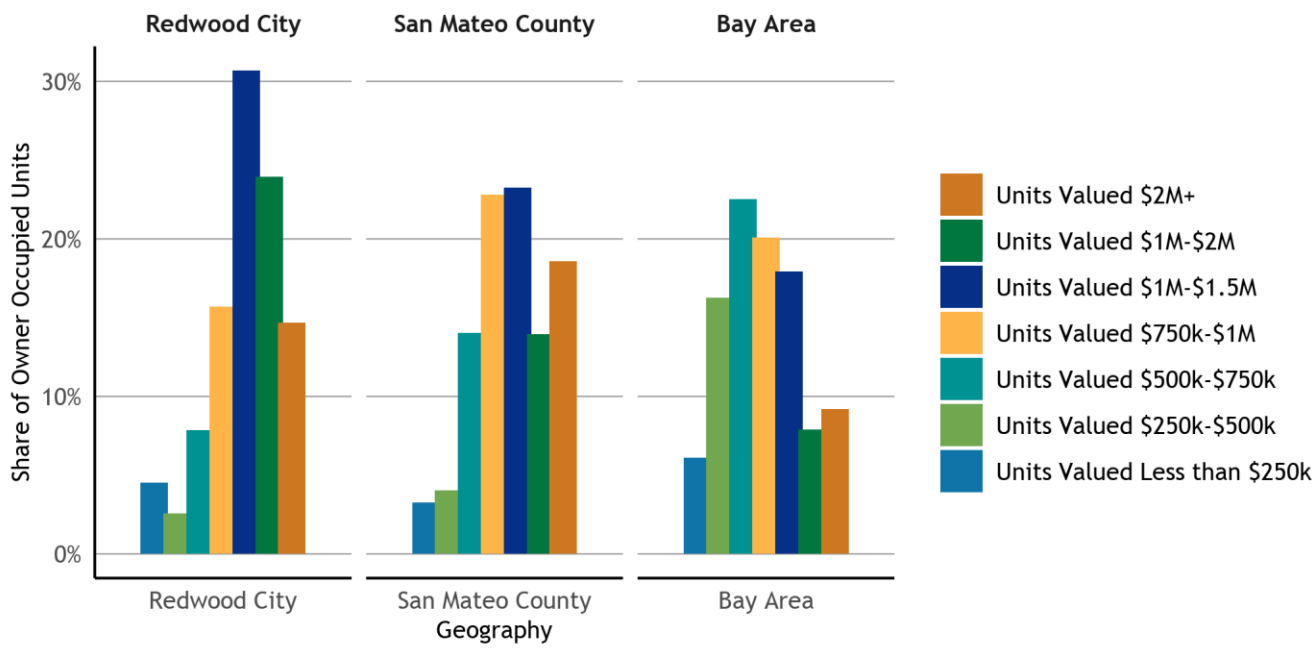


Figure 23: Home Values of Owner-Occupied Units

Universe: Owner-occupied units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25075
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-07.

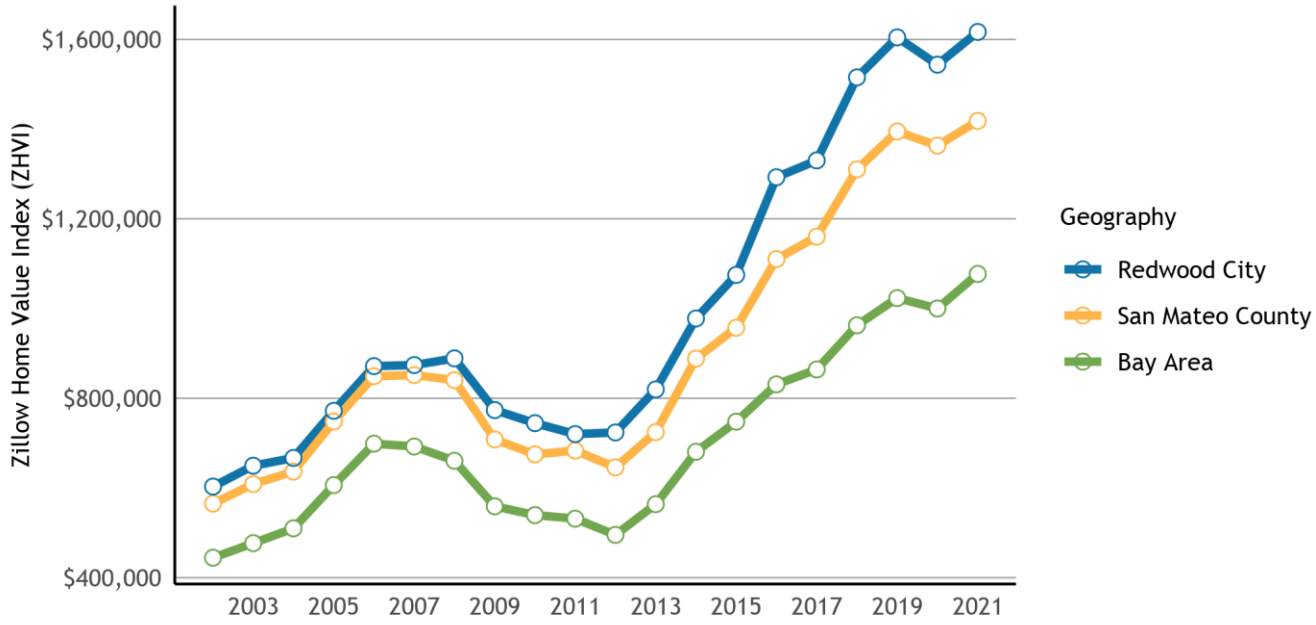


Figure 24: Zillow Home Value Index (ZHVI)

Universe: Owner-occupied housing units
Notes: Zillow describes the ZHVI as a smoothed, seasonally adjusted measure of the typical home value and market changes across a given region and housing type. The ZHVI reflects the typical value for homes in the 35th to 65th percentile range. The

ZHVI includes all owner-occupied housing units, including both single-family homes and condominiums. More information on the ZHVI is available from Zillow. The regional estimate is a household-weighted average of county-level ZHVI files, where household counts are yearly estimates from DOF's E-5 series For unincorporated areas, the value is a population weighted average of unincorporated communities in the county matched to census-designated population counts.
Source: Zillow, Zillow Home Value Index (ZHVI)
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-08.

Similar to home values, rents have also increased dramatically across the Bay Area in recent years. Many renters have been priced out, evicted or displaced, particularly communities of color. Residents finding themselves in one of these situations may have had to choose between commuting long distances to their jobs and schools or moving out of the region, and sometimes, out of the state.

In Redwood City, the largest proportion of rental units rented in the *Rent $3000 or more* category, totaling 26.5%, followed by 21.7% of units renting in the *Rent $1500-$2000* category (see Figure 25). Looking beyond the city, the largest share of units is in the *$3000 or more* category (county) compared to the *$1500-$2000* category for the region as a whole.

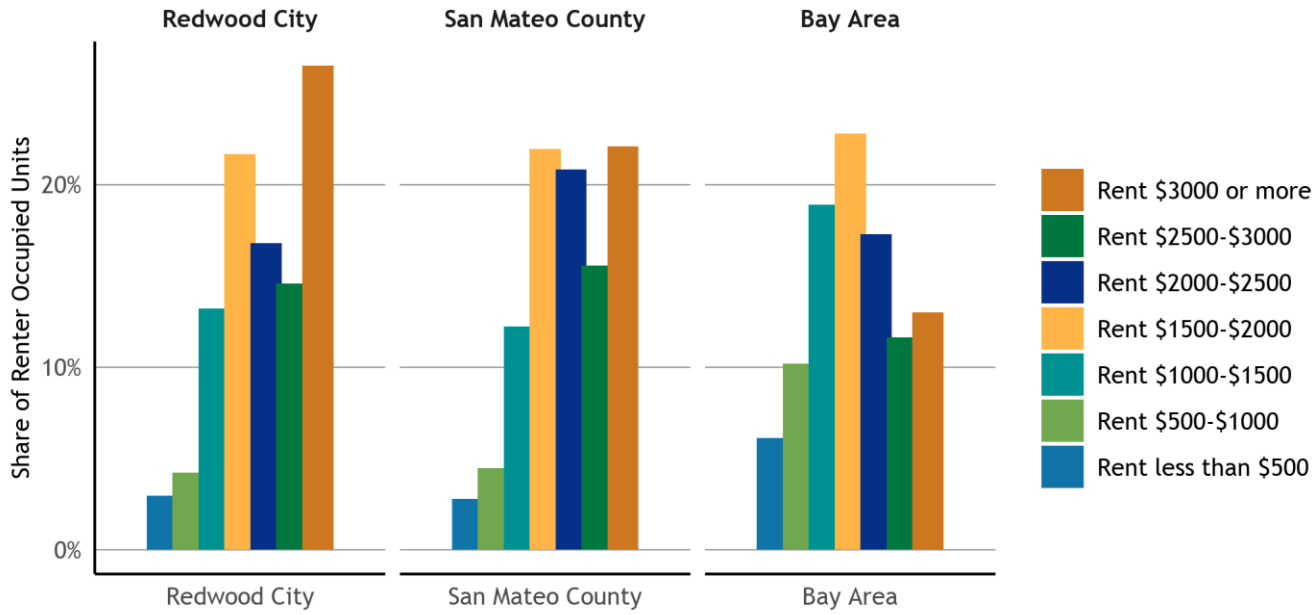


Figure 25: Contract Rents for Renter-Occupied Units

Universe: Renter-occupied housing units paying cash rent
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25056
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-09.

Since 2009, the median rent has increased by 76.8% in Redwood City, from $1,500 to $2,230 per month (see Figure 26). In San Mateo County, the median rent has increased 41.1%, from $1,560 to $2,200. The median rent in the region has increased significantly during this time from $1,200 to $1,850, a 54% increase.[21]

[21] While the data on home values shown in Figure 24 comes from Zillow, Zillow does not have data on rent prices available for most Bay Area jurisdictions. To have a more comprehensive dataset on rental data for the region, the

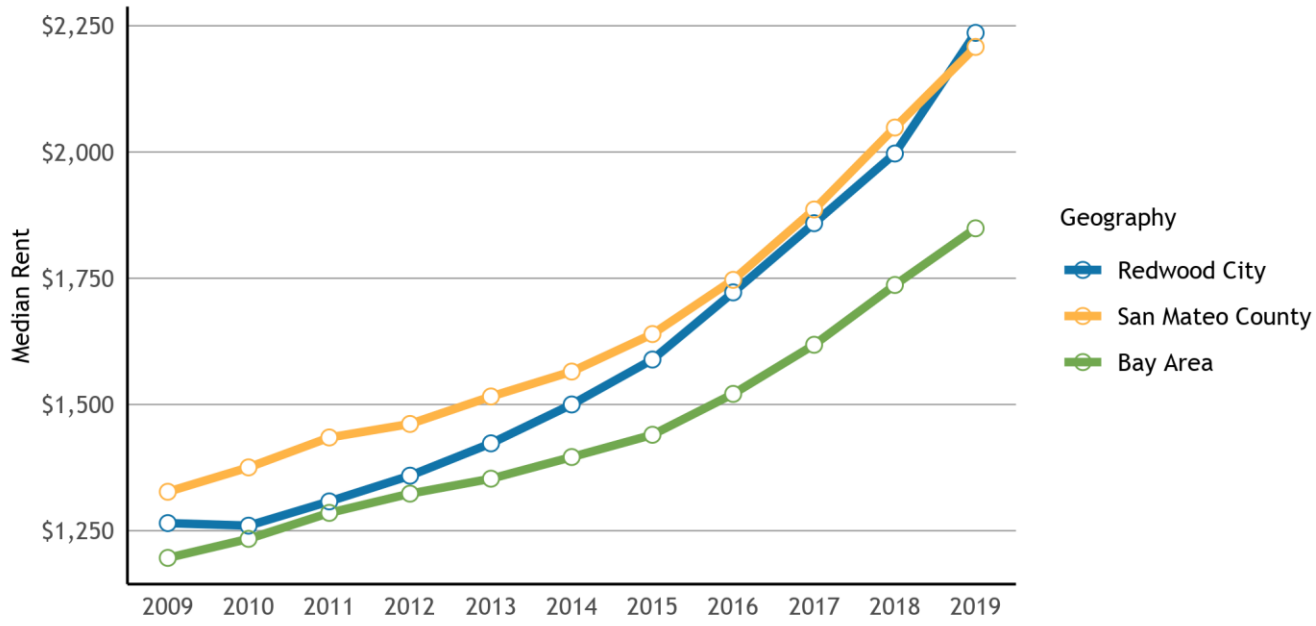


Figure 26: Median Contract Rent

Universe: Renter-occupied housing units paying cash rent
Notes: For unincorporated areas, median is calculated using distribution in B25056.
Source: U.S. Census Bureau, American Community Survey 5-Year Data releases, starting with 2005-2009 through 2015-2019, B25058, B25056 (for unincorporated areas). County and regional counts are weighted averages of jurisdiction median using B25003 rental unit counts from the relevant year.
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-10.

5.5 Overpayment and Overcrowding

A household is considered "cost-burdened" if it spends more than 30% of its monthly income on housing costs, while those who spend more than 50% of their income on housing costs are considered "severely cost-burdened." Low-income residents are the most impacted by high housing costs and experience the highest rates of cost burden. Spending such large portions of their income on housing puts low-income households at higher risk of displacement, eviction, or homelessness.

rent data in this document comes from the U.S. Census Bureau's American Community Survey, which may not fully reflect current rents. Local jurisdiction staff may want to supplement the data on rents with local realtor data or other sources for rent data that are more current than Census Bureau data.

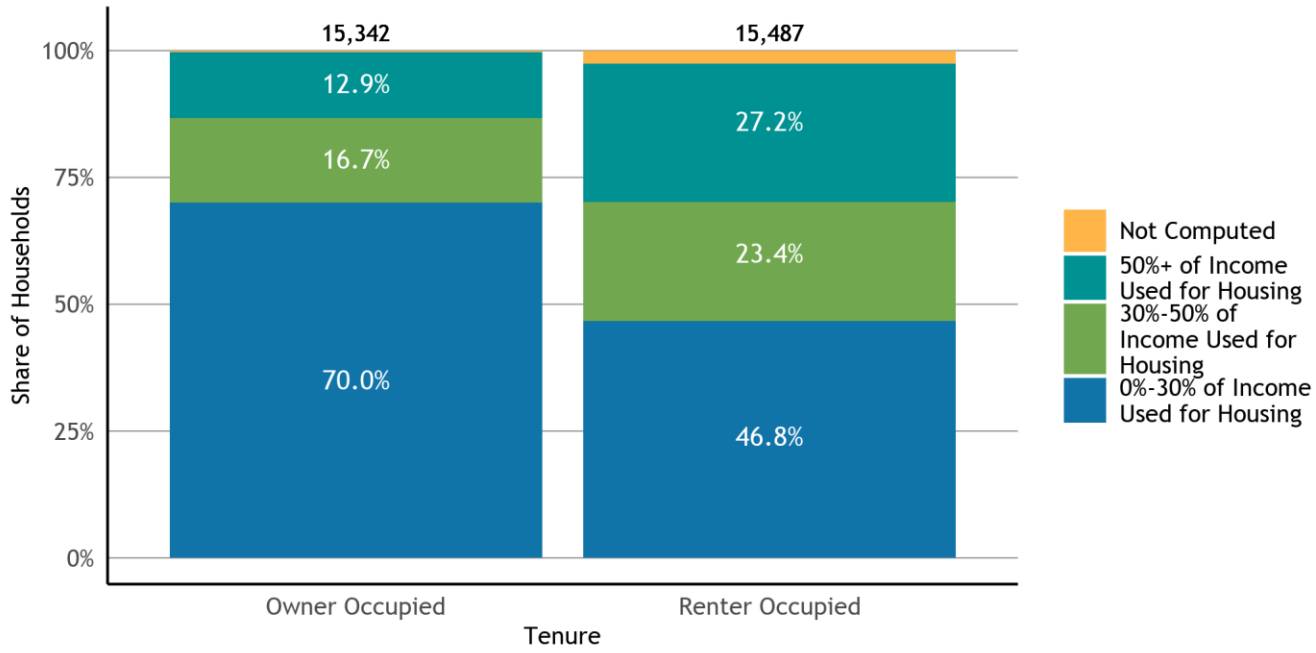


Figure 27: Cost Burden by Tenure

Universe: Occupied housing units
Notes: Cost burden is the ratio of housing costs to household income. For renters, housing cost is gross rent (contract rent plus utilities). For owners, housing cost is "select monthly owner costs", which includes mortgage payment, utilities, association fees, insurance, and real estate taxes. HUD defines cost-burdened households as those whose monthly housing costs exceed 30% of monthly income, while severely cost-burdened households are those whose monthly housing costs exceed 50% of monthly income.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25070, B25091
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-06.

Renters are often more cost-burdened than owners. While the housing market has resulted in home prices increasing dramatically, homeowners often have mortgages with fixed rates, whereas renters are more likely to be impacted by market increases. When looking at the cost burden across tenure in Redwood City, 23.4% of renters spend 30% to 50% of their income on housing compared to 16.7% of those that own (see Figure 27). Additionally, 27.2% of renters spend 50% or more of their income on housing, while 12.9% of owners are severely cost-burdened.

In Redwood City, 20.0% of households spend 50% or more of their income on housing, while 20.9% spend 30% to 50%. However, these rates vary greatly across income categories (see Figure 28). For example, 75.1% of Redwood City households making less than 30% of AMI spend the majority of their income on housing. For Redwood City residents making more than 100% of AMI, just 1.4% are severely cost-burdened, and 86.8% of those making more than 100% of AMI spend less than 30% of their income on housing.

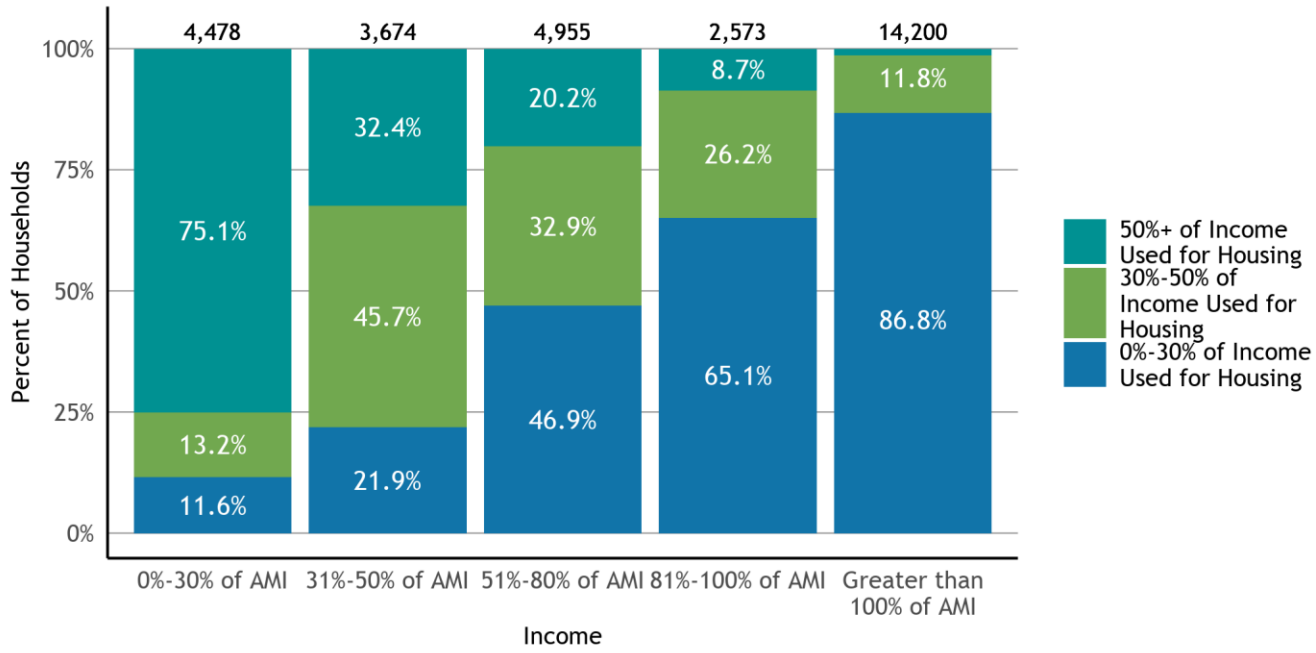


Figure 28: Cost Burden by Income Level

Universe: Occupied housing units
Notes: Cost burden is the ratio of housing costs to household income. For renters, housing cost is gross rent (contract rent plus utilities). For owners, housing cost is "select monthly owner costs", which includes mortgage payment, utilities, association fees, insurance, and real estate taxes. HUD defines cost-burdened households as those whose monthly housing costs exceed 30% of monthly income, while severely cost-burdened households are those whose monthly housing costs exceed 50% of monthly income. Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-05.

Currently, people of color are more likely to experience poverty and financial instability as a result of federal and local housing policies that have historically excluded them from the same opportunities extended to white residents. As a result, they often pay a greater percentage of their income on housing, and in turn, are at a greater risk of housing insecurity.

Hispanic or Latinx residents are the most cost burdened with *29.3%* spending 30% to 50% of their income on housing, and *Hispanic or Latinx* residents are the most severely cost burdened with *30.8%* spending more than 50% of their income on housing (see Figure 29).

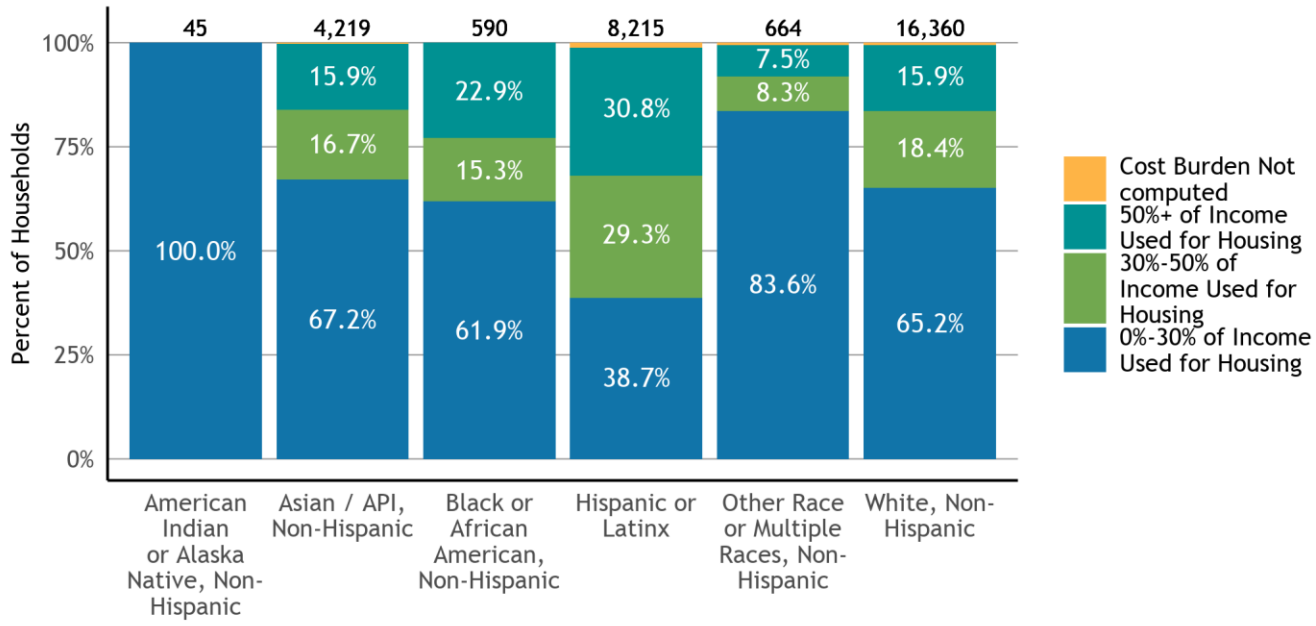


Figure 29: Cost Burden by Race

Universe: Occupied housing units
Notes: Cost burden is the ratio of housing costs to household income. For renters, housing cost is gross rent (contract rent plus utilities). For owners, housing cost is "select monthly owner costs", which includes mortgage payment, utilities, association fees, insurance, and real estate taxes. HUD defines cost-burdened households as those whose monthly housing costs exceed 30% of monthly income, while severely cost-burdened households are those whose monthly housing costs exceed 50% of monthly income. For the purposes of this graph, the "Hispanic or Latinx" racial/ethnic group represents those who identify as having Hispanic/Latinx ethnicity and may also be members of any racial group. All other racial categories on this graph represent those who identify with that racial category and do not identify with Hispanic/Latinx ethnicity.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-08.

Large family households often have special housing needs due to a lack of adequately sized affordable housing available. The higher costs required for homes with multiple bedrooms can result in larger families experiencing a disproportionate cost burden than the rest of the population and can increase the risk of housing insecurity.

In Redwood City, 28.8% of large family households experience a cost burden of 30%-50%, while 22.3% of households spend more than half of their income on housing. Some 20.2% of all other households have a cost burden of 30%-50%, with 19.8% of households spending more than 50% of their income on housing (see Figure 30).

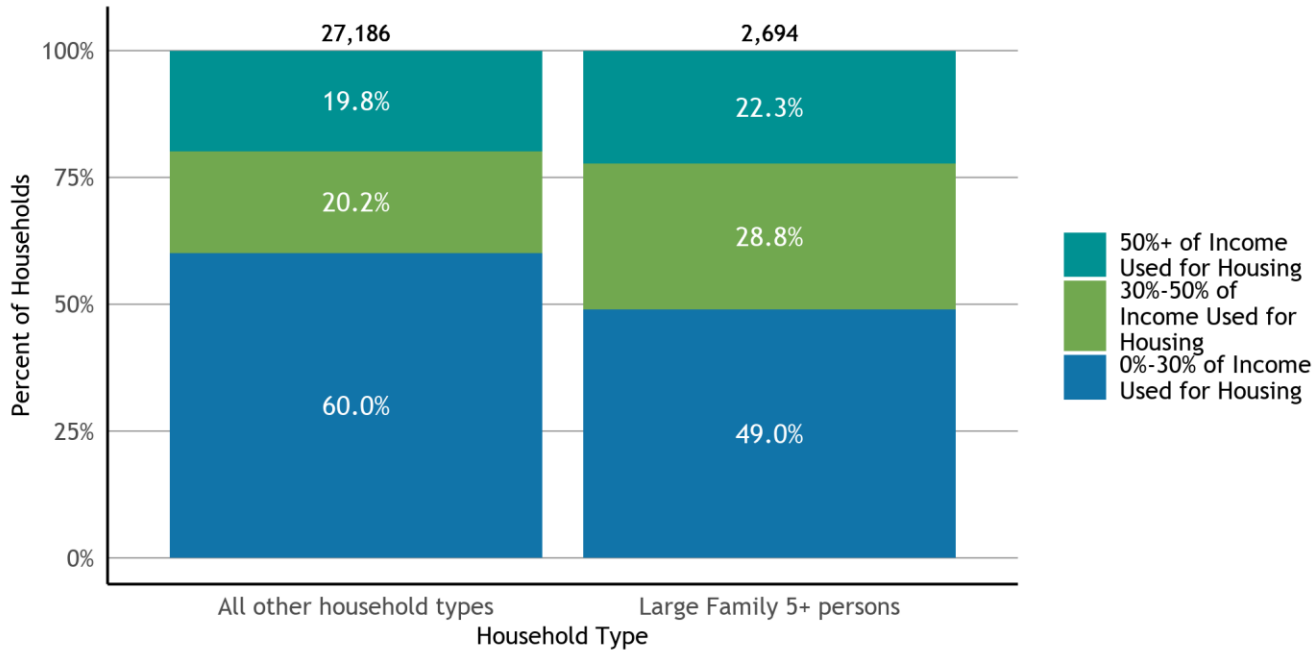


Figure 30: Cost Burden by Household Size

Universe: Occupied housing units
Notes: Cost burden is the ratio of housing costs to household income. For renters, housing cost is gross rent (contract rent plus utilities). For owners, housing cost is "select monthly owner costs", which includes mortgage payment, utilities, association fees, insurance, and real estate taxes. HUD defines cost-burdened households as those whose monthly housing costs exceed 30% of monthly income, while severely cost-burdened households are those whose monthly housing costs exceed 50% of monthly income.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-09.

When cost-burdened seniors are no longer able to make house payments or pay rents, displacement from their homes can occur, putting further stress on the local rental market or forcing residents out of the community they call home. Understanding how seniors might be cost-burdened is of particular importance due to their special housing needs, particularly for low-income seniors. 61.0% of seniors making less than 30% of AMI are spending the majority of their income on housing. For seniors making more than 100% of AMI, 89.8% are not cost-burdened and spend less than 30% of their income on housing (see Figure 31).

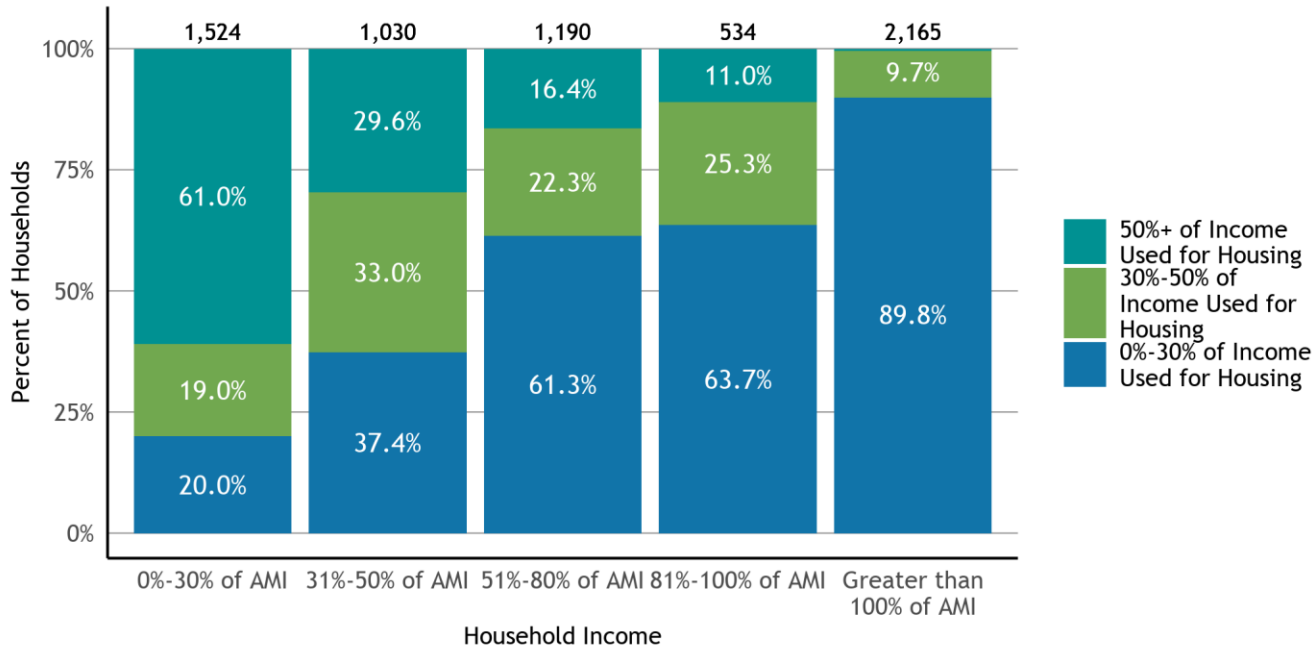


Figure 31: Cost-Burdened Senior Households by Income Level

Universe: Senior households
Notes: For the purposes of this graph, senior households are those with a householder who is aged 62 or older. Cost burden is the ratio of housing costs to household income. For renters, housing cost is gross rent (contract rent plus utilities). For owners, housing cost is "select monthly owner costs", which includes mortgage payment, utilities, association fees, insurance, and real estate taxes. HUD defines cost-burdened households as those whose monthly housing costs exceed 30% of monthly income, while severely cost-burdened households are those whose monthly housing costs exceed 50% of monthly income. Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table SEN-03.

Overcrowding occurs when the number of people living in a household is greater than the home was designed to hold. There are several different standards for defining overcrowding, but this report uses the Census Bureau definition, which is more than one occupant per room (not including bathrooms or kitchens). Additionally, the Census Bureau considers units with more than 1.5 occupants per room to be severely overcrowded.

Overcrowding is often related to the cost of housing and can occur when demand in a city or region is high. In many cities, overcrowding is seen more amongst those that are renting, with multiple households sharing a unit to make it possible to stay in their communities. In Redwood City, 7.9% of households that rent are severely overcrowded (more than 1.5 occupants per room), compared to 1.2% of households that own (see Figure 32). In Redwood City, 7.6% of renters experience moderate overcrowding (1 to 1.5 occupants per room), compared to 1.1% for those own.



Figure 32: Overcrowding by Tenure and Severity

Universe: Occupied housing units
Notes: The Census Bureau defines an overcrowded unit as one occupied by 1.01 persons or more per room (excluding bathrooms and kitchens), and units with more than 1.5 persons per room are considered severely overcrowded.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-01.

Overcrowding often disproportionately impacts low-income households. 9.8% of very low-income households (below 50% AMI) experience severe overcrowding, while 0.7% of households above 100% experience this level of overcrowding (see Figure 33).

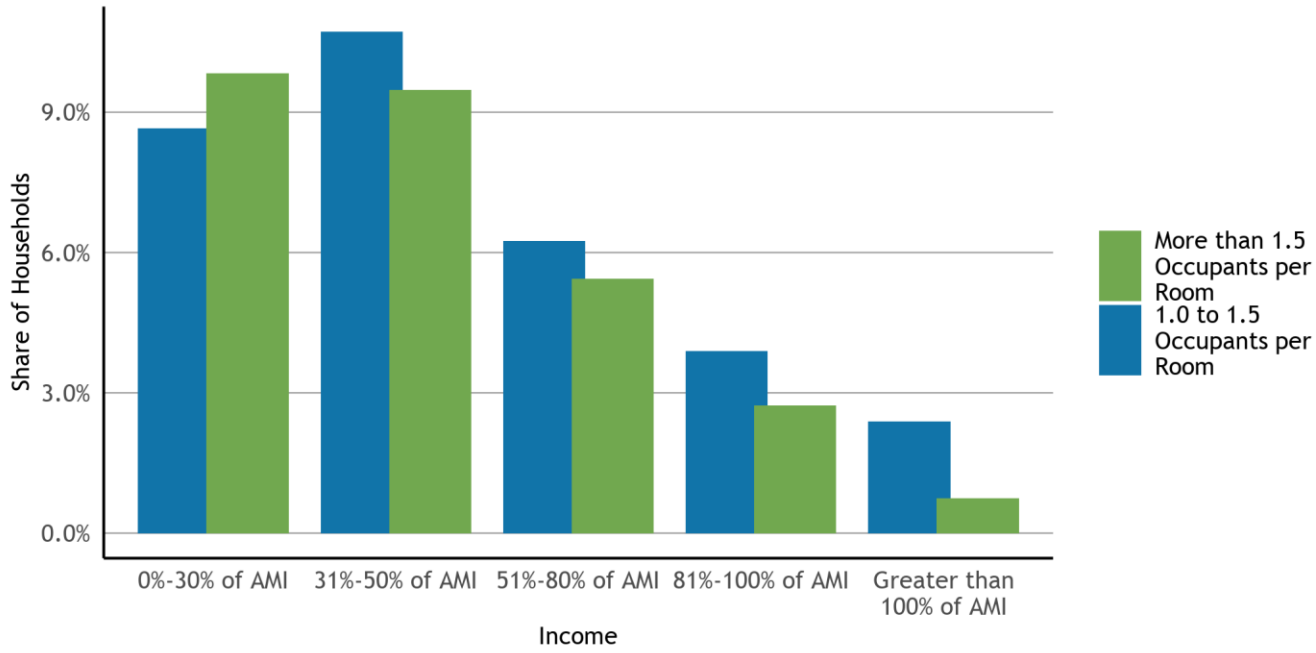


Figure 33: Overcrowding by Income Level and Severity

Universe: Occupied housing units
Notes: The Census Bureau defines an overcrowded unit as one occupied by 1.01 persons or more per room (excluding bathrooms and kitchens), and units with more than 1.5 persons per room are considered severely overcrowded. Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-04.

Communities of color are more likely to experience overcrowding similar to how they are more likely to experience poverty, financial instability, and housing insecurity. People of color tend to experience overcrowding at higher rates than White residents. In Redwood City, the racial group with the largest overcrowding rate is *Other Race or Multiple Races (Hispanic and Non-Hispanic)* (see Figure 34)

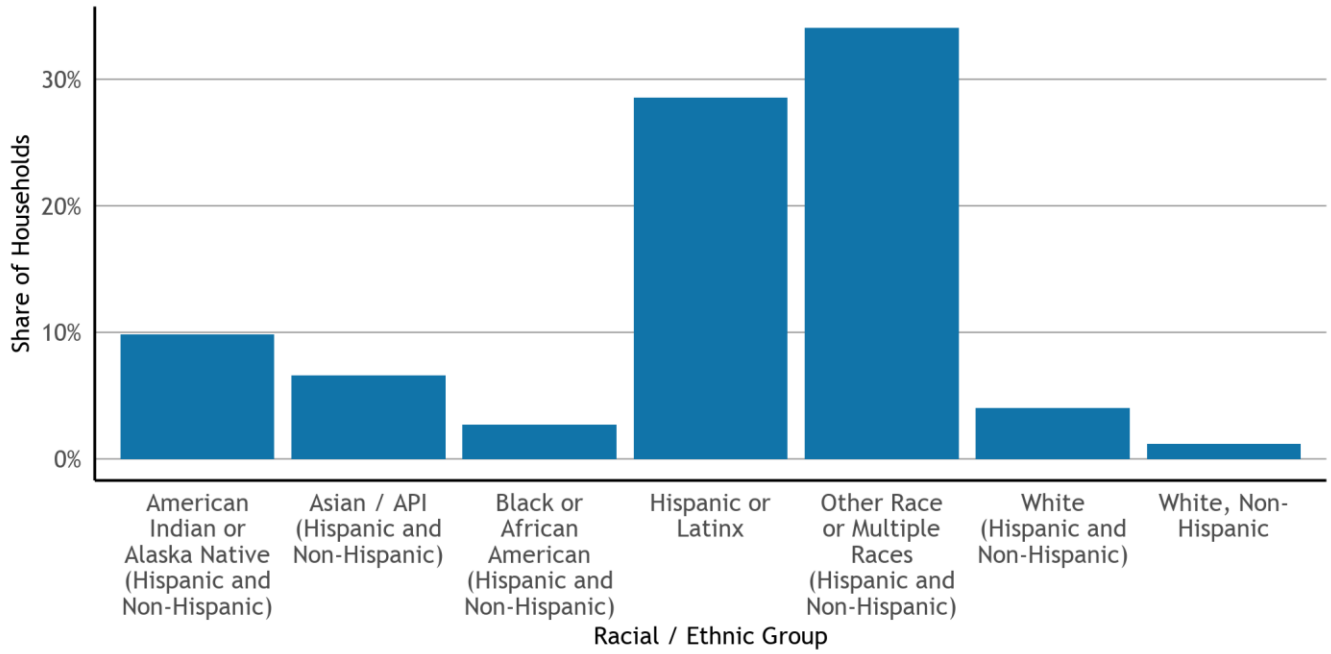


Figure 34: Overcrowding by Race

Universe: Occupied housing units
Notes: The Census Bureau defines an overcrowded unit as one occupied by 1.01 persons or more per room (excluding bathrooms and kitchens), and units with more than 1.5 persons per room are considered severely overcrowded. For this table, the Census Bureau does not disaggregate racial groups by Hispanic/Latinx ethnicity. However, data for the white racial group is also reported for white householders who are not Hispanic/Latinx. Since residents who identify as white and Hispanic/Latinx may have very different experiences within the housing market and the economy from those who identify as white and non-Hispanic/Latinx, data for multiple white sub-groups are reported here. The racial/ethnic groups reported in this table are not all mutually exclusive. Therefore, the data should not be summed as the sum exceeds the total number of occupied housing units for this jurisdiction. However, all groups labelled "Hispanic and Non-Hispanic" are mutually exclusive, and the sum of the data for these groups is equivalent to the total number of occupied housing units.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25014
For the data table behind this figure, please refer to the Data Packet Workbook, Table OVER-03.

6 SPECIAL HOUSING NEEDS

6.1 Large Households

Large households often have different housing needs than smaller households. If a city's rental housing stock does not include larger apartments, large households who rent could end up living in overcrowded conditions. In Redwood City, for large households with 5 or more persons, most units (61.1%) are renter occupied (see Figure 35). In 2017, 44.1% of large households were very low-income, earning less than 50% of the area median income (AMI).

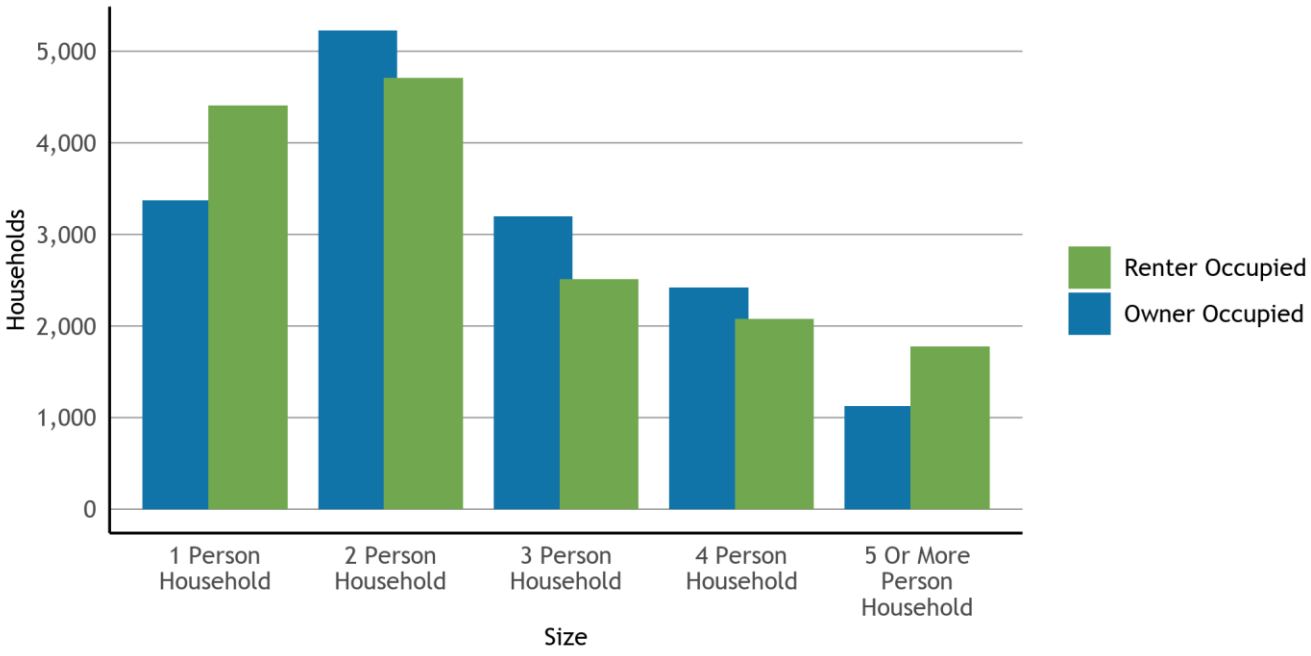


Figure 35: Household Size by Tenure

Universe: Occupied housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25009
For the data table behind this figure, please refer to the Data Packet Workbook, Table LGFEM-01.

The unit sizes available in a community affect the household sizes that can access that community. Large families are generally served by housing units with 3 or more bedrooms, of which there are 14,127 units in Redwood City. Among these large units with 3 or more bedrooms, 19.7% are owner-occupied and 80.3% are renter occupied (see Figure 36).

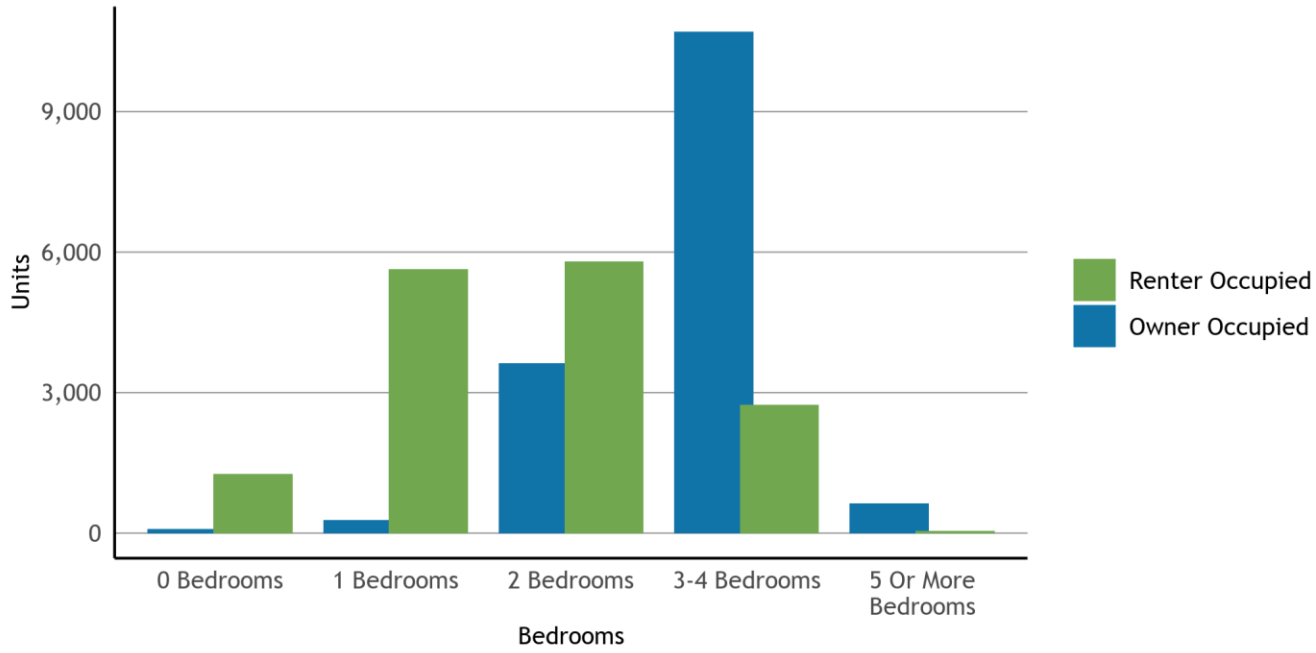


Figure 36: Housing Units by Number of Bedrooms

Universe: Housing units
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B25042
For the data table behind this figure, please refer to the Data Packet Workbook, Table HSG-05.

6.2 Female-Headed Households

Households headed by one person are often at greater risk of housing insecurity, particularly female-headed households, who may be supporting children or a family with only one income. In Redwood City, the largest proportion of households is *Married-couple Family Households* at 50.7% of total, while *Female-Headed Households* make up 9.6% of all households.

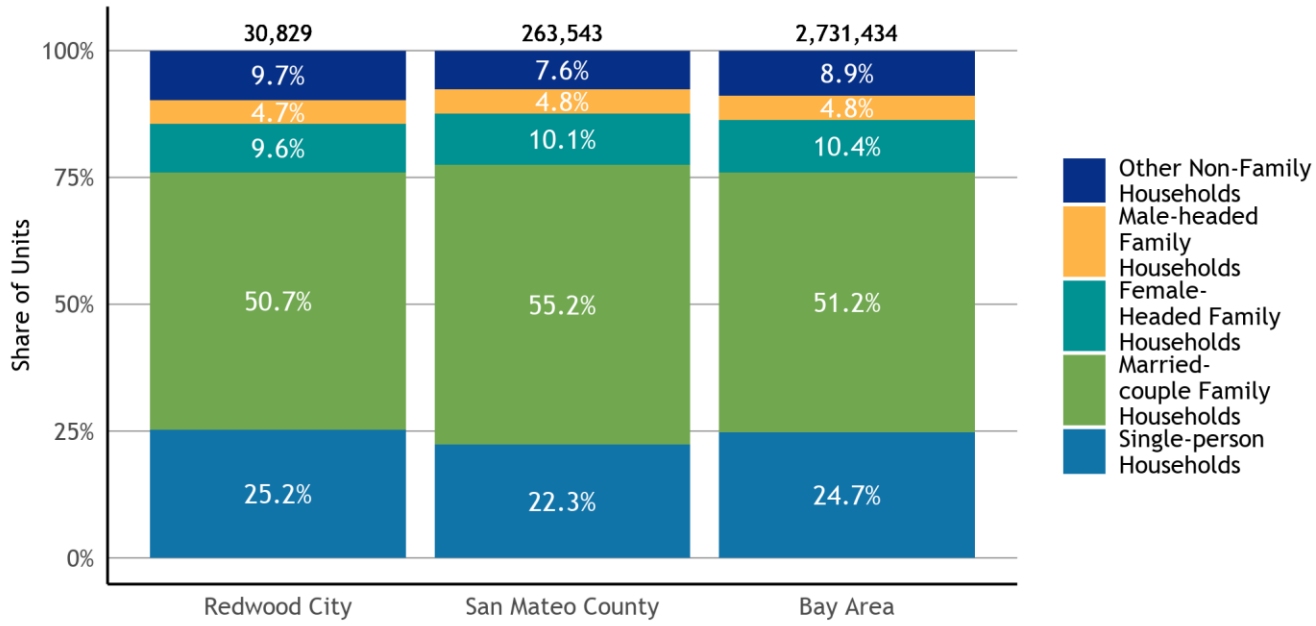


Figure 37: Household Type

Universe: Households
Notes: For data from the Census Bureau, a "family household" is a household where two or more people are related by birth, marriage, or adoption. "Non-family households" are households of one person living alone, as well as households where none of the people are related to each other.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B11001
For the data table behind this figure, please refer to the Data Packet Workbook, Table POPEMP-23.

Female-headed households with children may face particular housing challenges, with pervasive gender inequality resulting in lower wages for women. Moreover, the added need for childcare can make finding a home that is affordable more challenging.

In Redwood City, 22.7% of female-headed households with children fall below the Federal Poverty Line, while 11.3% of female-headed households *without* children live in poverty (see Figure 38).

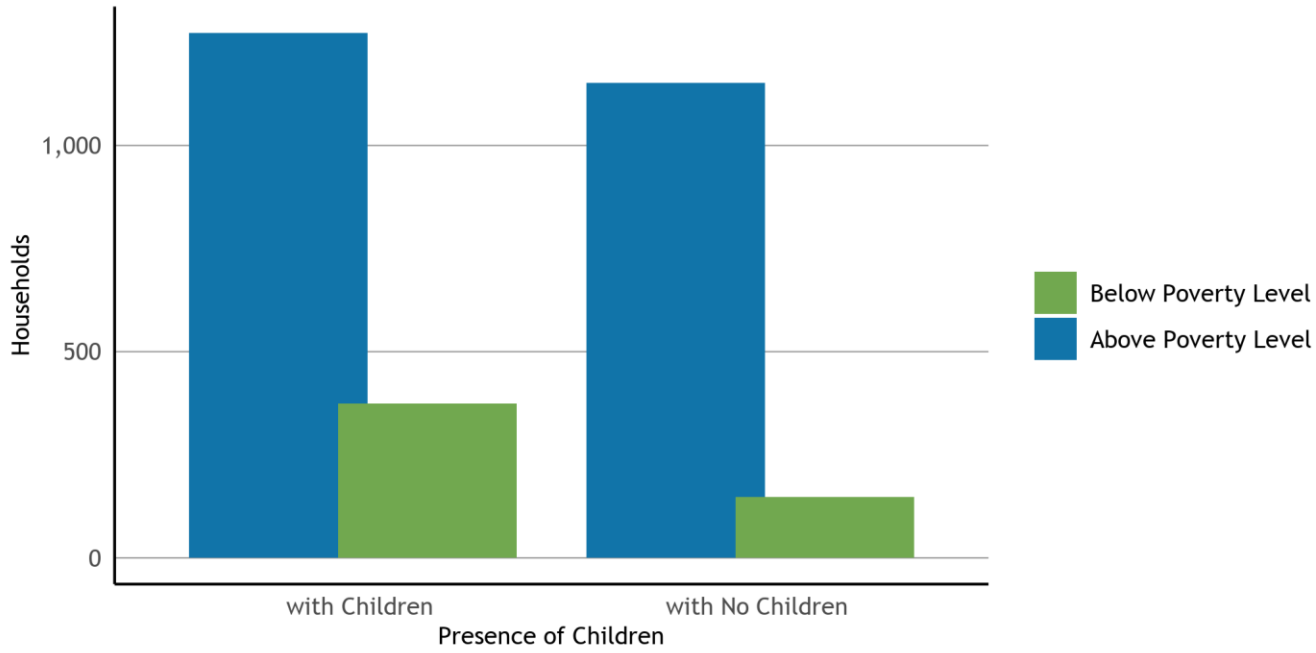


Figure 38: Female-Headed Households by Poverty Status

Universe: Female Households
Notes: The Census Bureau uses a federally defined poverty threshold that remains constant throughout the country and does not correspond to Area Median Income.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B17012
For the data table behind this figure, please refer to the Data Packet Workbook, Table LGFEM-05.

6.3 Seniors

Senior households often experience a combination of factors that can make accessing or keeping affordable housing a challenge. They often live on fixed incomes and are more likely to have disabilities, chronic health conditions and/or reduced mobility.

Seniors who rent may be at even greater risk for housing challenges than those who own, due to income differences between these groups. The largest proportion of senior households who rent make *0%-30% of AMI*, while the largest proportion of senior households who are homeowners falls in the income group *Greater than 100% of AMI* (see Figure 39).

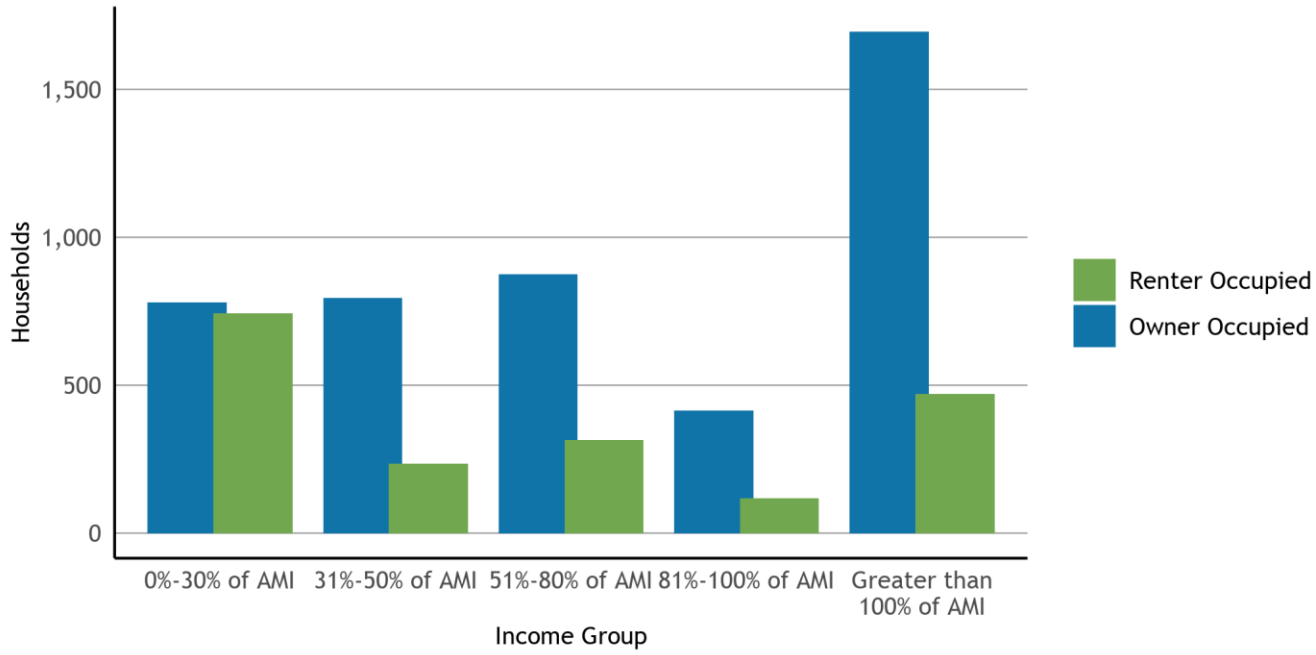


Figure 39: Senior Households by Income and Tenure

Universe: Senior households
Notes: For the purposes of this graph, senior households are those with a householder who is aged 62 or older. Income groups are based on HUD calculations for Area Median Income (AMI). HUD calculates the AMI for different metropolitan areas, and the nine county Bay Area includes the following metropolitan areas: Napa Metro Area (Napa County), Oakland-Fremont Metro Area (Alameda and Contra Costa Counties), San Francisco Metro Area (Marin, San Francisco, and San Mateo Counties), San Jose-Sunnyvale-Santa Clara Metro Area (Santa Clara County), Santa Rosa Metro Area (Sonoma County), and Vallejo-Fairfield Metro Area (Solano County). The AMI levels in this chart are based on the HUD metro area where this jurisdiction is located.
Source: U.S. Department of Housing and Urban Development (HUD), Comprehensive Housing Affordability Strategy (CHAS) ACS tabulation, 2013-2017 release
For the data table behind this figure, please refer to the Data Packet Workbook, Table SEN-01.

6.4 People with Disabilities

People with disabilities face additional housing challenges. Encompassing a broad group of individuals living with a variety of physical, cognitive and sensory impairments, many people with disabilities live on fixed incomes and are in need of specialized care, yet often rely on family members for assistance due to the high cost of care.

When it comes to housing, people with disabilities are not only in need of affordable housing but accessibly designed housing, which offers greater mobility and opportunity for independence. Unfortunately, the need typically outweighs what is available, particularly in a housing market with such high demand. People with disabilities are at a high risk for housing insecurity, homelessness and institutionalization, particularly when they lose aging caregivers. Figure 40 shows the rates at which different disabilities are present among residents of Redwood City. Overall, 7.2% of people in Redwood City have a disability of any kind.[22]

[22] These disabilities are counted separately and are not mutually exclusive, as an individual may report more than one disability. These counts should not be summed.

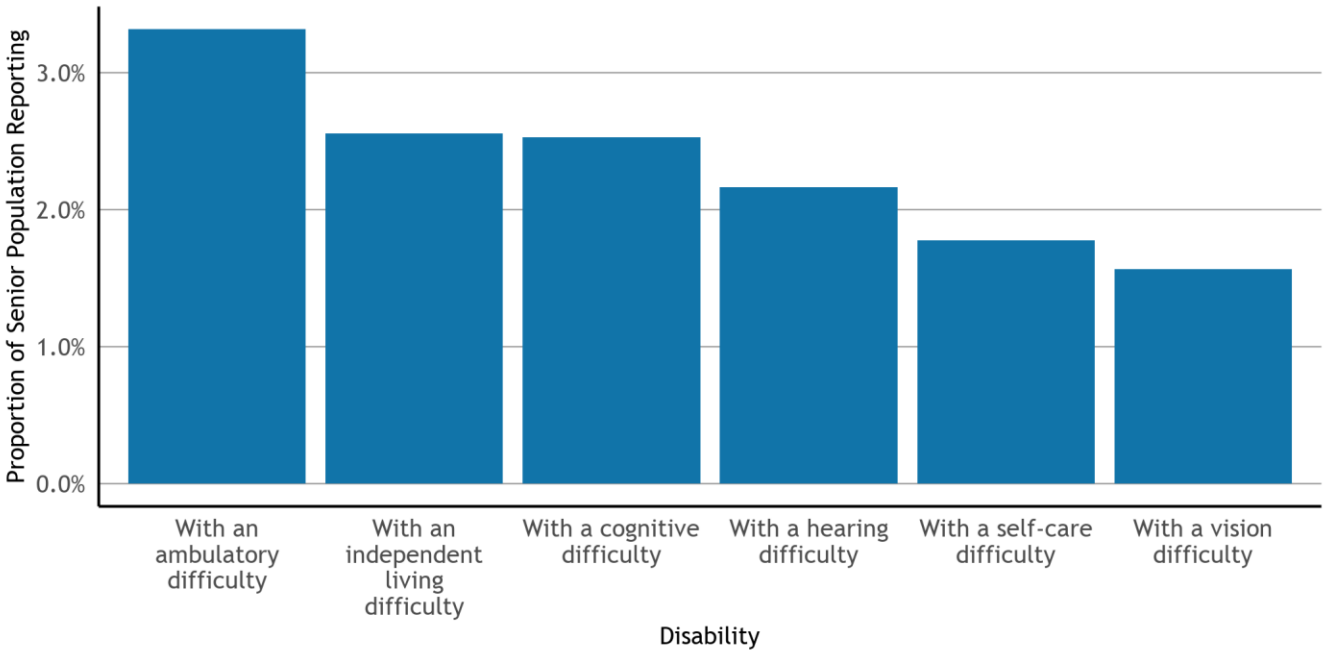


Figure 40: Disability by Type

Universe: Civilian noninstitutionalized population 18 years and over
Notes: These disabilities are counted separately and are not mutually exclusive, as an individual may report more than one disability. These counts should not be summed. The Census Bureau provides the following definitions for these disability types: Hearing difficulty: deaf or has serious difficulty hearing. Vision difficulty: blind or has serious difficulty seeing even with glasses. Cognitive difficulty: has serious difficulty concentrating, remembering, or making decisions. Ambulatory difficulty: has serious difficulty walking or climbing stairs. Self-care difficulty: has difficulty dressing or bathing. Independent living difficulty: has difficulty doing errands alone such as visiting a doctor's office or shopping.
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B18102, Table B18103, Table B18104, Table B18105, Table B18106, Table B18107.
For the data table behind this figure, please refer to the Data Packet Workbook, Table DISAB-01.

State law also requires Housing Elements to examine the housing needs of people with developmental disabilities. Developmental disabilities are defined as severe, chronic, and attributed to a mental or physical impairment that begins before a person turns 18 years old. This can include Down's Syndrome, autism, epilepsy, cerebral palsy, and mild to severe mental retardation. Some people with developmental disabilities are unable to work, rely on Supplemental Security Income, and live with family members. In addition to their specific housing needs, they are at increased risk of housing insecurity after an aging parent or family member is no longer able to care for them.[23]

In Redwood City, of the population with a developmental disability, children under the age of 18 make up 38.7%, while adults account for 61.3%.

[23] For more information or data on developmental disabilities in your jurisdiction, contact the Golden Gate Regional Center for Marin, San Francisco and San Mateo Counties; the North Bay Regional Center for Napa, Solano and Sonoma Counties; the Regional Center for the East Bay for Alameda and Contra Costa Counties; or the San Andreas Regional Center for Santa Clara County.

Table 5: Population with Developmental Disabilities by Age

Age Group	value
Age 18+	302
Age Under 18	191

Universe: Population with developmental disabilities
Notes: The California Department of Developmental Services is responsible for overseeing the coordination and delivery of services to more than 330,000 Californians with developmental disabilities including cerebral palsy, intellectual disability, Down syndrome, autism, epilepsy, and related conditions. The California Department of Developmental Services provides ZIP code level counts. To get jurisdiction-level estimates, ZIP code counts were crosswalked to jurisdictions using census block population counts from Census 2010 SF1 to determine the share of a ZIP code to assign to a given jurisdiction.
Source: California Department of Developmental Services, Consumer Count by California ZIP Code and Age Group (2020)
This table is included in the Data Packet Workbook as Table DISAB-04.

The most common living arrangement for individuals with disabilities in Redwood City is the home of parent /family /guardian.

Table 6: Population with Developmental Disabilities by Residence

Residence Type	value
Home of Parent /Family /Guardian	326
Community Care Facility	100
Independent /Supported Living	64
Foster /Family Home	8
Other	6
Intermediate Care Facility	5

Universe: Population with developmental disabilities
Notes: The California Department of Developmental Services is responsible for overseeing the coordination and delivery of services to more than 330,000 Californians with developmental disabilities including cerebral palsy, intellectual disability, Down syndrome, autism, epilepsy, and related conditions. The California Department of Developmental Services provides ZIP code level counts. To get jurisdiction-level estimates, ZIP code counts were crosswalked to jurisdictions using census block population counts from Census 2010 SF1 to determine the share of a ZIP code to assign to a given jurisdiction.
Source: California Department of Developmental Services, Consumer Count by California ZIP Code and Residence Type (2020)
This table is included in the Data Packet Workbook as Table DISAB-05.

6.5 Homelessness

Homelessness remains an urgent challenge in many communities across the state, reflecting a range of social, economic, and psychological factors. Rising housing costs result in increased risks of community members experiencing homelessness. Far too many residents who have found themselves housing insecure have ended up unhoused or homeless in recent years, either temporarily or longer term. Addressing the specific housing needs for the unhoused population remains a priority throughout the region, particularly since homelessness is disproportionately experienced by people of color, people with disabilities, those struggling with addiction and those dealing with traumatic life circumstances. In San Mateo County, the most common type of household experiencing homelessness is those without children in their care. Among households experiencing homelessness that do not have children, 75.5% are unsheltered. Of homeless households with children, most are sheltered in transitional housing (see Figure 41).

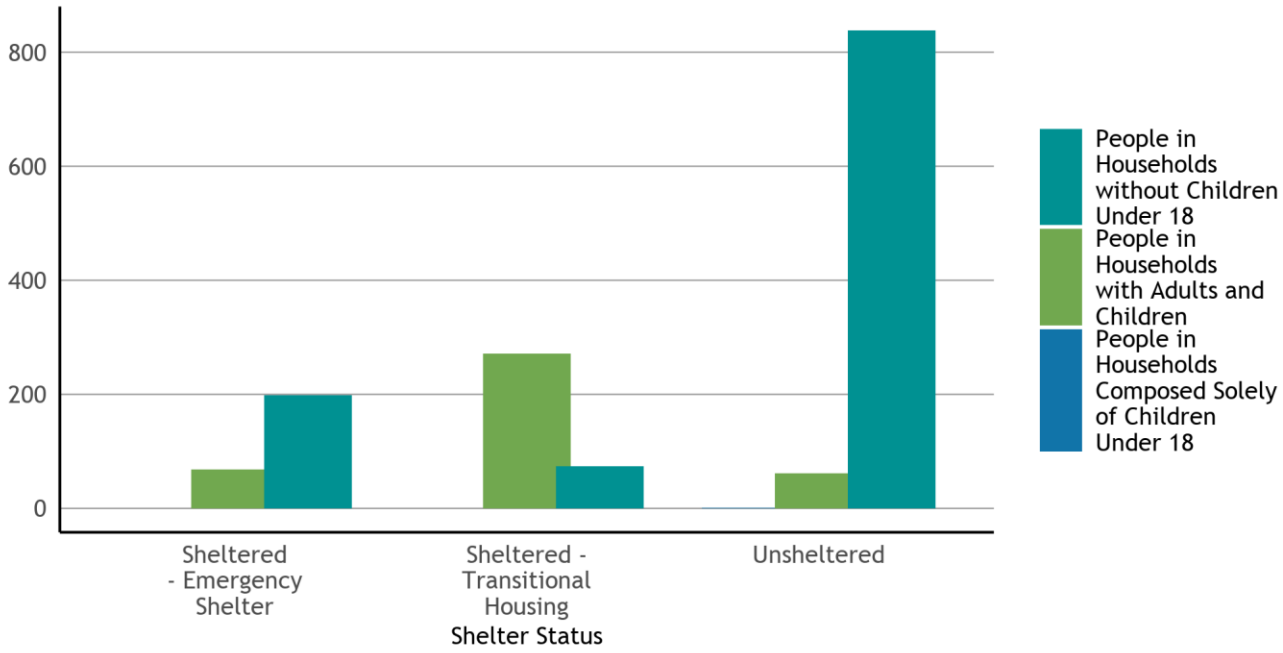


Figure 41: Homelessness by Household Type and Shelter Status, San Mateo County

Universe: Population experiencing homelessness
Notes: This data is based on Point-in-Time (PIT) information provided to HUD by CoCs in the application for CoC Homeless Assistance Programs. The PIT Count provides a count of sheltered and unsheltered homeless persons on a single night during the last ten days in January. Each Bay Area county is its own CoC, and so the data for this table is provided at the county-level. Per HCD's requirements, jurisdictions will need to supplement this county-level data with local estimates of people experiencing homelessness.
Source: U.S. Department of Housing and Urban Development (HUD), Continuum of Care (CoC) Homeless Populations and Subpopulations Reports (2019)
For the data table behind this figure, please refer to the Data Packet Workbook, Table HOMELS-01.

People of color are more likely to experience poverty and financial instability as a result of federal and local housing policies that have historically excluded them from the same opportunities extended to white residents. Consequently, people of color are often disproportionately impacted by homelessness, particularly Black residents of the Bay Area. In San Mateo County, White (Hispanic and Non-Hispanic) residents represent the largest proportion of residents experiencing homelessness and account for 66.6% of the homeless population, while making up 50.6% of the overall population (see Figure 42).

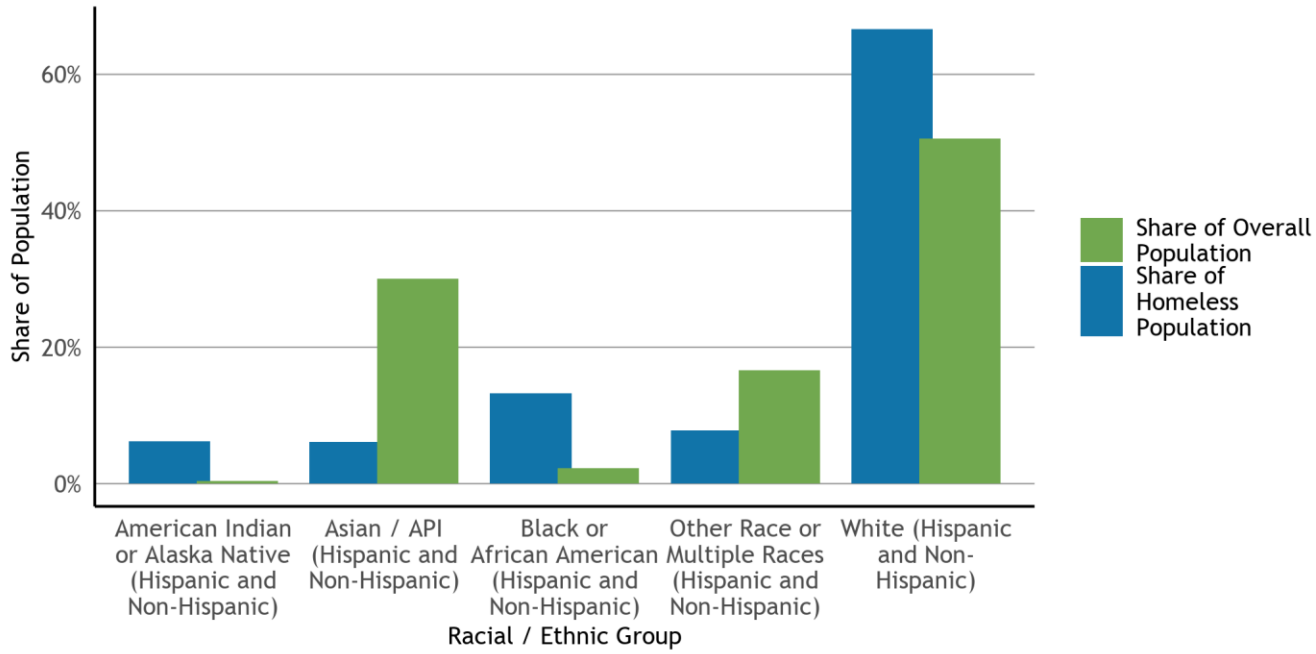


Figure 42: Racial Group Share of General and Homeless Populations, San Mateo County

Universe: Population experiencing homelessness
Notes: This data is based on Point-in-Time (PIT) information provided to HUD by CoCs in the application for CoC Homeless Assistance Programs. The PIT Count provides a count of sheltered and unsheltered homeless persons on a single night during the last ten days in January. Each Bay Area county is its own CoC, and so the data for this table is provided at the county-level. Per HCD's requirements, jurisdictions will need to supplement this county-level data with local estimates of people experiencing homelessness. HUD does not disaggregate racial demographic data by Hispanic/Latinx ethnicity for people experiencing homelessness. Instead, HUD reports data on Hispanic/Latinx ethnicity for people experiencing homelessness in a separate table. Accordingly, the racial group data listed here includes both Hispanic/Latinx and non-Hispanic/Latinx individuals.
Source: U.S. Department of Housing and Urban Development (HUD), Continuum of Care (CoC) Homeless Populations and Subpopulations Reports (2019); U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B01001(A-I)
For the data table behind this figure, please refer to the Data Packet Workbook, Table HOMELS-02.

In San Mateo, Latinx residents represent 38.1% of the population experiencing homelessness, while Latinx residents comprise 24.7% of the general population (see Figure 43).

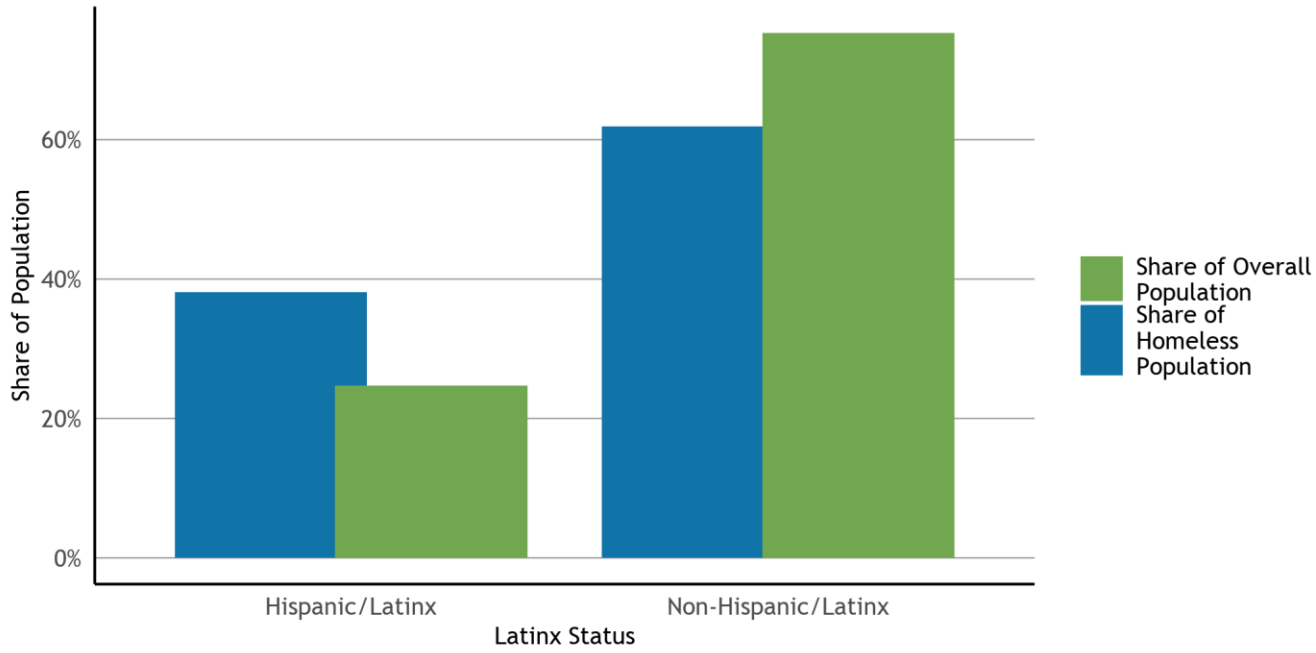


Figure 43: Latinx Share of General and Homeless Populations, San Mateo County

Universe: Population experiencing homelessness
Notes: This data is based on Point-in-Time (PIT) information provided to HUD by CoCs in the application for CoC Homeless Assistance Programs. The PIT Count provides a count of sheltered and unsheltered homeless persons on a single night during the last ten days in January. Each Bay Area county is its own CoC, and so the data for this table is provided at the county-level. Per HCD's requirements, jurisdictions will need to supplement this county-level data with local estimates of people experiencing homelessness. The data from HUD on Hispanic/Latinx ethnicity for individuals experiencing homelessness does not specify racial group identity. Accordingly, individuals in either ethnic group identity category (Hispanic/Latinx or non-Hispanic/Latinx) could be of any racial background.
Source: U.S. Department of Housing and Urban Development (HUD), Continuum of Care (CoC) Homeless Populations and Subpopulations Reports (2019); U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B01001(A-I)
For the data table behind this figure, please refer to the Data Packet Workbook, Table HOMELS-03.

Many of those experiencing homelessness are dealing with severe issues – including mental illness, substance abuse and domestic violence – that are potentially life threatening and require additional assistance. In San Mateo County, homeless individuals are commonly challenged by severe mental illness, with 305 reporting this condition (see Figure 12). Of those, some 62.0% are unsheltered, further adding to the challenge of handling the issue.

Note on Homelessness Data

Notably all the data on homelessness provided above is for the entire county. This data comes from the Department of Housing and Urban Development's (HUD) Point in Time count, which is the most comprehensive publicly available data source on people experiencing homelessness. HUD only provides this data at the county-level and not for specific jurisdictions. However, Housing Element law requires local jurisdictions to estimate or count of the daily average number of people lacking shelter. Therefore, staff will need to supplement the data in this document with additional local data on the number of people experiencing homelessness. If staff do not have estimates of people experiencing homelessness in their jurisdiction readily available, HCD recommends contacting local service providers such as continuum-of-care providers, local homeless shelter and service providers, food

programs, operators of transitional housing programs, local drug and alcohol program service providers, and county mental health and social service departments.[24]

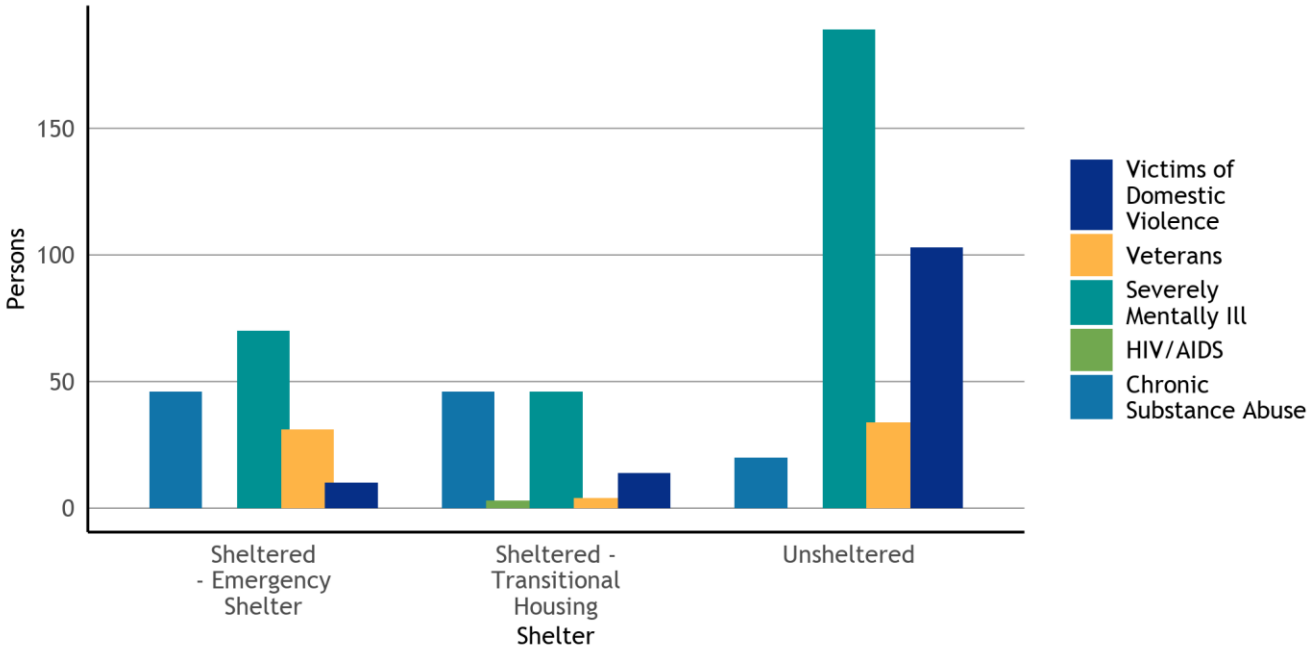


Figure 44: Characteristics for the Population Experiencing Homelessness, San Mateo County

Universe: Population experiencing homelessness
Notes: This data is based on Point-in-Time (PIT) information provided to HUD by CoCs in the application for CoC Homeless Assistance Programs. The PIT Count provides a count of sheltered and unsheltered homeless persons on a single night during the last ten days in January. Each Bay Area county is its own CoC, and so the data for this table is provided at the county-level. Per HCD's requirements, jurisdictions will need to supplement this county-level data with local estimates of people experiencing homelessness. These challenges/characteristics are counted separately and are not mutually exclusive, as an individual may report more than one challenge/characteristic. These counts should not be summed.
Source: U.S. Department of Housing and Urban Development (HUD), Continuum of Care (CoC) Homeless Populations and Subpopulations Reports (2019)
For the data table behind this figure, please refer to the Data Packet Workbook, Table HOMELS-04.

In Redwood City, the student population experiencing homelessness totaled 37 during the 2019-20 school year and increased by 27.6% since the 2016-17 school year. By comparison, San Mateo County has seen a 37.5% decrease in the population of students experiencing homelessness since the 2016-17 school year, and the Bay Area population of students experiencing homelessness decreased by 8.5%. During the 2019-2020 school year, there were still some 13,718 students experiencing homelessness throughout the region, adding undue burdens on learning and thriving, with the potential for longer term negative effects.

The number of students in Redwood City experiencing homelessness in 2019 represents 3.1% of the San Mateo County total and 0.3% of the Bay Area total.

[24] For more information, see HCD's Building Blocks webpage for People Experiencing Homelessness: https://www.hcd.ca.gov/community-development/building-blocks/housing-needs/people-experiencing-homelessness.shtml

Table 7: Students in Local Public Schools Experiencing Homelessness

AcademicYear	Redwood City	San Mateo County	Bay Area
2016-17	29	1910	14990
2017-18	48	1337	15142
2018-19	33	1934	15427
2019-20	37	1194	13718

Universe: Total number of unduplicated primary and short-term enrollments within the academic year (July 1 to June 30), public schools
Notes: The California Department of Education considers students to be homeless if they are unsheltered, living in temporary shelters for people experiencing homelessness, living in hotels/motels, or temporarily doubled up and sharing the housing of other persons due to the loss of housing or economic hardship. The data used for this table was obtained at the school site level, matched to a file containing school locations, geocoded and assigned to jurisdiction, and finally summarized by geography.
Source: California Department of Education, California Longitudinal Pupil Achievement Data System (CALPADS), Cumulative Enrollment Data (Academic Years 2016-2017, 2017-2018, 2018-2019, 2019-2020)
This table is included in the Data Packet Workbook as Table HOMELS-05.

6.6 Farmworkers

Across the state, housing for farmworkers has been recognized as an important and unique concern. Farmworkers generally receive wages that are considerably lower than other jobs and may have temporary housing needs. Finding decent and affordable housing can be challenging, particularly in the current housing market.

In Redwood City, the migrant worker student population totaled 80 during the 2019-20 school year and has decreased by 38.5% since the 2016-17 school year. The trend for the region for the past few years has been a decline of 2.4% in the number of migrant worker students since the 2016-17 school year. The change at the county level is a 57.1% decrease in the number of migrant worker students since the 2016-17 school year.

Table 8: Migrant Worker Student Population

AcademicYear	Redwood City	San Mateo County	Bay Area
2016-17	130	657	4630
2017-18	87	418	4607
2018-19	80	307	4075
2019-20	80	282	3976

Universe: Total number of unduplicated primary and short-term enrollments within the academic year (July 1 to June 30), public schools
Notes: The data used for this table was obtained at the school site level, matched to a file containing school locations, geocoded and assigned to jurisdiction, and finally summarized by geography.
Source: California Department of Education, California Longitudinal Pupil Achievement Data System (CALPADS), Cumulative Enrollment Data (Academic Years 2016-2017, 2017-2018, 2018-2019, 2019-2020)
This table is included in the Data Packet Workbook as Table FARM-01.

According to the U.S. Department of Agriculture Census of Farmworkers, the number of permanent farm workers in San Mateo County has decreased since 2002, totaling 978 in 2017, while the number of seasonal farm workers has decreased, totaling 343 in 2017 (see Figure 45).

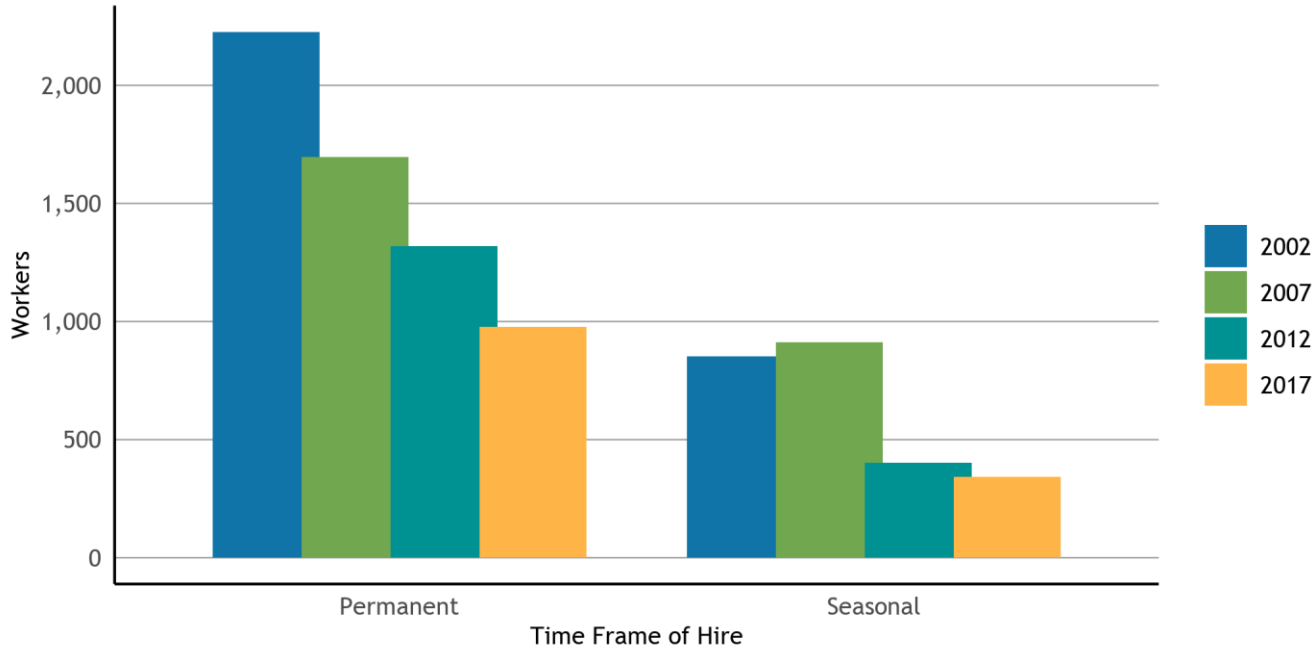


Figure 45: Farm Operations and Farm Labor by County, San Mateo County

Universe: Hired farm workers (including direct hires and agricultural service workers who are often hired through labor contractors)
Notes: Farm workers are considered seasonal if they work on a farm less than 150 days in a year, while farm workers who work on a farm more than 150 days are considered to be permanent workers for that farm.
Source: U.S. Department of Agriculture, Census of Farmworkers (2002, 2007, 2012, 2017), Table 7: Hired Farm Labor
For the data table behind this figure, please refer to the Data Packet Workbook, Table FARM-02.

6.7 Non-English Speakers

California has long been an immigration gateway to the United States, which means that many languages are spoken throughout the Bay Area. Since learning a new language is universally challenging, it is not uncommon for residents who have immigrated to the United States to have limited English proficiency. This limit can lead to additional disparities if there is a disruption in housing, such as an eviction, because residents might not be aware of their rights or they might be wary to engage due to immigration status concerns. In Redwood City, 8.8% of residents 5 years and older identify as speaking English not well or not at all, which is above the proportion for San Mateo County. Throughout the region the proportion of residents 5 years and older with limited English proficiency is 8%.

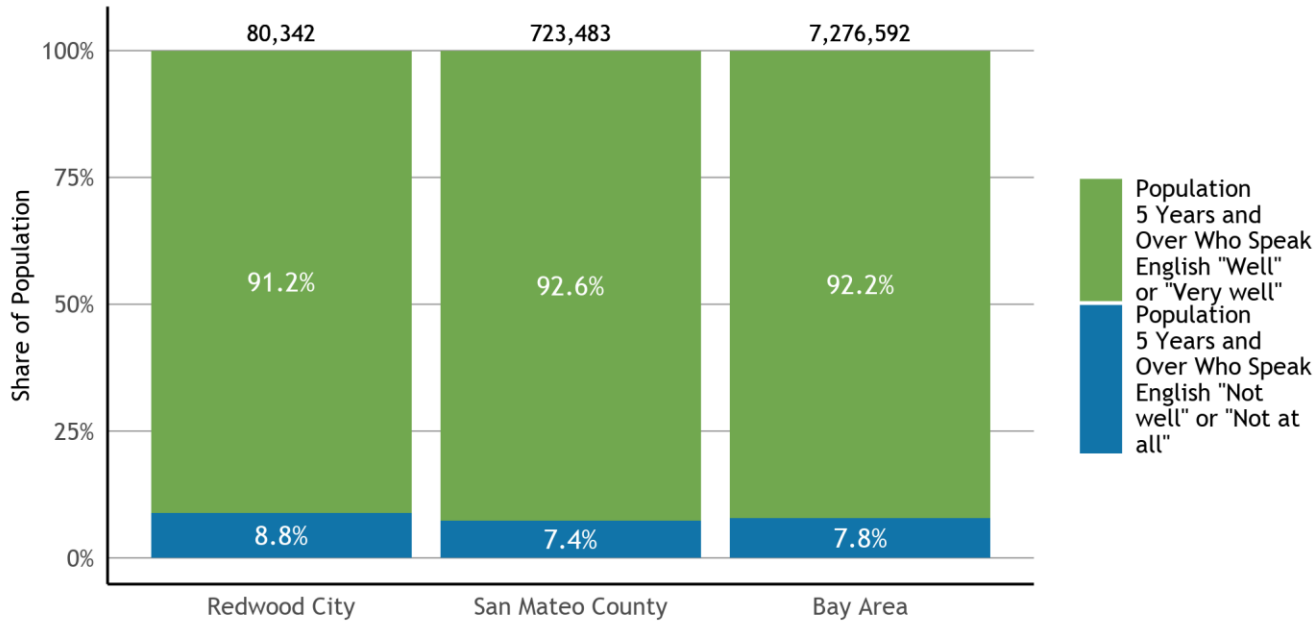


Figure 46: Population with Limited English Proficiency

Universe: Population 5 years and over
Source: U.S. Census Bureau, American Community Survey 5-Year Data (2015-2019), Table B16005
For the data table behind this figure, please refer to the Data Packet Workbook, Table AFFH-03.

Redwood City Focused General Plan Update Project

Appendix D: Air Quality, Energy and Greenhouse Gas Analysis Technical Appendices

Redwood City EIR - 2020 - San Mateo County, Summer

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

Redwood City EIR - 2020

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	8,179.00	Dwelling Unit	215.24	8,179,000.00	19283
Condo/Townhouse	8,179.00	Dwelling Unit	511.19	8,179,000.00	19283
Single Family Housing	22,735.00	Dwelling Unit	7,381.49	40,923,000.00	69165

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per City estimates

Construction Phase - Proportionally adjusted for 2040 end date

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

Redwood City EIR - 2020 - San Mateo County, Summer

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

Architectural Coating -

Vehicle Trips - Per VMT Summary for existing conditions from MIG

Woodstoves - No woodstoves

Area Coating - BAAQMD Regulation 8 Rule 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstructionPhase	NumDays	10,000.00	213.00
tblConstructionPhase	NumDays	6,000.00	128.00
tblConstructionPhase	NumDays	15,500.00	330.00
tblConstructionPhase	NumDays	155,000.00	3,294.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblGrading	AcresOfGrading	990.00	46,500.00
tblGrading	AcresOfGrading	192.00	9,000.00
tblLandUse	Population	23,392.00	19,283.00
tblLandUse	Population	23,392.00	19,283.00
tblLandUse	Population	65,022.00	69,165.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	9.54	24.22
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	8.55	24.22

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

tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	9.44	24.23
tblWoodstoves	NumberCatalytic	163.58	0.00
tblWoodstoves	NumberCatalytic	163.58	0.00
tblWoodstoves	NumberCatalytic	909.40	0.00
tblWoodstoves	NumberNoncatalytic	163.58	0.00
tblWoodstoves	NumberNoncatalytic	163.58	0.00
tblWoodstoves	NumberNoncatalytic	909.40	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Redwood City EIR - 2020 - San Mateo County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.6986	27.5465	19.9463	0.0398	92.7806	1.2667	94.0473	18.0213	1.1654	19.1867	0.0000	3,848.9999	3,848.9999	1.1953	2.6800e-003	3,875.9573
2024	3.2593	32.3992	28.1018	0.0634	155.6205	1.3361	156.9567	19.4892	1.2292	20.7184	0.0000	6,141.3267	6,141.3267	1.9465	2.7800e-003	6,190.8175
2025	44.6794	218.7093	441.5530	2.1214	192.2340	2.2314	194.4653	51.6253	2.1010	53.7263	0.0000	223,696.8447	223,696.8447	9.4080	16.5227	228,855.8213
2026	42.9796	214.6386	424.1845	2.0667	192.2370	2.1901	194.4271	51.6264	2.0628	53.6891	0.0000	218,189.2711	218,189.2711	9.3363	16.1308	223,229.6631
2027	41.4509	210.7873	409.8438	2.0157	192.2398	2.1409	194.3808	51.6274	2.0172	53.6446	0.0000	213,015.2750	213,015.2750	9.2644	15.7444	217,938.7063
2028	40.0178	207.6410	398.0171	1.9695	192.2429	2.0916	194.3345	51.6286	1.9715	53.6001	0.0000	208,310.3594	208,310.3594	9.2291	15.3861	213,126.1381
2029	38.5711	203.9748	387.6397	1.9251	192.2459	2.0426	194.2886	51.6297	1.9260	53.5557	0.0000	203,794.0085	203,794.0085	9.2092	15.0201	208,500.2238
2030	37.2760	196.7349	379.3509	1.8906	192.2488	1.6194	193.8682	51.6307	1.5372	53.1679	0.0000	200,198.5961	200,198.5961	8.7089	14.7122	204,800.5600
2031	36.0624	194.6401	372.1050	1.8565	192.2512	1.5830	193.8342	51.6316	1.5035	53.1351	0.0000	196,701.4360	196,701.4360	8.6902	14.4393	201,221.5895
2032	34.9562	192.7923	365.9611	1.8264	192.2532	1.5484	193.8015	51.6323	1.4714	53.1037	0.0000	193,601.3395	193,601.3395	8.6769	14.2002	198,049.9315
2033	33.9695	191.1483	360.7356	1.7995	192.2550	1.5164	193.7715	51.6330	1.4418	53.0748	0.0000	190,820.8273	190,820.8273	8.6625	13.9850	195,204.9059
2034	33.0730	189.7507	356.0748	1.7756	192.2569	1.4880	193.7449	51.6337	1.4154	53.0491	0.0000	188,346.2406	188,346.2406	8.6500	13.7934	192,672.9239
2035	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2036	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2037	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2038	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2039	3,451.8991	4.8853	54.2733	0.2102	32.7933	0.1877	32.8775	8.6983	0.1877	8.7766	0.0000	21,230.5665	21,230.5665	0.2728	0.3978	21,355.9276
Maximum	**3,451.8991**	**218.7093**	**441.5530**	**2.1214**	**192.2588**	**2.2314**	**194.4653**	**51.6343**	**2.1010**	**53.7263**	**0.0000**	**223,696.8447**	**223,696.8447**	**9.4080**	**16.5227**	**228,855.8213**

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

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Redwood City EIR - 2020 - San Mateo County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.6986	27.5465	19.9463	0.0398	41.8326	1.2667	43.0993	8.1312	1.1654	9.2965	0.0000	3,848.9999	3,848.9999	1.1953	2.6800e-003	3,875.9573
2024	3.2593	32.3992	28.1018	0.0634	70.1196	1.3361	71.4557	8.7941	1.2292	10.0233	0.0000	6,141.3267	6,141.3267	1.9465	2.7800e-003	6,190.8175
2025	44.6794	218.7093	441.5530	2.1214	192.2340	2.2314	194.4653	51.6253	2.1010	53.7263	0.0000	223,696.8447	223,696.8447	9.4080	16.5227	228,855.8213
2026	42.9796	214.6386	424.1845	2.0667	192.2370	2.1901	194.4271	51.6264	2.0628	53.6891	0.0000	218,189.2711	218,189.2711	9.3363	16.1308	223,229.6631
2027	41.4509	210.7873	409.8438	2.0157	192.2398	2.1409	194.3808	51.6274	2.0172	53.6446	0.0000	213,015.2750	213,015.2750	9.2644	15.7444	217,938.7063
2028	40.0178	207.6410	398.0171	1.9695	192.2429	2.0916	194.3345	51.6286	1.9715	53.6001	0.0000	208,310.3594	208,310.3594	9.2291	15.3861	213,126.1381
2029	38.5711	203.9748	387.6397	1.9251	192.2459	2.0426	194.2886	51.6297	1.9260	53.5557	0.0000	203,794.0085	203,794.0085	9.2092	15.0201	208,500.2238
2030	37.2760	196.7349	379.3509	1.8906	192.2488	1.6194	193.8682	51.6307	1.5372	53.1679	0.0000	200,198.5961	200,198.5961	8.7089	14.7122	204,800.5600
2031	36.0624	194.6401	372.1050	1.8565	192.2512	1.5830	193.8342	51.6316	1.5035	53.1351	0.0000	196,701.4360	196,701.4360	8.6902	14.4393	201,221.5895
2032	34.9562	192.7923	365.9611	1.8264	192.2532	1.5484	193.8015	51.6323	1.4714	53.1037	0.0000	193,601.3395	193,601.3395	8.6769	14.2002	198,049.9315
2033	33.9695	191.1483	360.7356	1.7995	192.2550	1.5164	193.7715	51.6330	1.4418	53.0748	0.0000	190,820.8273	190,820.8273	8.6625	13.9850	195,204.9059
2034	33.0730	189.7507	356.0748	1.7756	192.2569	1.4880	193.7449	51.6337	1.4154	53.0491	0.0000	188,346.2406	188,346.2406	8.6500	13.7934	192,672.9239
2035	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2036	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2037	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2038	32.1344	187.6383	352.0314	1.7543	192.2588	1.4048	193.6635	51.6343	1.3341	52.9684	0.0000	186,132.0702	186,132.0702	8.6239	13.6201	190,406.4675
2039	3,451.8991	4.8853	54.2733	0.2102	32.7933	0.1877	32.8775	8.6983	0.1877	8.7766	0.0000	21,230.5665	21,230.5665	0.2728	0.3978	21,355.9276
Maximum	**3,451.8991**	**218.7093**	**441.5530**	**2.1214**	**192.2588**	**2.2314**	**194.4653**	**51.6343**	**2.1010**	**53.7263**	**0.0000**	**223,696.8447**	**223,696.8447**	**9.4080**	**16.5227**	**228,855.8213**

Redwood City EIR - 2020 - San Mateo County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	4.59	0.00	4.55	2.68	0.00	2.59	0.00	0.00	0.00	0.00	0.00	0.00

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066
Energy	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831
Mobile	1,047.1774	738.0084	9,132.9141	19.2067	2,676.5531	8.5166	2,685.0696	712.8817	7.9486	720.8303		1,952,925.3595	1,952,925.3595	123.4955	82.0189	1,980,454.3724
Total	**32,048.3584**	**1,549.7996**	**45,103.9104**	**73.7623**	**2,676.5531**	**4,523.6259**	**7,200.1790**	**712.8817**	**4,523.0579**	**5,235.9396**	**438,432.2903**	**2,519,739.6934**	**2,958,171.9836**	**139.7758**	**130.9892**	**3,000,701.1622**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066
Energy	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831
Mobile	1,047.1774	738.0084	9,132.9141	19.2067	2,676.5531	8.5166	2,685.0696	712.8817	7.9486	720.8303		1,952,925.3595	1,952,925.3595	123.4955	82.0189	1,980,454.3724
Total	**32,048.3584**	**1,549.7996**	**45,103.9104**	**73.7623**	**2,676.5531**	**4,523.6259**	**7,200.1790**	**712.8817**	**4,523.0579**	**5,235.9396**	**438,432.2903**	**2,519,739.6934**	**2,958,171.9836**	**139.7758**	**130.9892**	**3,000,701.1622**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	10/25/2023	5	213	
2	Site Preparation	Site Preparation	10/26/2023	4/22/2024	5	128	
3	Grading	Grading	4/23/2024	7/28/2025	5	330	
4	Building Construction	Building Construction	7/29/2025	3/12/2038	5	3294	
5	Paving	Paving	3/13/2038	2/3/2039	5	234	
6	Architectural Coating	Architectural Coating	2/4/2039	12/28/2039	5	234	

Acres of Grading (Site Preparation Phase): 9000

Acres of Grading (Grading Phase): 46500

Acres of Paving: 0

Residential Indoor: 115,994,025; Residential Outdoor: 38,664,675; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19,962.00	4,179.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3,992.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**		**0.9975**	**0.9975**		**0.9280**	**0.9280**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0326	0.0186	0.3029	1.0100e-003	0.1232	5.7000e-004	0.1238	0.0327	5.2000e-004	0.0332		102.0159	102.0159	2.3000e-003	2.2300e-003	102.7390
Total	**0.0326**	**0.0186**	**0.3029**	**1.0100e-003**	**0.1232**	**5.7000e-004**	**0.1238**	**0.0327**	**5.2000e-004**	**0.0332**		**102.0159**	**102.0159**	**2.3000e-003**	**2.2300e-003**	**102.7390**

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**		**0.9975**	**0.9975**		**0.9280**	**0.9280**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0326	0.0186	0.3029	1.0100e-003	0.1232	5.7000e-004	0.1238	0.0327	5.2000e-004	0.0332		102.0159	102.0159	2.3000e-003	2.2300e-003	102.7390
Total	**0.0326**	**0.0186**	**0.3029**	**1.0100e-003**	**0.1232**	**5.7000e-004**	**0.1238**	**0.0327**	**5.2000e-004**	**0.0332**		**102.0159**	**102.0159**	**2.3000e-003**	**2.2300e-003**	**102.7390**

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					92.6327	0.0000	92.6327	17.9821	0.0000	17.9821			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**92.6327**	**1.2660**	**93.8987**	**17.9821**	**1.1647**	**19.1469**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0392	0.0223	0.3635	1.2100e-003	0.1479	6.8000e-004	0.1486	0.0392	6.3000e-004	0.0399		122.4191	122.4191	2.7600e-003	2.6800e-003	123.2868
Total	**0.0392**	**0.0223**	**0.3635**	**1.2100e-003**	**0.1479**	**6.8000e-004**	**0.1486**	**0.0392**	**6.3000e-004**	**0.0399**		**122.4191**	**122.4191**	**2.7600e-003**	**2.6800e-003**	**123.2868**

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					41.6847	0.0000	41.6847	8.0920	0.0000	8.0920			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**41.6847**	**1.2660**	**42.9507**	**8.0920**	**1.1647**	**9.2567**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0392	0.0223	0.3635	1.2100e-003	0.1479	6.8000e-004	0.1486	0.0392	6.3000e-004	0.0399		122.4191	122.4191	2.7600e-003	2.6800e-003	123.2868
Total	**0.0392**	**0.0223**	**0.3635**	**1.2100e-003**	**0.1479**	**6.8000e-004**	**0.1486**	**0.0392**	**6.3000e-004**	**0.0399**		**122.4191**	**122.4191**	**2.7600e-003**	**2.6800e-003**	**123.2868**

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

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					92.6327	0.0000	92.6327	17.9821	0.0000	17.9821			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**92.6327**	**1.2294**	**93.8620**	**17.9821**	**1.1310**	**19.1131**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0200	0.3411	1.1700e-003	0.1479	6.5000e-004	0.1485	0.0392	6.0000e-004	0.0398		118.4203	118.4203	2.5000e-003	2.5100e-003	119.2293
Total	**0.0370**	**0.0200**	**0.3411**	**1.1700e-003**	**0.1479**	**6.5000e-004**	**0.1485**	**0.0392**	**6.0000e-004**	**0.0398**		**118.4203**	**118.4203**	**2.5000e-003**	**2.5100e-003**	**119.2293**

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

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					41.6847	0.0000	41.6847	8.0920	0.0000	8.0920			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**41.6847**	**1.2294**	**42.9141**	**8.0920**	**1.1310**	**9.2230**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0370	0.0200	0.3411	1.1700e-003	0.1479	6.5000e-004	0.1485	0.0392	6.0000e-004	0.0398		118.4203	118.4203	2.5000e-003	2.5100e-003	119.2293
Total	**0.0370**	**0.0200**	**0.3411**	**1.1700e-003**	**0.1479**	**6.5000e-004**	**0.1485**	**0.0392**	**6.0000e-004**	**0.0398**		**118.4203**	**118.4203**	**2.5000e-003**	**2.5100e-003**	**119.2293**

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

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					155.4562	0.0000	155.4562	19.4456	0.0000	19.4456			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286		6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**155.4562**	**1.3354**	**156.7916**	**19.4456**	**1.2286**	**20.6742**		**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0411	0.0223	0.3790	1.3000e-003	0.1643	7.2000e-004	0.1650	0.0436	6.7000e-004	0.0442		131.5781	131.5781	2.7800e-003	2.7800e-003	132.4770
Total	**0.0411**	**0.0223**	**0.3790**	**1.3000e-003**	**0.1643**	**7.2000e-004**	**0.1650**	**0.0436**	**6.7000e-004**	**0.0442**		**131.5781**	**131.5781**	**2.7800e-003**	**2.7800e-003**	**132.4770**

Redwood City EIR - 2020 - San Mateo County, Summer

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

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					69.9553	0.0000	69.9553	8.7505	0.0000	8.7505			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286	0.0000	6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**69.9553**	**1.3354**	**71.2907**	**8.7505**	**1.2286**	**9.9791**	**0.0000**	**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0411	0.0223	0.3790	1.3000e-003	0.1643	7.2000e-004	0.1650	0.0436	6.7000e-004	0.0442		131.5781	131.5781	2.7800e-003	2.7800e-003	132.4770
Total	**0.0411**	**0.0223**	**0.3790**	**1.3000e-003**	**0.1643**	**7.2000e-004**	**0.1650**	**0.0436**	**6.7000e-004**	**0.0442**		**131.5781**	**131.5781**	**2.7800e-003**	**2.7800e-003**	**132.4770**

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

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					155.4562	0.0000	155.4562	19.4456	0.0000	19.4456			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**155.4562**	**1.1309**	**156.5871**	**19.4456**	**1.0404**	**20.4860**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0392	0.0202	0.3568	1.2600e-003	0.1643	6.9000e-004	0.1650	0.0436	6.4000e-004	0.0442		127.1637	127.1637	2.5200e-003	2.6200e-003	128.0066
Total	**0.0392**	**0.0202**	**0.3568**	**1.2600e-003**	**0.1643**	**6.9000e-004**	**0.1650**	**0.0436**	**6.4000e-004**	**0.0442**		**127.1637**	**127.1637**	**2.5200e-003**	**2.6200e-003**	**128.0066**

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

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					69.9553	0.0000	69.9553	8.7505	0.0000	8.7505			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**69.9553**	**1.1309**	**71.0862**	**8.7505**	**1.0404**	**9.7909**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0392	0.0202	0.3568	1.2600e-003	0.1643	6.9000e-004	0.1650	0.0436	6.4000e-004	0.0442		127.1637	127.1637	2.5200e-003	2.6200e-003	128.0066
Total	**0.0392**	**0.0202**	**0.3568**	**1.2600e-003**	**0.1643**	**6.9000e-004**	**0.1650**	**0.0436**	**6.4000e-004**	**0.0442**		**127.1637**	**127.1637**	**2.5200e-003**	**2.6200e-003**	**128.0066**

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

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2321	186.1147	69.3743	0.8388	28.2509	1.0141	29.2650	8.1293	0.9700	9.0993		94,218.2921	94,218.2921	6.2925	13.9107	98,520.9790
Worker	39.0799	20.1250	356.0940	1.2557	163.9831	0.6897	164.6728	43.4960	0.6348	44.1307		126,922.0783	126,922.0783	2.5146	2.6121	127,763.3443
Total	**43.3120**	**206.2397**	**425.4683**	**2.0944**	**192.2340**	**1.7038**	**193.9378**	**51.6253**	**1.6047**	**53.2300**		**221,140.3704**	**221,140.3704**	**8.8071**	**16.5227**	**226,284.3233**

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

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2321	186.1147	69.3743	0.8388	28.2509	1.0141	29.2650	8.1293	0.9700	9.0993		94,218.2921	94,218.2921	6.2925	13.9107	98,520.9790
Worker	39.0799	20.1250	356.0940	1.2557	163.9831	0.6897	164.6728	43.4960	0.6348	44.1307		126,922.0783	126,922.0783	2.5146	2.6121	127,763.3443
Total	**43.3120**	**206.2397**	**425.4683**	**2.0944**	**192.2340**	**1.7038**	**193.9378**	**51.6253**	**1.6047**	**53.2300**		**221,140.3704**	**221,140.3704**	**8.8071**	**16.5227**	**226,284.3233**

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

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1331	183.6850	69.6452	0.8204	28.2539	1.0082	29.2620	8.1304	0.9643	9.0947		92,384.1569	92,384.1569	6.4328	13.6495	96,612.5316
Worker	37.4791	18.4840	338.4547	1.2193	163.9831	0.6544	164.6375	43.4960	0.6022	44.0982		123,248.6399	123,248.6399	2.3025	2.4813	124,045.6334
Total	**41.6122**	**202.1689**	**408.0999**	**2.0397**	**192.2370**	**1.6626**	**193.8995**	**51.6264**	**1.5665**	**53.1929**		**215,632.7968**	**215,632.7968**	**8.7353**	**16.1308**	**220,658.1650**

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

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1331	183.6850	69.6452	0.8204	28.2539	1.0082	29.2620	8.1304	0.9643	9.0947		92,384.1569	92,384.1569	6.4328	13.6495	96,612.5316
Worker	37.4791	18.4840	338.4547	1.2193	163.9831	0.6544	164.6375	43.4960	0.6022	44.0982		123,248.6399	123,248.6399	2.3025	2.4813	124,045.6334
Total	**41.6122**	**202.1689**	**408.0999**	**2.0397**	**192.2370**	**1.6626**	**193.8995**	**51.6264**	**1.5665**	**53.1929**		**215,632.7968**	**215,632.7968**	**8.7353**	**16.1308**	**220,658.1650**

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

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0468	181.1744	69.8527	0.8012	28.2567	1.0001	29.2568	8.1315	0.9566	9.0881		90,411.6232	90,411.6232	6.5393	13.3688	94,559.0059
Worker	36.0367	17.1431	323.9065	1.1876	163.9831	0.6133	164.5964	43.4960	0.5643	44.0603		120,047.1774	120,047.1774	2.1241	2.3756	120,808.2024
Total	**40.0835**	**198.3176**	**393.7592**	**1.9888**	**192.2398**	**1.6134**	**193.8532**	**51.6274**	**1.5209**	**53.1483**		**210,458.8006**	**210,458.8006**	**8.6634**	**15.7444**	**215,367.2082**

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

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0468	181.1744	69.8527	0.8012	28.2567	1.0001	29.2568	8.1315	0.9566	9.0881		90,411.6232	90,411.6232	6.5393	13.3688	94,559.0059
Worker	36.0367	17.1431	323.9065	1.1876	163.9831	0.6133	164.5964	43.4960	0.5643	44.0603		120,047.1774	120,047.1774	2.1241	2.3756	120,808.2024
Total	**40.0835**	**198.3176**	**393.7592**	**1.9888**	**192.2398**	**1.6134**	**193.8532**	**51.6274**	**1.5209**	**53.1483**		**210,458.8006**	**210,458.8006**	**8.6634**	**15.7444**	**215,367.2082**

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

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9851	179.1371	70.2714	0.7829	28.2598	0.9934	29.2532	8.1326	0.9502	9.0828		88,540.5672	88,540.5672	6.6578	13.0978	92,610.1454
Worker	34.6653	16.0342	311.6611	1.1596	163.9831	0.5706	164.5538	43.4960	0.5251	44.0211		117,213.3178	117,213.3178	1.9704	2.2883	117,944.4947
Total	**38.6504**	**195.1714**	**381.9325**	**1.9425**	**192.2429**	**1.5641**	**193.8070**	**51.6286**	**1.4753**	**53.1038**		**205,753.8850**	**205,753.8850**	**8.6282**	**15.3861**	**210,554.6400**

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

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9851	179.1371	70.2714	0.7829	28.2598	0.9934	29.2532	8.1326	0.9502	9.0828		88,540.5672	88,540.5672	6.6578	13.0978	92,610.1454
Worker	34.6653	16.0342	311.6611	1.1596	163.9831	0.5706	164.5538	43.4960	0.5251	44.0211		117,213.3178	117,213.3178	1.9704	2.2883	117,944.4947
Total	**38.6504**	**195.1714**	**381.9325**	**1.9425**	**192.2429**	**1.5641**	**193.8070**	**51.6286**	**1.4753**	**53.1038**		**205,753.8850**	**205,753.8850**	**8.6282**	**15.3861**	**210,554.6400**

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

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9263	176.4220	70.6628	0.7635	28.2628	0.9820	29.2449	8.1337	0.9393	9.0730		86,541.8687	86,541.8687	6.7737	12.8054	90,527.2150
Worker	33.2773	15.0832	300.8923	1.1347	163.9831	0.5330	164.5161	43.4960	0.4905	43.9865		114,695.6654	114,695.6654	1.8345	2.2147	115,401.5107
Total	**37.2037**	**191.5051**	**371.5551**	**1.8982**	**192.2459**	**1.5151**	**193.7610**	**51.6297**	**1.4298**	**53.0594**		**201,237.5341**	**201,237.5341**	**8.6082**	**15.0201**	**205,928.7258**

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

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9263	176.4220	70.6628	0.7635	28.2628	0.9820	29.2449	8.1337	0.9393	9.0730		86,541.8687	86,541.8687	6.7737	12.8054	90,527.2150
Worker	33.2773	15.0832	300.8923	1.1347	163.9831	0.5330	164.5161	43.4960	0.4905	43.9865		114,695.6654	114,695.6654	1.8345	2.2147	115,401.5107
Total	**37.2037**	**191.5051**	**371.5551**	**1.8982**	**192.2459**	**1.5151**	**193.7610**	**51.6297**	**1.4298**	**53.0594**		**201,237.5341**	**201,237.5341**	**8.6082**	**15.0201**	**205,928.7258**

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

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8801	174.4668	71.1322	0.7470	28.2657	0.9716	29.2372	8.1347	0.9293	9.0640		84,830.0971	84,830.0971	6.8751	12.5565	88,743.8053
Worker	32.0868	14.3334	292.0617	1.1127	163.9831	0.4997	164.4828	43.4960	0.4598	43.9558		112,470.9523	112,470.9523	1.7176	2.1557	113,156.3018
Total	**35.9669**	**188.8003**	**363.1939**	**1.8596**	**192.2488**	**1.4713**	**193.7200**	**51.6307**	**1.3891**	**53.0198**		**197,301.0494**	**197,301.0494**	**8.5926**	**14.7122**	**201,900.1071**

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

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8801	174.4668	71.1322	0.7470	28.2657	0.9716	29.2372	8.1347	0.9293	9.0640		84,830.0971	84,830.0971	6.8751	12.5565	88,743.8053
Worker	32.0868	14.3334	292.0617	1.1127	163.9831	0.4997	164.4828	43.4960	0.4598	43.9558		112,470.9523	112,470.9523	1.7176	2.1557	113,156.3018
Total	**35.9669**	**188.8003**	**363.1939**	**1.8596**	**192.2488**	**1.4713**	**193.7200**	**51.6307**	**1.3891**	**53.0198**		**197,301.0494**	**197,301.0494**	**8.5926**	**14.7122**	**201,900.1071**

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

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8515	173.0117	71.6245	0.7324	28.2681	0.9658	29.2339	8.1356	0.9237	9.0593		83,300.6908	83,300.6908	6.9599	12.3328	87,149.8518
Worker	30.9018	13.6938	284.3235	1.0932	163.9831	0.4691	164.4522	43.4960	0.4316	43.9276		110,503.1984	110,503.1984	1.6140	2.1065	111,171.2848
Total	**34.7533**	**186.7055**	**355.9480**	**1.8256**	**192.2512**	**1.4348**	**193.6860**	**51.6316**	**1.3553**	**52.9869**		**193,803.8892**	**193,803.8892**	**8.5740**	**14.4393**	**198,321.1367**

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

3.5 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8515	173.0117	71.6245	0.7324	28.2681	0.9658	29.2339	8.1356	0.9237	9.0593		83,300.6908	83,300.6908	6.9599	12.3328	87,149.8518
Worker	30.9018	13.6938	284.3235	1.0932	163.9831	0.4691	164.4522	43.4960	0.4316	43.9276		110,503.1984	110,503.1984	1.6140	2.1065	111,171.2848
Total	**34.7533**	**186.7055**	**355.9480**	**1.8256**	**192.2512**	**1.4348**	**193.6860**	**51.6316**	**1.3553**	**52.9869**		**193,803.8892**	**193,803.8892**	**8.5740**	**14.4393**	**198,321.1367**

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

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8309	171.6806	72.1425	0.7194	28.2701	0.9592	29.2293	8.1363	0.9175	9.0538		81,935.6010	81,935.6010	7.0374	12.1336	85,727.3404
Worker	29.8162	13.1771	277.6616	1.0760	163.9831	0.4410	164.4241	43.4960	0.4058	43.9018		108,768.1918	108,768.1918	1.5233	2.0667	109,422.1383
Total	**33.6471**	**184.8577**	**349.8041**	**1.7954**	**192.2532**	**1.4002**	**193.6534**	**51.6323**	**1.3233**	**52.9556**		**190,703.7928**	**190,703.7928**	**8.5607**	**14.2002**	**195,149.4786**

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

3.5 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8309	171.6806	72.1425	0.7194	28.2701	0.9592	29.2293	8.1363	0.9175	9.0538		81,935.6010	81,935.6010	7.0374	12.1336	85,727.3404
Worker	29.8162	13.1771	277.6616	1.0760	163.9831	0.4410	164.4241	43.4960	0.4058	43.9018		108,768.1918	108,768.1918	1.5233	2.0667	109,422.1383
Total	**33.6471**	**184.8577**	**349.8041**	**1.7954**	**192.2532**	**1.4002**	**193.6534**	**51.6323**	**1.3233**	**52.9556**		**190,703.7928**	**190,703.7928**	**8.5607**	**14.2002**	**195,149.4786**

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

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8200	170.4472	72.6584	0.7075	28.2719	0.9528	29.2247	8.1370	0.9113	9.0483		80,676.6387	80,676.6387	7.1022	11.9502	84,415.3405
Worker	28.8404	12.7665	271.9203	1.0610	163.9831	0.4155	164.3986	43.4960	0.3824	43.8783		107,246.6419	107,246.6419	1.4441	2.0348	107,889.1126
Total	**32.6603**	**183.2137**	**344.5787**	**1.7685**	**192.2550**	**1.3683**	**193.6233**	**51.6330**	**1.2936**	**52.9266**		**187,923.2805**	**187,923.2805**	**8.5463**	**13.9850**	**192,304.4531**

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

3.5 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8200	170.4472	72.6584	0.7075	28.2719	0.9528	29.2247	8.1370	0.9113	9.0483		80,676.6387	80,676.6387	7.1022	11.9502	84,415.3405
Worker	28.8404	12.7665	271.9203	1.0610	163.9831	0.4155	164.3986	43.4960	0.3824	43.8783		107,246.6419	107,246.6419	1.4441	2.0348	107,889.1126
Total	**32.6603**	**183.2137**	**344.5787**	**1.7685**	**192.2550**	**1.3683**	**193.6233**	**51.6330**	**1.2936**	**52.9266**		**187,923.2805**	**187,923.2805**	**8.5463**	**13.9850**	**192,304.4531**

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

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8151	169.3838	73.1121	0.6968	28.2738	0.9476	29.2214	8.1377	0.9063	9.0440		79,534.9439	79,534.9439	7.1604	11.7844	83,225.7160
Worker	27.9487	12.4323	266.8056	1.0478	163.9831	0.3923	164.3754	43.4960	0.3610	43.8569		105,913.7500	105,913.7500	1.3734	2.0090	106,546.7551
Total	**31.7639**	**181.8161**	**339.9178**	**1.7446**	**192.2569**	**1.3398**	**193.5967**	**51.6337**	**1.2673**	**52.9009**		**185,448.6939**	**185,448.6939**	**8.5338**	**13.7934**	**189,772.4711**

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

3.5 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8151	169.3838	73.1121	0.6968	28.2738	0.9476	29.2214	8.1377	0.9063	9.0440		79,534.9439	79,534.9439	7.1604	11.7844	83,225.7160
Worker	27.9487	12.4323	266.8056	1.0478	163.9831	0.3923	164.3754	43.4960	0.3610	43.8569		105,913.7500	105,913.7500	1.3734	2.0090	106,546.7551
Total	**31.7639**	**181.8161**	**339.9178**	**1.7446**	**192.2569**	**1.3398**	**193.5967**	**51.6337**	**1.2673**	**52.9009**		**185,448.6939**	**185,448.6939**	**8.5338**	**13.7934**	**189,772.4711**

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

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.5 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8133	168.2995	73.4922	0.6870	28.2757	0.9430	29.2186	8.1384	0.9019	9.0403		78,478.4358	78,478.4358	7.2041	11.6310	82,124.5669
Worker	27.1043	12.1775	262.4214	1.0363	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		104,756.0877	104,756.0877	1.3119	1.9892	105,381.6559
Total	**30.9175**	**180.4770**	**335.9136**	**1.7234**	**192.2588**	**1.3143**	**193.5731**	**51.6343**	**1.2437**	**52.8780**		**183,234.5234**	**183,234.5234**	**8.5159**	**13.6201**	**187,506.2228**

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

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874		2,656.5168	2,656.5168	0.1022		2,659.0727
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**		**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0727**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	9.1500e-003	0.1972	7.8000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		78.7166	78.7166	9.9000e-004	1.4900e-003	79.1867
Total	**0.0204**	**9.1500e-003**	**0.1972**	**7.8000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**78.7166**	**78.7166**	**9.9000e-004**	**1.4900e-003**	**79.1867**

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

3.6 Paving - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874	0.0000	2,656.5168	2,656.5168	0.1022		2,659.0726
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	9.1500e-003	0.1972	7.8000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		78.7166	78.7166	9.9000e-004	1.4900e-003	79.1867
Total	**0.0204**	**9.1500e-003**	**0.1972**	**7.8000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**78.7166**	**78.7166**	**9.9000e-004**	**1.4900e-003**	**79.1867**

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

3.6 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874		2,656.5168	2,656.5168	0.1022		2,659.0727
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**		**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0727**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	9.1500e-003	0.1972	7.8000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		78.7166	78.7166	9.9000e-004	1.4900e-003	79.1867
Total	**0.0204**	**9.1500e-003**	**0.1972**	**7.8000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**78.7166**	**78.7166**	**9.9000e-004**	**1.4900e-003**	**79.1867**

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

3.6 Paving - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874	0.0000	2,656.5168	2,656.5168	0.1022		2,659.0726
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	9.1500e-003	0.1972	7.8000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		78.7166	78.7166	9.9000e-004	1.4900e-003	79.1867
Total	**0.0204**	**9.1500e-003**	**0.1972**	**7.8000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**78.7166**	**78.7166**	**9.9000e-004**	**1.4900e-003**	**79.1867**

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

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3,446.3609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**3,446.4788**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4203	2.4353	52.4790	0.2073	32.7933	0.0743	32.8676	8.6983	0.0683	8.7667		20,949.1184	20,949.1184	0.2624	0.3978	21,074.2195
Total	**5.4203**	**2.4353**	**52.4790**	**0.2073**	**32.7933**	**0.0743**	**32.8676**	**8.6983**	**0.0683**	**8.7667**		**20,949.1184**	**20,949.1184**	**0.2624**	**0.3978**	**21,074.2195**

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

3.7 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3,446.3609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**3,446.4788**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.4203	2.4353	52.4790	0.2073	32.7933	0.0743	32.8676	8.6983	0.0683	8.7667		20,949.1184	20,949.1184	0.2624	0.3978	21,074.2195
Total	**5.4203**	**2.4353**	**52.4790**	**0.2073**	**32.7933**	**0.0743**	**32.8676**	**8.6983**	**0.0683**	**8.7667**		**20,949.1184**	**20,949.1184**	**0.2624**	**0.3978**	**21,074.2195**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,047.1774	738.0084	9,132.9141	19.2067	2,676.5531	8.5166	2,685.0696	712.8817	7.9486	720.8303		1,952,925.3595	1,952,925.3595	123.4955	82.0189	1,980,454.3724
Unmitigated	1,047.1774	738.0084	9,132.9141	19.2067	2,676.5531	8.5166	2,685.0696	712.8817	7.9486	720.8303		1,952,925.3595	1,952,925.3595	123.4955	82.0189	1,980,454.3724

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Condo/Townhouse	0.00	0.00	0.00		
Single Family Housing	550,869.05	550,641.70	550641.70	1,272,141,154	1,272,141,154
Total	550,869.05	550,641.70	550,641.70	1,272,141,154	1,272,141,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Condo/Townhouse	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Single Family Housing	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831
NaturalGas Unmitigated	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	189193	2.0403	17.4354	7.4193	0.1113		1.4097	1.4097		1.4097	1.4097		22,257.9787	22,257.9787	0.4266	0.4081	22,390.2467
Condo/Townhouse	466750	5.0336	43.0142	18.3039	0.2746		3.4777	3.4777		3.4777	3.4777		54,911.7365	54,911.7365	1.0525	1.0067	55,238.0495
Single Family Housing	2.40375e+006	25.9228	221.5223	94.2648	1.4140		17.9103	17.9103		17.9103	17.9103		282,794.3813	282,794.3813	5.4202	5.1846	284,474.8869
Total		**32.9967**	**281.9719**	**119.9880**	**1.7998**		**22.7977**	**22.7977**		**22.7977**	**22.7977**		**359,964.0965**	**359,964.0965**	**6.8993**	**6.5993**	**362,103.1831**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	189.193	2.0403	17.4354	7.4193	0.1113		1.4097	1.4097		1.4097	1.4097		22,257.9787	22,257.9787	0.4266	0.4081	22,390.2467
Condo/Townhouse	466.75	5.0336	43.0142	18.3039	0.2746		3.4777	3.4777		3.4777	3.4777		54,911.7365	54,911.7365	1.0525	1.0067	55,238.0495
Single Family Housing	2403.75	25.9228	221.5223	94.2648	1.4140		17.9103	17.9103		17.9103	17.9103		282,794.3813	282,794.3813	5.4202	5.1846	284,474.8869
Total		**32.9967**	**281.9719**	**119.9880**	**1.7998**		**22.7977**	**22.7977**		**22.7977**	**22.7977**		**359,964.0965**	**359,964.0965**	**6.8993**	**6.5993**	**362,103.1831**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066
Unmitigated	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	98.1977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,225.8134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	29,548.1332	492.7553	32,639.9545	52.5855		4,474.4260	4,474.4260		4,474.4260	4,474.4260	438,432.2903	201,042.8824	639,475.1726	3.8533	42.3710	652,198.0602
Landscaping	96.0400	37.0639	3,211.0538	0.1703		17.8856	17.8856		17.8856	17.8856		5,807.3551	5,807.3551	5.5277		5,945.5464
Total	**30,968.1842**	**529.8193**	**35,851.0083**	**52.7558**		**4,492.3116**	**4,492.3116**		**4,492.3116**	**4,492.3116**	**438,432.2903**	**206,850.2374**	**645,282.5277**	**9.3810**	**42.3710**	**658,143.6066**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	98.1977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,225.8134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	29,548.1332	492.7553	32,639.9545	52.5855		4,474.4260	4,474.4260		4,474.4260	4,474.4260	438,432.2903	201,042.8824	639,475.1726	3.8533	42.3710	652,198.0602
Landscaping	96.0400	37.0639	3,211.0538	0.1703		17.8856	17.8856		17.8856	17.8856		5,807.3551	5,807.3551	5.5277		5,945.5464
Total	**30,968.1842**	**529.8193**	**35,851.0083**	**52.7558**		**4,492.3116**	**4,492.3116**		**4,492.3116**	**4,492.3116**	**438,432.2903**	**206,850.2374**	**645,282.5277**	**9.3810**	**42.3710**	**658,143.6066**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Redwood City EIR - 2020 - San Mateo County, Winter

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

Redwood City EIR - 2020

San Mateo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	8,179.00	Dwelling Unit	215.24	8,179,000.00	19283
Condo/Townhouse	8,179.00	Dwelling Unit	511.19	8,179,000.00	19283
Single Family Housing	22,735.00	Dwelling Unit	7,381.49	40,923,000.00	69165

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per City estimates

Construction Phase - Proportionally adjusted for 2040 end date

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

Redwood City EIR - 2020 - San Mateo County, Winter

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

Architectural Coating -

Vehicle Trips - Per VMT Summary for existing conditions from MIG

Woodstoves - No woodstoves

Area Coating - BAAQMD Regulation 8 Rule 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstructionPhase	NumDays	10,000.00	213.00
tblConstructionPhase	NumDays	6,000.00	128.00
tblConstructionPhase	NumDays	15,500.00	330.00
tblConstructionPhase	NumDays	155,000.00	3,294.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblGrading	AcresOfGrading	990.00	46,500.00
tblGrading	AcresOfGrading	192.00	9,000.00
tblLandUse	Population	23,392.00	19,283.00
tblLandUse	Population	23,392.00	19,283.00
tblLandUse	Population	65,022.00	69,165.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	9.54	24.22
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	8.55	24.22

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

tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	9.44	24.23
tblWoodstoves	NumberCatalytic	163.58	0.00
tblWoodstoves	NumberCatalytic	163.58	0.00
tblWoodstoves	NumberCatalytic	909.40	0.00
tblWoodstoves	NumberNoncatalytic	163.58	0.00
tblWoodstoves	NumberNoncatalytic	163.58	0.00
tblWoodstoves	NumberNoncatalytic	909.40	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Redwood City EIR - 2020 - San Mateo County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7022	27.5517	19.9455	0.0398	92.7806	1.2667	94.0473	18.0213	1.1654	19.1867	0.0000	3,843.4270	3,843.4270	1.1957	3.0800e-003	3,870.4915
2024	3.2633	32.4044	28.1018	0.0633	155.6205	1.3361	156.9567	19.4892	1.2292	20.7184	0.0000	6,134.1590	6,134.1590	1.9468	3.2000e-003	6,183.7827
2025	48.6710	233.3209	444.1593	2.0537	192.2340	2.2374	194.4714	51.6253	2.1068	53.7321	0.0000	216,859.9355	216,859.9355	9.7507	16.9342	222,150.0862
2026	47.0355	228.7901	427.1499	2.0011	192.2370	2.1957	194.4327	51.6264	2.0681	53.6945	0.0000	211,567.9732	211,567.9732	9.6531	16.5221	216,732.8721
2027	45.5417	224.5461	413.0522	1.9520	192.2398	2.1461	194.3859	51.6274	2.0221	53.6495	0.0000	206,579.1404	206,579.1404	9.5591	16.1195	211,621.7134
2028	44.1252	221.0816	401.3602	1.9073	192.2429	2.0965	194.3394	51.6286	1.9762	53.6047	0.0000	202,035.5717	202,035.5717	9.5042	15.7479	206,966.0463
2029	42.6711	217.0991	391.0299	1.8644	192.2459	2.0472	194.2931	51.6297	1.9304	53.5600	0.0000	197,660.6093	197,660.6093	9.4666	15.3707	202,477.7551
2030	41.3732	209.6326	382.7646	1.8311	192.2488	1.6235	193.8722	51.6307	1.5411	53.1718	0.0000	194,189.4666	194,189.4666	8.9505	15.0542	198,899.3717
2031	40.1416	207.3599	375.5086	1.7981	192.2512	1.5868	193.8380	51.6316	1.5071	53.1387	0.0000	190,800.8995	190,800.8995	8.9176	14.7740	195,426.4812
2032	39.0170	205.3721	369.3184	1.7688	192.2532	1.5519	193.8051	51.6323	1.4748	53.1071	0.0000	187,796.2088	187,796.2088	8.8915	14.5292	192,348.2074
2033	38.0116	203.6187	364.0220	1.7427	192.2550	1.5198	193.7748	51.6330	1.4450	53.0780	0.0000	185,099.4427	185,099.4427	8.8657	14.3095	189,585.3245
2034	37.1029	202.1305	359.2875	1.7196	192.2569	1.4911	193.7481	51.6337	1.4185	53.0521	0.0000	182,697.8002	182,697.8002	8.8429	14.1144	187,124.9592
2035	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2036	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2037	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2038	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2039	3,452.7282	4.8874	54.5397	0.1990	32.7933	0.1877	32.8775	8.6983	0.1877	8.7766	0.0000	20,094.8652	20,094.8652	0.3132	0.4561	20,238.6063
Maximum	**3,452.7282**	**233.3209**	**444.1593**	**2.0537**	**192.2588**	**2.2374**	**194.4714**	**51.6343**	**2.1068**	**53.7321**	**0.0000**	**216,859.9355**	**216,859.9355**	**9.7507**	**16.9342**	**222,150.0862**

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

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Redwood City EIR - 2020 - San Mateo County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7022	27.5517	19.9455	0.0398	41.8326	1.2667	43.0993	8.1312	1.1654	9.2965	0.0000	3,843.4270	3,843.4270	1.1957	3.0800e-003	3,870.4915
2024	3.2633	32.4044	28.1018	0.0633	70.1196	1.3361	71.4557	8.7941	1.2292	10.0233	0.0000	6,134.1590	6,134.1590	1.9468	3.2000e-003	6,183.7827
2025	48.6710	233.3209	444.1593	2.0537	192.2340	2.2374	194.4714	51.6253	2.1068	53.7321	0.0000	216,859.9355	216,859.9355	9.7507	16.9342	222,150.0862
2026	47.0355	228.7901	427.1499	2.0011	192.2370	2.1957	194.4327	51.6264	2.0681	53.6945	0.0000	211,567.9732	211,567.9732	9.6531	16.5221	216,732.8721
2027	45.5417	224.5461	413.0522	1.9520	192.2398	2.1461	194.3859	51.6274	2.0221	53.6495	0.0000	206,579.1404	206,579.1404	9.5591	16.1195	211,621.7134
2028	44.1252	221.0816	401.3602	1.9073	192.2429	2.0965	194.3394	51.6286	1.9762	53.6047	0.0000	202,035.5717	202,035.5717	9.5042	15.7479	206,966.0463
2029	42.6711	217.0991	391.0299	1.8644	192.2459	2.0472	194.2931	51.6297	1.9304	53.5600	0.0000	197,660.6093	197,660.6093	9.4666	15.3707	202,477.7551
2030	41.3732	209.6326	382.7646	1.8311	192.2488	1.6235	193.8722	51.6307	1.5411	53.1718	0.0000	194,189.4666	194,189.4666	8.9505	15.0542	198,899.3717
2031	40.1416	207.3599	375.5086	1.7981	192.2512	1.5868	193.8380	51.6316	1.5071	53.1387	0.0000	190,800.8995	190,800.8995	8.9176	14.7740	195,426.4812
2032	39.0170	205.3721	369.3184	1.7688	192.2532	1.5519	193.8051	51.6323	1.4748	53.1071	0.0000	187,796.2088	187,796.2088	8.8915	14.5292	192,348.2074
2033	38.0116	203.6187	364.0220	1.7427	192.2550	1.5198	193.7748	51.6330	1.4450	53.0780	0.0000	185,099.4427	185,099.4427	8.8657	14.3095	189,585.3245
2034	37.1029	202.1305	359.2875	1.7196	192.2569	1.4911	193.7481	51.6337	1.4185	53.0521	0.0000	182,697.8002	182,697.8002	8.8429	14.1144	187,124.9592
2035	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2036	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2037	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2038	36.1504	199.9414	355.1512	1.6990	192.2588	1.4078	193.6666	51.6343	1.3370	52.9714	0.0000	180,546.9318	180,546.9318	8.8075	13.9385	184,920.7773
2039	3,452.7282	4.8874	54.5397	0.1990	32.7933	0.1877	32.8775	8.6983	0.1877	8.7766	0.0000	20,094.8652	20,094.8652	0.3132	0.4561	20,238.6063
Maximum	**3,452.7282**	**233.3209**	**444.1593**	**2.0537**	**192.2588**	**2.2374**	**194.4714**	**51.6343**	**2.1068**	**53.7321**	**0.0000**	**216,859.9355**	**216,859.9355**	**9.7507**	**16.9342**	**222,150.0862**

Redwood City EIR - 2020 - San Mateo County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	4.59	0.00	4.55	2.68	0.00	2.59	0.00	0.00	0.00	0.00	0.00	0.00

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066
Energy	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831
Mobile	976.4011	855.5558	10,085.6583	18.4492	2,676.5531	8.5179	2,685.0710	712.8817	7.9499	720.8317		1,876,548.1022	1,876,548.1022	134.9309	89.6416	1,906,634.5648
Total	**31,977.5820**	**1,667.3469**	**46,056.6546**	**73.0048**	**2,676.5531**	**4,523.6272**	**7,200.1803**	**712.8817**	**4,523.0592**	**5,235.9410**	**438,432.2903**	**2,443,362.4360**	**2,881,794.7263**	**151.2112**	**138.6119**	**2,926,881.3545**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066
Energy	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831
Mobile	976.4011	855.5558	10,085.6583	18.4492	2,676.5531	8.5179	2,685.0710	712.8817	7.9499	720.8317		1,876,548.1022	1,876,548.1022	134.9309	89.6416	1,906,634.5648
Total	**31,977.5820**	**1,667.3469**	**46,056.6546**	**73.0048**	**2,676.5531**	**4,523.6272**	**7,200.1803**	**712.8817**	**4,523.0592**	**5,235.9410**	**438,432.2903**	**2,443,362.4360**	**2,881,794.7263**	**151.2112**	**138.6119**	**2,926,881.3545**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	10/25/2023	5	213	
2	Site Preparation	Site Preparation	10/26/2023	4/22/2024	5	128	
3	Grading	Grading	4/23/2024	7/28/2025	5	330	
4	Building Construction	Building Construction	7/29/2025	3/12/2038	5	3294	
5	Paving	Paving	3/13/2038	2/3/2039	5	234	
6	Architectural Coating	Architectural Coating	2/4/2039	12/28/2039	5	234	

Acres of Grading (Site Preparation Phase): 9000

Acres of Grading (Grading Phase): 46500

Acres of Paving: 0

Residential Indoor: 115,994,025; Residential Outdoor: 38,664,675; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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

Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19,962.00	4,179.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3,992.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**		**0.9975**	**0.9975**		**0.9280**	**0.9280**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0356	0.0229	0.3021	9.5000e-004	0.1232	5.7000e-004	0.1238	0.0327	5.2000e-004	0.0332		96.4430	96.4430	2.6100e-003	2.5700e-003	97.2732
Total	**0.0356**	**0.0229**	**0.3021**	**9.5000e-004**	**0.1232**	**5.7000e-004**	**0.1238**	**0.0327**	**5.2000e-004**	**0.0332**		**96.4430**	**96.4430**	**2.6100e-003**	**2.5700e-003**	**97.2732**

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**		**0.9975**	**0.9975**		**0.9280**	**0.9280**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0356	0.0229	0.3021	9.5000e-004	0.1232	5.7000e-004	0.1238	0.0327	5.2000e-004	0.0332		96.4430	96.4430	2.6100e-003	2.5700e-003	97.2732
Total	**0.0356**	**0.0229**	**0.3021**	**9.5000e-004**	**0.1232**	**5.7000e-004**	**0.1238**	**0.0327**	**5.2000e-004**	**0.0332**		**96.4430**	**96.4430**	**2.6100e-003**	**2.5700e-003**	**97.2732**

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					92.6327	0.0000	92.6327	17.9821	0.0000	17.9821			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**92.6327**	**1.2660**	**93.8987**	**17.9821**	**1.1647**	**19.1469**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0427	0.0275	0.3626	1.1400e-003	0.1479	6.8000e-004	0.1486	0.0392	6.3000e-004	0.0399		115.7316	115.7316	3.1300e-003	3.0800e-003	116.7279
Total	**0.0427**	**0.0275**	**0.3626**	**1.1400e-003**	**0.1479**	**6.8000e-004**	**0.1486**	**0.0392**	**6.3000e-004**	**0.0399**		**115.7316**	**115.7316**	**3.1300e-003**	**3.0800e-003**	**116.7279**

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					41.6847	0.0000	41.6847	8.0920	0.0000	8.0920			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**41.6847**	**1.2660**	**42.9507**	**8.0920**	**1.1647**	**9.2567**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0427	0.0275	0.3626	1.1400e-003	0.1479	6.8000e-004	0.1486	0.0392	6.3000e-004	0.0399		115.7316	115.7316	3.1300e-003	3.0800e-003	116.7279
Total	**0.0427**	**0.0275**	**0.3626**	**1.1400e-003**	**0.1479**	**6.8000e-004**	**0.1486**	**0.0392**	**6.3000e-004**	**0.0399**		**115.7316**	**115.7316**	**3.1300e-003**	**3.0800e-003**	**116.7279**

Redwood City EIR - 2020 - San Mateo County, Winter

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

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					92.6327	0.0000	92.6327	17.9821	0.0000	17.9821			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310		3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**92.6327**	**1.2294**	**93.8620**	**17.9821**	**1.1310**	**19.1131**		**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0407	0.0247	0.3411	1.1100e-003	0.1479	6.5000e-004	0.1485	0.0392	6.0000e-004	0.0398		111.9693	111.9693	2.8500e-003	2.8800e-003	112.8979
Total	**0.0407**	**0.0247**	**0.3411**	**1.1100e-003**	**0.1479**	**6.5000e-004**	**0.1485**	**0.0392**	**6.0000e-004**	**0.0398**		**111.9693**	**111.9693**	**2.8500e-003**	**2.8800e-003**	**112.8979**

Redwood City EIR - 2020 - San Mateo County, Winter

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

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					41.6847	0.0000	41.6847	8.0920	0.0000	8.0920			0.0000			0.0000
Off-Road	2.6609	27.1760	18.3356	0.0381		1.2294	1.2294		1.1310	1.1310	0.0000	3,688.0100	3,688.0100	1.1928		3,717.8294
Total	**2.6609**	**27.1760**	**18.3356**	**0.0381**	**41.6847**	**1.2294**	**42.9141**	**8.0920**	**1.1310**	**9.2230**	**0.0000**	**3,688.0100**	**3,688.0100**	**1.1928**		**3,717.8294**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0407	0.0247	0.3411	1.1100e-003	0.1479	6.5000e-004	0.1485	0.0392	6.0000e-004	0.0398		111.9693	111.9693	2.8500e-003	2.8800e-003	112.8979
Total	**0.0407**	**0.0247**	**0.3411**	**1.1100e-003**	**0.1479**	**6.5000e-004**	**0.1485**	**0.0392**	**6.0000e-004**	**0.0398**		**111.9693**	**111.9693**	**2.8500e-003**	**2.8800e-003**	**112.8979**

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

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					155.4562	0.0000	155.4562	19.4456	0.0000	19.4456			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286		6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**155.4562**	**1.3354**	**156.7916**	**19.4456**	**1.2286**	**20.6742**		**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0452	0.0274	0.3790	1.2300e-003	0.1643	7.2000e-004	0.1650	0.0436	6.7000e-004	0.0442		124.4103	124.4103	3.1600e-003	3.2000e-003	125.4422
Total	**0.0452**	**0.0274**	**0.3790**	**1.2300e-003**	**0.1643**	**7.2000e-004**	**0.1650**	**0.0436**	**6.7000e-004**	**0.0442**		**124.4103**	**124.4103**	**3.1600e-003**	**3.2000e-003**	**125.4422**

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

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					69.9553	0.0000	69.9553	8.7505	0.0000	8.7505			0.0000			0.0000
Off-Road	3.2181	32.3770	27.7228	0.0621		1.3354	1.3354		1.2286	1.2286	0.0000	6,009.7487	6,009.7487	1.9437		6,058.3405
Total	**3.2181**	**32.3770**	**27.7228**	**0.0621**	**69.9553**	**1.3354**	**71.2907**	**8.7505**	**1.2286**	**9.9791**	**0.0000**	**6,009.7487**	**6,009.7487**	**1.9437**		**6,058.3405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0452	0.0274	0.3790	1.2300e-003	0.1643	7.2000e-004	0.1650	0.0436	6.7000e-004	0.0442		124.4103	124.4103	3.1600e-003	3.2000e-003	125.4422
Total	**0.0452**	**0.0274**	**0.3790**	**1.2300e-003**	**0.1643**	**7.2000e-004**	**0.1650**	**0.0436**	**6.7000e-004**	**0.0442**		**124.4103**	**124.4103**	**3.1600e-003**	**3.2000e-003**	**125.4422**

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

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					155.4562	0.0000	155.4562	19.4456	0.0000	19.4456			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404		6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**155.4562**	**1.1309**	**156.5871**	**19.4456**	**1.0404**	**20.4860**		**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0248	0.3574	1.1900e-003	0.1643	6.9000e-004	0.1650	0.0436	6.4000e-004	0.0442		120.2533	120.2533	2.8800e-003	3.0100e-003	121.2207
Total	**0.0432**	**0.0248**	**0.3574**	**1.1900e-003**	**0.1643**	**6.9000e-004**	**0.1650**	**0.0436**	**6.4000e-004**	**0.0442**		**120.2533**	**120.2533**	**2.8800e-003**	**3.0100e-003**	**121.2207**

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

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					69.9553	0.0000	69.9553	8.7505	0.0000	8.7505			0.0000			0.0000
Off-Road	2.9012	27.9429	26.3311	0.0621		1.1309	1.1309		1.0404	1.0404	0.0000	6,008.2814	6,008.2814	1.9432		6,056.8614
Total	**2.9012**	**27.9429**	**26.3311**	**0.0621**	**69.9553**	**1.1309**	**71.0862**	**8.7505**	**1.0404**	**9.7909**	**0.0000**	**6,008.2814**	**6,008.2814**	**1.9432**		**6,056.8614**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0432	0.0248	0.3574	1.1900e-003	0.1643	6.9000e-004	0.1650	0.0436	6.4000e-004	0.0442		120.2533	120.2533	2.8800e-003	3.0100e-003	121.2207
Total	**0.0432**	**0.0248**	**0.3574**	**1.1900e-003**	**0.1643**	**6.9000e-004**	**0.1650**	**0.0436**	**6.4000e-004**	**0.0442**		**120.2533**	**120.2533**	**2.8800e-003**	**3.0100e-003**	**121.2207**

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

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1493	196.0900	71.4002	0.8393	28.2509	1.0202	29.2710	8.1293	0.9758	9.1051		94,278.6867	94,278.6867	6.2800	13.9348	98,588.2506
Worker	43.1542	24.7613	356.6744	1.1874	163.9831	0.6897	164.6728	43.4960	0.6348	44.1307		120,024.7744	120,024.7744	2.8698	2.9994	120,990.3375
Total	**47.3036**	**220.8512**	**428.0746**	**2.0267**	**192.2340**	**1.7098**	**193.9438**	**51.6253**	**1.6105**	**53.2358**		**214,303.4611**	**214,303.4611**	**9.1497**	**16.9342**	**219,578.5881**

Redwood City EIR - 2020 - San Mateo County, Winter

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

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1493	196.0900	71.4002	0.8393	28.2509	1.0202	29.2710	8.1293	0.9758	9.1051		94,278.6867	94,278.6867	6.2800	13.9348	98,588.2506
Worker	43.1542	24.7613	356.6744	1.1874	163.9831	0.6897	164.6728	43.4960	0.6348	44.1307		120,024.7744	120,024.7744	2.8698	2.9994	120,990.3375
Total	**47.3036**	**220.8512**	**428.0746**	**2.0267**	**192.2340**	**1.7098**	**193.9438**	**51.6253**	**1.6105**	**53.2358**		**214,303.4611**	**214,303.4611**	**9.1497**	**16.9342**	**219,578.5881**

Redwood City EIR - 2020 - San Mateo County, Winter

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

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0416	193.5836	71.6321	0.8210	28.2539	1.0138	29.2676	8.1304	0.9696	9.1001		92,449.5738	92,449.5738	6.4196	13.6737	96,684.8206
Worker	41.6265	22.7368	339.4331	1.1531	163.9831	0.6544	164.6375	43.4960	0.6022	44.0982		116,561.9251	116,561.9251	2.6326	2.8484	117,476.5534
Total	**45.6681**	**216.3204**	**411.0652**	**1.9741**	**192.2370**	**1.6682**	**193.9051**	**51.6264**	**1.5719**	**53.1982**		**209,011.4989**	**209,011.4989**	**9.0521**	**16.5221**	**214,161.3741**

Redwood City EIR - 2020 - San Mateo County, Winter

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

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0416	193.5836	71.6321	0.8210	28.2539	1.0138	29.2676	8.1304	0.9696	9.1001		92,449.5738	92,449.5738	6.4196	13.6737	96,684.8206
Worker	41.6265	22.7368	339.4331	1.1531	163.9831	0.6544	164.6375	43.4960	0.6022	44.0982		116,561.9251	116,561.9251	2.6326	2.8484	117,476.5534
Total	**45.6681**	**216.3204**	**411.0652**	**1.9741**	**192.2370**	**1.6682**	**193.9051**	**51.6264**	**1.5719**	**53.1982**		**209,011.4989**	**209,011.4989**	**9.0521**	**16.5221**	**214,161.3741**

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

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9475	190.9927	71.8026	0.8018	28.2567	1.0053	29.2620	8.1315	0.9615	9.0930		90,481.6418	90,481.6418	6.5253	13.3931	94,635.9270
Worker	40.2268	21.0837	325.1650	1.1233	163.9831	0.6133	164.5964	43.4960	0.5643	44.0603		113,541.0243	113,541.0243	2.4328	2.7263	114,414.2883
Total	**44.1743**	**212.0764**	**396.9675**	**1.9251**	**192.2398**	**1.6185**	**193.8584**	**51.6274**	**1.5258**	**53.1533**		**204,022.6661**	**204,022.6661**	**8.9581**	**16.1195**	**209,050.2154**

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

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.9475	190.9927	71.8026	0.8018	28.2567	1.0053	29.2620	8.1315	0.9615	9.0930		90,481.6418	90,481.6418	6.5253	13.3931	94,635.9270
Worker	40.2268	21.0837	325.1650	1.1233	163.9831	0.6133	164.5964	43.4960	0.5643	44.0603		113,541.0243	113,541.0243	2.4328	2.7263	114,414.2883
Total	**44.1743**	**212.0764**	**396.9675**	**1.9251**	**192.2398**	**1.6185**	**193.8584**	**51.6274**	**1.5258**	**53.1533**		**204,022.6661**	**204,022.6661**	**8.9581**	**16.1195**	**209,050.2154**

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

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8797	188.8970	72.1893	0.7836	28.2598	0.9983	29.2581	8.1326	0.9548	9.0874		88,614.2768	88,614.2768	6.6432	13.1223	92,690.8035
Worker	38.8781	19.7149	313.0862	1.0968	163.9831	0.5706	164.5538	43.4960	0.5251	44.0211		110,864.8205	110,864.8205	2.2601	2.6256	111,703.7447
Total	**42.7578**	**208.6120**	**385.2755**	**1.8803**	**192.2429**	**1.5689**	**193.8118**	**51.6286**	**1.4799**	**53.1085**		**199,479.0974**	**199,479.0974**	**8.9033**	**15.7479**	**204,394.5482**

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

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8797	188.8970	72.1893	0.7836	28.2598	0.9983	29.2581	8.1326	0.9548	9.0874		88,614.2768	88,614.2768	6.6432	13.1223	92,690.8035
Worker	38.8781	19.7149	313.0862	1.0968	163.9831	0.5706	164.5538	43.4960	0.5251	44.0211		110,864.8205	110,864.8205	2.2601	2.6256	111,703.7447
Total	**42.7578**	**208.6120**	**385.2755**	**1.8803**	**192.2429**	**1.5689**	**193.8118**	**51.6286**	**1.4799**	**53.1085**		**199,479.0974**	**199,479.0974**	**8.9033**	**15.7479**	**204,394.5482**

Redwood City EIR - 2020 - San Mateo County, Winter

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

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8159	186.0897	72.5482	0.7642	28.2628	0.9866	29.2494	8.1337	0.9436	9.0773		86,618.8941	86,618.8941	6.7585	12.8302	90,611.2426
Worker	37.4878	18.5397	302.3970	1.0732	163.9831	0.5330	164.5161	43.4960	0.4905	43.9865		108,485.2408	108,485.2408	2.1071	2.5406	109,295.0145
Total	**41.3037**	**204.6294**	**374.9453**	**1.8374**	**192.2459**	**1.5196**	**193.7655**	**51.6297**	**1.4341**	**53.0638**		**195,104.1349**	**195,104.1349**	**8.8656**	**15.3707**	**199,906.2570**

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

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8159	186.0897	72.5482	0.7642	28.2628	0.9866	29.2494	8.1337	0.9436	9.0773		86,618.8941	86,618.8941	6.7585	12.8302	90,611.2426
Worker	37.4878	18.5397	302.3970	1.0732	163.9831	0.5330	164.5161	43.4960	0.4905	43.9865		108,485.2408	108,485.2408	2.1071	2.5406	109,295.0145
Total	**41.3037**	**204.6294**	**374.9453**	**1.8374**	**192.2459**	**1.5196**	**193.7655**	**51.6297**	**1.4341**	**53.0638**		**195,104.1349**	**195,104.1349**	**8.8656**	**15.3707**	**199,906.2570**

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

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7650	184.0838	72.9859	0.7477	28.2657	0.9757	29.2413	8.1347	0.9332	9.0679		84,910.5524	84,910.5524	6.8593	12.5816	88,831.3515
Worker	36.2991	17.6142	293.6217	1.0524	163.9831	0.4997	164.4828	43.4960	0.4598	43.9558		106,381.3674	106,381.3674	1.9750	2.4726	107,167.5674
Total	**40.0640**	**201.6980**	**366.6076**	**1.8001**	**192.2488**	**1.4753**	**193.7241**	**51.6307**	**1.3930**	**53.0237**		**191,291.9198**	**191,291.9198**	**8.8343**	**15.0542**	**195,998.9189**

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

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7650	184.0838	72.9859	0.7477	28.2657	0.9757	29.2413	8.1347	0.9332	9.0679		84,910.5524	84,910.5524	6.8593	12.5816	88,831.3515
Worker	36.2991	17.6142	293.6217	1.0524	163.9831	0.4997	164.4828	43.4960	0.4598	43.9558		106,381.3674	106,381.3674	1.9750	2.4726	107,167.5674
Total	**40.0640**	**201.6980**	**366.6076**	**1.8001**	**192.2488**	**1.4753**	**193.7241**	**51.6307**	**1.3930**	**53.0237**		**191,291.9198**	**191,291.9198**	**8.8343**	**15.0542**	**195,998.9189**

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

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7328	182.6014	73.4568	0.7331	28.2681	0.9696	29.2377	8.1356	0.9274	9.0630		83,384.0523	83,384.0523	6.9436	12.3582	87,240.3869
Worker	35.0997	16.8239	285.8947	1.0340	163.9831	0.4691	164.4522	43.4960	0.4316	43.9276		104,519.3004	104,519.3004	1.8578	2.4158	105,285.6414
Total	**38.8325**	**199.4253**	**359.3516**	**1.7671**	**192.2512**	**1.4386**	**193.6898**	**51.6316**	**1.3590**	**52.9906**		**187,903.3528**	**187,903.3528**	**8.8014**	**14.7740**	**192,526.0283**

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

3.5 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7328	182.6014	73.4568	0.7331	28.2681	0.9696	29.2377	8.1356	0.9274	9.0630		83,384.0523	83,384.0523	6.9436	12.3582	87,240.3869
Worker	35.0997	16.8239	285.8947	1.0340	163.9831	0.4691	164.4522	43.4960	0.4316	43.9276		104,519.3004	104,519.3004	1.8578	2.4158	105,285.6414
Total	**38.8325**	**199.4253**	**359.3516**	**1.7671**	**192.2512**	**1.4386**	**193.6898**	**51.6316**	**1.3590**	**52.9906**		**187,903.3528**	**187,903.3528**	**8.8014**	**14.7740**	**192,526.0283**

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

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7088	181.2516	73.9585	0.7201	28.2701	0.9628	29.2329	8.1363	0.9209	9.0572		82,021.8868	82,021.8868	7.0204	12.1594	85,820.8976
Worker	33.9991	16.1859	279.2030	1.0177	163.9831	0.4410	164.4241	43.4960	0.4058	43.9018		102,876.7752	102,876.7752	1.7549	2.3698	103,626.8570
Total	**37.7079**	**197.4375**	**353.1614**	**1.7379**	**192.2532**	**1.4038**	**193.6570**	**51.6323**	**1.3267**	**52.9590**		**184,898.6620**	**184,898.6620**	**8.7753**	**14.5292**	**189,447.7546**

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

3.5 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7088	181.2516	73.9585	0.7201	28.2701	0.9628	29.2329	8.1363	0.9209	9.0572		82,021.8868	82,021.8868	7.0204	12.1594	85,820.8976
Worker	33.9991	16.1859	279.2030	1.0177	163.9831	0.4410	164.4241	43.4960	0.4058	43.9018		102,876.7752	102,876.7752	1.7549	2.3698	103,626.8570
Total	**37.7079**	**197.4375**	**353.1614**	**1.7379**	**192.2532**	**1.4038**	**193.6570**	**51.6323**	**1.3267**	**52.9590**		**184,898.6620**	**184,898.6620**	**8.7753**	**14.5292**	**189,447.7546**

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

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6951	180.0050	74.4622	0.7083	28.2719	0.9561	29.2281	8.1370	0.9145	9.0515		80,765.9552	80,765.9552	7.0847	11.9764	84,512.0381
Worker	33.0074	15.6791	273.4028	1.0035	163.9831	0.4155	164.3986	43.4960	0.3824	43.8783		101,435.9408	101,435.9408	1.6648	2.3331	102,172.8336
Total	**36.7025**	**195.6840**	**347.8650**	**1.7118**	**192.2550**	**1.3716**	**193.6267**	**51.6330**	**1.2968**	**52.9298**		**182,201.8959**	**182,201.8959**	**8.7494**	**14.3095**	**186,684.8717**

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

3.5 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6951	180.0050	74.4622	0.7083	28.2719	0.9561	29.2281	8.1370	0.9145	9.0515		80,765.9552	80,765.9552	7.0847	11.9764	84,512.0381
Worker	33.0074	15.6791	273.4028	1.0035	163.9831	0.4155	164.3986	43.4960	0.3824	43.8783		101,435.9408	101,435.9408	1.6648	2.3331	102,172.8336
Total	**36.7025**	**195.6840**	**347.8650**	**1.7118**	**192.2550**	**1.3716**	**193.6267**	**51.6330**	**1.2968**	**52.9298**		**182,201.8959**	**182,201.8959**	**8.7494**	**14.3095**	**186,684.8717**

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

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481		2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**		**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6879	178.9292	74.9080	0.6976	28.2738	0.9508	29.2246	8.1377	0.9094	9.0470		79,626.6710	79,626.6710	7.1423	11.8110	83,324.9058
Worker	32.1059	15.2667	268.2225	0.9910	163.9831	0.3923	164.3754	43.4960	0.3610	43.8569		100,173.5824	100,173.5824	1.5843	2.3034	100,899.6006
Total	**35.7938**	**194.1959**	**343.1305**	**1.6886**	**192.2569**	**1.3430**	**193.5999**	**51.6337**	**1.2703**	**52.9040**		**179,800.2535**	**179,800.2535**	**8.7266**	**14.1144**	**184,224.5064**

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

3.5 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3091	7.9346	16.1570	0.0310		0.1481	0.1481		0.1481	0.1481	0.0000	2,897.5468	2,897.5468	0.1162		2,900.4529
Total	**1.3091**	**7.9346**	**16.1570**	**0.0310**		**0.1481**	**0.1481**		**0.1481**	**0.1481**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1162**		**2,900.4529**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6879	178.9292	74.9080	0.6976	28.2738	0.9508	29.2246	8.1377	0.9094	9.0470		79,626.6710	79,626.6710	7.1423	11.8110	83,324.9058
Worker	32.1059	15.2667	268.2225	0.9910	163.9831	0.3923	164.3754	43.4960	0.3610	43.8569		100,173.5824	100,173.5824	1.5843	2.3034	100,899.6006
Total	**35.7938**	**194.1959**	**343.1305**	**1.6886**	**192.2569**	**1.3430**	**193.5999**	**51.6337**	**1.2703**	**52.9040**		**179,800.2535**	**179,800.2535**	**8.7266**	**14.1144**	**184,224.5064**

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

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904		2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**		**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.5 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2168	7.1613	16.1178	0.0310		0.0904	0.0904		0.0904	0.0904	0.0000	2,897.5468	2,897.5468	0.1079		2,900.2448
Total	**1.2168**	**7.1613**	**16.1178**	**0.0310**		**0.0904**	**0.0904**		**0.0904**	**0.0904**	**0.0000**	**2,897.5468**	**2,897.5468**	**0.1079**		**2,900.2448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6837	177.8276	75.2798	0.6879	28.2757	0.9461	29.2217	8.1384	0.9049	9.0432		78,572.3728	78,572.3728	7.1855	11.6578	82,226.0428
Worker	31.2500	14.9525	263.7536	0.9801	163.9831	0.3714	164.3545	43.4960	0.3417	43.8377		99,077.0123	99,077.0123	1.5140	2.2806	99,794.4897
Total	**34.9336**	**192.7801**	**339.0334**	**1.6680**	**192.2588**	**1.3174**	**193.5762**	**51.6343**	**1.2466**	**52.8809**		**177,649.3851**	**177,649.3851**	**8.6996**	**13.9385**	**182,020.5326**

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

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874		2,656.5168	2,656.5168	0.1022		2,659.0727
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**		**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0727**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0235	0.0112	0.1982	7.4000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		74.4492	74.4492	1.1400e-003	1.7100e-003	74.9884
Total	**0.0235**	**0.0112**	**0.1982**	**7.4000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**74.4492**	**74.4492**	**1.1400e-003**	**1.7100e-003**	**74.9884**

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

3.6 Paving - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874	0.0000	2,656.5168	2,656.5168	0.1022		2,659.0726
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0235	0.0112	0.1982	7.4000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		74.4492	74.4492	1.1400e-003	1.7100e-003	74.9884
Total	**0.0235**	**0.0112**	**0.1982**	**7.4000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**74.4492**	**74.4492**	**1.1400e-003**	**1.7100e-003**	**74.9884**

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

3.6 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874		2,656.5168	2,656.5168	0.1022		2,659.0727
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**		**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0727**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0235	0.0112	0.1982	7.4000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		74.4492	74.4492	1.1400e-003	1.7100e-003	74.9884
Total	**0.0235**	**0.0112**	**0.1982**	**7.4000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**74.4492**	**74.4492**	**1.1400e-003**	**1.7100e-003**	**74.9884**

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

3.6 Paving - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1405	4.8761	15.8203	0.0281		0.1874	0.1874		0.1874	0.1874	0.0000	2,656.5168	2,656.5168	0.1022		2,659.0726
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1405**	**4.8761**	**15.8203**	**0.0281**		**0.1874**	**0.1874**		**0.1874**	**0.1874**	**0.0000**	**2,656.5168**	**2,656.5168**	**0.1022**		**2,659.0726**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0235	0.0112	0.1982	7.4000e-004	0.1232	2.8000e-004	0.1235	0.0327	2.6000e-004	0.0329		74.4492	74.4492	1.1400e-003	1.7100e-003	74.9884
Total	**0.0235**	**0.0112**	**0.1982**	**7.4000e-004**	**0.1232**	**2.8000e-004**	**0.1235**	**0.0327**	**2.6000e-004**	**0.0329**		**74.4492**	**74.4492**	**1.1400e-003**	**1.7100e-003**	**74.9884**

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

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3,446.3609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003		281.4481	281.4481	0.0104		281.7081
Total	**3,446.4788**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**		**281.4481**	**281.4481**	**0.0104**		**281.7081**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2494	2.9902	52.7454	0.1960	32.7933	0.0743	32.8676	8.6983	0.0683	8.7667		19,813.4171	19,813.4171	0.3028	0.4561	19,956.8983
Total	**6.2494**	**2.9902**	**52.7454**	**0.1960**	**32.7933**	**0.0743**	**32.8676**	**8.6983**	**0.0683**	**8.7667**		**19,813.4171**	**19,813.4171**	**0.3028**	**0.4561**	**19,956.8983**

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

3.7 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3,446.3609					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1179	0.7577	1.7943	2.9700e-003		9.9000e-003	9.9000e-003		9.9000e-003	9.9000e-003	0.0000	281.4481	281.4481	0.0104		281.7081
Total	**3,446.4788**	**0.7577**	**1.7943**	**2.9700e-003**		**9.9000e-003**	**9.9000e-003**		**9.9000e-003**	**9.9000e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0104**		**281.7081**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2494	2.9902	52.7454	0.1960	32.7933	0.0743	32.8676	8.6983	0.0683	8.7667		19,813.4171	19,813.4171	0.3028	0.4561	19,956.8983
Total	**6.2494**	**2.9902**	**52.7454**	**0.1960**	**32.7933**	**0.0743**	**32.8676**	**8.6983**	**0.0683**	**8.7667**		**19,813.4171**	**19,813.4171**	**0.3028**	**0.4561**	**19,956.8983**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	976.4011	855.5558	10,085.6583	18.4492	2,676.5531	8.5179	2,685.0710	712.8817	7.9499	720.8317		1,876,548.1022	1,876,548.1022	134.9309	89.6416	1,906,634.5648
Unmitigated	976.4011	855.5558	10,085.6583	18.4492	2,676.5531	8.5179	2,685.0710	712.8817	7.9499	720.8317		1,876,548.1022	1,876,548.1022	134.9309	89.6416	1,906,634.5648

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Condo/Townhouse	0.00	0.00	0.00		
Single Family Housing	550,869.05	550,641.70	550641.70	1,272,141,154	1,272,141,154
Total	550,869.05	550,641.70	550,641.70	1,272,141,154	1,272,141,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Condo/Townhouse	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Single Family Housing	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831
NaturalGas Unmitigated	32.9967	281.9719	119.9880	1.7998		22.7977	22.7977		22.7977	22.7977		359,964.0965	359,964.0965	6.8993	6.5993	362,103.1831

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	189193	2.0403	17.4354	7.4193	0.1113		1.4097	1.4097		1.4097	1.4097		22,257.9787	22,257.9787	0.4266	0.4081	22,390.2467
Condo/Townhouse	466750	5.0336	43.0142	18.3039	0.2746		3.4777	3.4777		3.4777	3.4777		54,911.7365	54,911.7365	1.0525	1.0067	55,238.0495
Single Family Housing	2.40375e+006	25.9228	221.5223	94.2648	1.4140		17.9103	17.9103		17.9103	17.9103		282,794.3813	282,794.3813	5.4202	5.1846	284,474.8869
Total		**32.9967**	**281.9719**	**119.9880**	**1.7998**		**22.7977**	**22.7977**		**22.7977**	**22.7977**		**359,964.0965**	**359,964.0965**	**6.8993**	**6.5993**	**362,103.1831**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	189.193	2.0403	17.4354	7.4193	0.1113		1.4097	1.4097		1.4097	1.4097		22,257.9787	22,257.9787	0.4266	0.4081	22,390.2467
Condo/Townhouse	466.75	5.0336	43.0142	18.3039	0.2746		3.4777	3.4777		3.4777	3.4777		54,911.7365	54,911.7365	1.0525	1.0067	55,238.0495
Single Family Housing	2403.75	25.9228	221.5223	94.2648	1.4140		17.9103	17.9103		17.9103	17.9103		282,794.3813	282,794.3813	5.4202	5.1846	284,474.8869
Total		**32.9967**	**281.9719**	**119.9880**	**1.7998**		**22.7977**	**22.7977**		**22.7977**	**22.7977**		**359,964.0965**	**359,964.0965**	**6.8993**	**6.5993**	**362,103.1831**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066
Unmitigated	30,968.1842	529.8193	35,851.0083	52.7558		4,492.3116	4,492.3116		4,492.3116	4,492.3116	438,432.2903	206,850.2374	645,282.5277	9.3810	42.3710	658,143.6066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	98.1977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,225.8134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	29,548.1332	492.7553	32,639.9545	52.5855		4,474.4260	4,474.4260		4,474.4260	4,474.4260	438,432.2903	201,042.8824	639,475.1726	3.8533	42.3710	652,198.0602
Landscaping	96.0400	37.0639	3,211.0538	0.1703		17.8856	17.8856		17.8856	17.8856		5,807.3551	5,807.3551	5.5277		5,945.5464
Total	**30,968.1842**	**529.8193**	**35,851.0083**	**52.7558**		**4,492.3116**	**4,492.3116**		**4,492.3116**	**4,492.3116**	**438,432.2903**	**206,850.2374**	**645,282.5277**	**9.3810**	**42.3710**	**658,143.6066**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	98.1977					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,225.8134					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	29,548.1332	492.7553	32,639.9545	52.5855		4,474.4260	4,474.4260		4,474.4260	4,474.4260	438,432.2903	201,042.8824	639,475.1726	3.8533	42.3710	652,198.0602
Landscaping	96.0400	37.0639	3,211.0538	0.1703		17.8856	17.8856		17.8856	17.8856		5,807.3551	5,807.3551	5.5277		5,945.5464
Total	**30,968.1842**	**529.8193**	**35,851.0083**	**52.7558**		**4,492.3116**	**4,492.3116**		**4,492.3116**	**4,492.3116**	**438,432.2903**	**206,850.2374**	**645,282.5277**	**9.3810**	**42.3710**	**658,143.6066**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Redwood City EIR - 2020 - San Mateo County, Annual

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

Redwood City EIR - 2020

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	8,179.00	Dwelling Unit	215.24	8,179,000.00	19283
Condo/Townhouse	8,179.00	Dwelling Unit	511.19	8,179,000.00	19283
Single Family Housing	22,735.00	Dwelling Unit	7,381.49	40,923,000.00	69165

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per City estimates

Construction Phase - Proportionally adjusted for 2040 end date

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Grading -

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

Architectural Coating -

Vehicle Trips - Per VMT Summary for existing conditions from MIG

Woodstoves - No woodstoves

Area Coating - BAAQMD Regulation 8 Rule 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstructionPhase	NumDays	10,000.00	213.00
tblConstructionPhase	NumDays	6,000.00	128.00
tblConstructionPhase	NumDays	15,500.00	330.00
tblConstructionPhase	NumDays	155,000.00	3,294.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblGrading	AcresOfGrading	990.00	46,500.00
tblGrading	AcresOfGrading	192.00	9,000.00
tblLandUse	Population	23,392.00	19,283.00
tblLandUse	Population	23,392.00	19,283.00
tblLandUse	Population	65,022.00	69,165.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	9.54	24.22
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	8.55	24.22

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

tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	9.44	24.23
tblWoodstoves	NumberCatalytic	163.58	0.00
tblWoodstoves	NumberCatalytic	163.58	0.00
tblWoodstoves	NumberCatalytic	909.40	0.00
tblWoodstoves	NumberNoncatalytic	163.58	0.00
tblWoodstoves	NumberNoncatalytic	163.58	0.00
tblWoodstoves	NumberNoncatalytic	909.40	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.3085	2.9378	2.5599	5.1600e-003	5.2127	0.1361	5.3488	0.7529	0.1263	0.8792	0.0000	452.4467	452.4467	0.1271	3.0000e-004	455.7129
2024	0.4042	4.0340	3.2978	7.3200e-003	30.7256	0.1707	30.8963	3.8847	0.1571	4.0418	0.0000	643.2756	643.2756	0.2037	3.5000e-004	648.4730
2025	2.7089	14.8433	26.0249	0.1199	35.4453	0.2094	35.6547	5.6959	0.1954	5.8912	0.0000	11,448.4708	11,448.4708	0.6190	0.8518	11,717.7771
2026	5.5936	29.1658	53.8701	0.2616	24.0690	0.2861	24.3552	6.4874	0.2695	6.7569	0.0000	25,085.5774	25,085.5774	1.1258	1.9367	25,690.8580
2027	5.4047	28.6304	52.0932	0.2552	24.0694	0.2797	24.3491	6.4875	0.2635	6.7510	0.0000	24,493.5198	24,493.5198	1.1160	1.8898	25,084.5792
2028	5.2069	28.0850	50.4289	0.2483	23.9776	0.2722	24.2498	6.4628	0.2566	6.7194	0.0000	23,862.6022	23,862.6022	1.1064	1.8394	24,438.3918
2029	5.0464	27.6876	49.3266	0.2437	24.0702	0.2668	24.3370	6.4878	0.2516	6.7394	0.0000	23,435.3556	23,435.3556	1.1072	1.8023	24,000.1254
2030	4.8846	26.7232	48.2912	0.2393	24.0706	0.2116	24.2821	6.4880	0.2008	6.6888	0.0000	23,023.4263	23,023.4263	1.0470	1.7653	23,575.6442
2031	4.7327	26.4343	47.3831	0.2350	24.0709	0.2068	24.2777	6.4881	0.1964	6.6845	0.0000	22,621.4053	22,621.4053	1.0439	1.7324	23,163.7614
2032	4.6118	26.2809	46.7889	0.2321	24.1634	0.2030	24.3664	6.5130	0.1929	6.7060	0.0000	22,350.2191	22,350.2191	1.0455	1.7102	22,886.0058
2033	4.4534	25.8563	45.7746	0.2269	23.9792	0.1973	24.1765	6.4634	0.1876	6.6510	0.0000	21,860.8618	21,860.8618	1.0351	1.6715	22,384.8372
2034	4.3421	25.6660	45.1876	0.2239	23.9794	0.1936	24.1730	6.4635	0.1842	6.6477	0.0000	21,577.0290	21,577.0290	1.0330	1.6486	22,094.1422
2035	4.2412	25.4816	44.8476	0.2221	24.0719	0.1835	24.2554	6.4884	0.1743	6.6627	0.0000	21,404.8551	21,404.8551	1.0333	1.6343	21,917.6943
2036	4.2575	25.5792	45.0194	0.2229	24.1641	0.1842	24.3483	6.5133	0.1749	6.6882	0.0000	21,486.8660	21,486.8660	1.0372	1.6405	22,001.6702
2037	4.2412	25.4816	44.8476	0.2221	24.0719	0.1835	24.2554	6.4884	0.1743	6.6627	0.0000	21,404.8551	21,404.8551	1.0333	1.6343	21,917.6943
2038	0.9507	5.4922	10.4444	0.0464	4.7161	0.0556	4.7717	1.2712	0.0538	1.3249	0.0000	4,442.7167	4,442.7167	0.2118	0.3195	4,543.2187
2039	403.8962	0.4700	6.3273	0.0237	3.6784	0.0121	3.6905	0.9788	0.0114	0.9903	0.0000	2,169.2131	2,169.2131	0.0324	0.0459	2,183.6889
Maximum	**403.8962**	**29.1658**	**53.8701**	**0.2616**	**35.4453**	**0.2861**	**35.6547**	**6.5133**	**0.2695**	**6.7569**	**0.0000**	**25,085.5774**	**25,085.5774**	**1.1258**	**1.9367**	**25,690.8580**

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

2.1 Overall Construction

Mitigated Construction

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.3085	2.9378	2.5599	5.1600e-003	2.3545	0.1361	2.4905	0.3411	0.1263	0.4674	0.0000	452.4462	452.4462	0.1271	3.0000e-004	455.7124
2024	0.4042	4.0339	3.2978	7.3200e-003	13.8375	0.1707	14.0082	1.7511	0.1571	1.9081	0.0000	643.2748	643.2748	0.2037	3.5000e-004	648.4723
2025	2.7089	14.8433	26.0249	0.1199	21.6374	0.2094	21.8468	4.0960	0.1954	4.2913	0.0000	11,448.4702	11,448.4702	0.6190	0.8518	11,717.7765
2026	5.5936	29.1658	53.8701	0.2616	24.0690	0.2861	24.3552	6.4874	0.2695	6.7569	0.0000	25,085.5770	25,085.5770	1.1258	1.9367	25,690.8576
2027	5.4047	28.6304	52.0932	0.2552	24.0694	0.2797	24.3491	6.4875	0.2635	6.7510	0.0000	24,493.5195	24,493.5195	1.1160	1.8898	25,084.5788
2028	5.2069	28.0850	50.4289	0.2483	23.9776	0.2722	24.2498	6.4628	0.2566	6.7194	0.0000	23,862.6019	23,862.6019	1.1064	1.8394	24,438.3914
2029	5.0464	27.6876	49.3266	0.2437	24.0702	0.2668	24.3370	6.4878	0.2516	6.7394	0.0000	23,435.3553	23,435.3553	1.1072	1.8023	24,000.1251
2030	4.8846	26.7232	48.2912	0.2393	24.0706	0.2116	24.2821	6.4880	0.2008	6.6888	0.0000	23,023.4259	23,023.4259	1.0470	1.7653	23,575.6438
2031	4.7327	26.4343	47.3831	0.2350	24.0709	0.2068	24.2777	6.4881	0.1964	6.6845	0.0000	22,621.4049	22,621.4049	1.0439	1.7324	23,163.7610
2032	4.6118	26.2808	46.7889	0.2321	24.1634	0.2030	24.3664	6.5130	0.1929	6.7060	0.0000	22,350.2187	22,350.2187	1.0455	1.7102	22,886.0054
2033	4.4534	25.8563	45.7746	0.2269	23.9792	0.1973	24.1765	6.4634	0.1876	6.6510	0.0000	21,860.8614	21,860.8614	1.0351	1.6715	22,384.8368
2034	4.3421	25.6660	45.1876	0.2239	23.9794	0.1936	24.1730	6.4635	0.1842	6.6477	0.0000	21,577.0286	21,577.0286	1.0330	1.6486	22,094.1417
2035	4.2412	25.4816	44.8476	0.2221	24.0719	0.1835	24.2554	6.4884	0.1743	6.6627	0.0000	21,404.8547	21,404.8547	1.0333	1.6343	21,917.6939
2036	4.2575	25.5792	45.0194	0.2229	24.1641	0.1842	24.3483	6.5133	0.1749	6.6882	0.0000	21,486.8656	21,486.8656	1.0372	1.6405	22,001.6698
2037	4.2412	25.4816	44.8476	0.2221	24.0719	0.1835	24.2554	6.4884	0.1743	6.6627	0.0000	21,404.8547	21,404.8547	1.0333	1.6343	21,917.6939
2038	0.9507	5.4922	10.4444	0.0464	4.7161	0.0556	4.7717	1.2712	0.0538	1.3249	0.0000	4,442.7163	4,442.7163	0.2118	0.3195	4,543.2183
2039	403.8962	0.4700	6.3273	0.0237	3.6784	0.0121	3.6905	0.9788	0.0114	0.9903	0.0000	2,169.2131	2,169.2131	0.0324	0.0459	2,183.6888
Maximum	**403.8962**	**29.1658**	**53.8701**	**0.2616**	**24.1641**	**0.2861**	**24.3664**	**6.5133**	**0.2695**	**6.7569**	**0.0000**	**25,085.5770**	**25,085.5770**	**1.1258**	**1.9367**	**25,690.8576**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**9.10**	**0.00**	**9.03**	**4.58**	**0.00**	**4.43**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	0.7654	0.7654
2	**4-1-2023**	**6-30-2023**	0.7737	0.7737
3	**7-1-2023**	**9-30-2023**	0.7822	0.7822
4	**10-1-2023**	**12-31-2023**	0.9365	0.9365
5	**1-1-2024**	**3-31-2024**	0.9718	0.9718
6	**4-1-2024**	**6-30-2024**	1.1136	1.1136
7	**7-1-2024**	**9-30-2024**	1.1716	1.1716
8	**10-1-2024**	**12-31-2024**	1.1719	1.1719
9	**1-1-2025**	**3-31-2025**	0.9936	0.9936
10	**4-1-2025**	**6-30-2025**	1.0044	1.0044
11	**7-1-2025**	**9-30-2025**	6.3293	6.3293
12	**10-1-2025**	**12-31-2025**	9.2654	9.2654
13	**1-1-2026**	**3-31-2026**	8.8658	8.8658
14	**4-1-2026**	**6-30-2026**	8.3726	8.3726
15	**7-1-2026**	**9-30-2026**	8.4646	8.4646
16	**10-1-2026**	**12-31-2026**	9.0628	9.0628
17	**1-1-2027**	**3-31-2027**	8.6814	8.6814
18	**4-1-2027**	**6-30-2027**	8.1977	8.1977
19	**7-1-2027**	**9-30-2027**	8.2878	8.2878
20	**10-1-2027**	**12-31-2027**	8.8743	8.8743
21	**1-1-2028**	**3-31-2028**	8.6192	8.6192
22	**4-1-2028**	**6-30-2028**	8.0489	8.0489
23	**7-1-2028**	**9-30-2028**	8.1374	8.1374
24	**10-1-2028**	**12-31-2028**	8.7139	8.7139

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

25	**1-1-2029**	**3-31-2029**	8.3498	8.3498
26	**4-1-2029**	**6-30-2029**	7.8827	7.8827
27	**7-1-2029**	**9-30-2029**	7.9694	7.9694
28	**10-1-2029**	**12-31-2029**	8.5353	8.5353
29	**1-1-2030**	**3-31-2030**	8.0680	8.0680
30	**4-1-2030**	**6-30-2030**	7.6054	7.6054
31	**7-1-2030**	**9-30-2030**	7.6889	7.6889
32	**10-1-2030**	**12-31-2030**	8.2473	8.2473
33	**1-1-2031**	**3-31-2031**	7.9554	7.9554
34	**4-1-2031**	**6-30-2031**	7.4978	7.4978
35	**7-1-2031**	**9-30-2031**	7.5802	7.5802
36	**10-1-2031**	**12-31-2031**	8.1322	8.1322
37	**1-1-2032**	**3-31-2032**	7.9426	7.9426
38	**4-1-2032**	**6-30-2032**	7.4018	7.4018
39	**7-1-2032**	**9-30-2032**	7.4832	7.4832
40	**10-1-2032**	**12-31-2032**	8.0299	8.0299
41	**1-1-2033**	**3-31-2033**	7.7667	7.7667
42	**4-1-2033**	**6-30-2033**	7.3163	7.3163
43	**7-1-2033**	**9-30-2033**	7.3967	7.3967
44	**10-1-2033**	**12-31-2033**	7.9393	7.9393
45	**1-1-2034**	**3-31-2034**	7.6896	7.6896
46	**4-1-2034**	**6-30-2034**	7.2418	7.2418
47	**7-1-2034**	**9-30-2034**	7.3214	7.3214
48	**10-1-2034**	**12-31-2034**	7.8605	7.8605
49	**1-1-2035**	**3-31-2035**	7.5887	7.5887
50	**4-1-2035**	**6-30-2035**	7.1426	7.1426
51	**7-1-2035**	**9-30-2035**	7.2211	7.2211
52	**10-1-2035**	**12-31-2035**	7.7573	7.7573
53	**1-1-2036**	**3-31-2036**	7.6730	7.6730

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

54	**4-1-2036**	**6-30-2036**	7.1426	7.1426
55	**7-1-2036**	**9-30-2036**	7.2211	7.2211
56	**10-1-2036**	**12-31-2036**	7.7573	7.7573
57	**1-1-2037**	**3-31-2037**	7.5887	7.5887
58	**4-1-2037**	**6-30-2037**	7.1426	7.1426
59	**7-1-2037**	**9-30-2037**	7.2211	7.2211
60	**10-1-2037**	**12-31-2037**	7.7573	7.7573
61	**1-1-2038**	**3-31-2038**	6.0277	6.0277
62	**4-1-2038**	**6-30-2038**	0.1965	0.1965
63	**7-1-2038**	**9-30-2038**	0.1987	0.1987
64	**10-1-2038**	**12-31-2038**	0.1988	0.1988
65	**1-1-2039**	**3-31-2039**	69.2030	69.2030
66	**4-1-2039**	**6-30-2039**	112.2905	112.2905
67	**7-1-2039**	**9-30-2039**	113.5245	113.5245
		Highest	113.5245	113.5245

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	414.8587	6.0804	470.7994	0.3082		26.5323	26.5323		26.5323	26.5323	2,215.4067	1,490.0245	3,705.4312	0.4708	0.2141	3,781.0030
Energy	6.0219	51.4599	21.8978	0.3285		4.1606	4.1606		4.1606	4.1606	0.0000	82,628.7263	82,628.7263	4.8685	1.5443	83,210.6279
Mobile	176.3335	147.4726	1,722.9107	3.3596	466.9153	1.5481	468.4634	124.7808	1.4449	126.2257	0.0000	309,989.8960	309,989.8960	21.4033	14.2923	314,784.0696
Waste						0.0000	0.0000		0.0000	0.0000	7,424.1874	0.0000	7,424.1874	438.7569	0.0000	18,393.1101
Water						0.0000	0.0000		0.0000	0.0000	808.0666	1,795.1770	2,603.2437	83.2866	1.9949	5,279.8961
Total	**597.2142**	**205.0129**	**2,215.6079**	**3.9963**	**466.9153**	**32.2409**	**499.1562**	**124.7808**	**32.1377**	**156.9185**	**10,447.6607**	**395,903.8238**	**406,351.4845**	**548.7861**	**18.0455**	**425,448.7067**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	414.8587	6.0804	470.7994	0.3082		26.5323	26.5323		26.5323	26.5323	2,215.4067	1,490.0245	3,705.4312	0.4708	0.2141	3,781.0030
Energy	6.0219	51.4599	21.8978	0.3285		4.1606	4.1606		4.1606	4.1606	0.0000	82,628.7263	82,628.7263	4.8685	1.5443	83,210.6279
Mobile	176.3335	147.4726	1,722.9107	3.3596	466.9153	1.5481	468.4634	124.7808	1.4449	126.2257	0.0000	309,989.8960	309,989.8960	21.4033	14.2923	314,784.0696
Waste						0.0000	0.0000		0.0000	0.0000	7,424.1874	0.0000	7,424.1874	438.7569	0.0000	18,393.1101
Water						0.0000	0.0000		0.0000	0.0000	808.0666	1,795.1770	2,603.2437	83.2866	1.9949	5,279.8961
Total	**597.2142**	**205.0129**	**2,215.6079**	**3.9963**	**466.9153**	**32.2409**	**499.1562**	**124.7808**	**32.1377**	**156.9185**	**10,447.6607**	**395,903.8238**	**406,351.4845**	**548.7861**	**18.0455**	**425,448.7067**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	10/25/2023	5	213	
2	Site Preparation	Site Preparation	10/26/2023	4/22/2024	5	128	
3	Grading	Grading	4/23/2024	7/28/2025	5	330	

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

4	Building Construction	Building Construction	7/29/2025	3/12/2038	5	3294	
5	Paving	Paving	3/13/2038	2/3/2039	5	234	
6	Architectural Coating	Architectural Coating	2/4/2039	12/28/2039	5	234	

Acres of Grading (Site Preparation Phase): 9000

Acres of Grading (Grading Phase): 46500

Acres of Paving: 0

Residential Indoor: 115,994,025; Residential Outdoor: 38,664,675; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36

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

Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	19,962.00	4,179.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3,992.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2417	2.2881	2.0920	4.1400e-003		0.1062	0.1062		0.0988	0.0988	0.0000	362.0155	362.0155	0.1014	0.0000	364.5501
Total	**0.2417**	**2.2881**	**2.0920**	**4.1400e-003**		**0.1062**	**0.1062**		**0.0988**	**0.0988**	**0.0000**	**362.0155**	**362.0155**	**0.1014**	**0.0000**	**364.5501**

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

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4400e-003	2.2500e-003	0.0310	1.0000e-004	0.0126	6.0000e-005	0.0126	3.3500e-003	6.0000e-005	3.4000e-003	0.0000	9.3471	9.3471	2.4000e-004	2.3000e-004	9.4229
Total	**3.4400e-003**	**2.2500e-003**	**0.0310**	**1.0000e-004**	**0.0126**	**6.0000e-005**	**0.0126**	**3.3500e-003**	**6.0000e-005**	**3.4000e-003**	**0.0000**	**9.3471**	**9.3471**	**2.4000e-004**	**2.3000e-004**	**9.4229**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2417	2.2881	2.0920	4.1400e-003		0.1062	0.1062		0.0988	0.0988	0.0000	362.0151	362.0151	0.1014	0.0000	364.5497
Total	**0.2417**	**2.2881**	**2.0920**	**4.1400e-003**		**0.1062**	**0.1062**		**0.0988**	**0.0988**	**0.0000**	**362.0151**	**362.0151**	**0.1014**	**0.0000**	**364.5497**

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

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4400e-003	2.2500e-003	0.0310	1.0000e-004	0.0126	6.0000e-005	0.0126	3.3500e-003	6.0000e-005	3.4000e-003	0.0000	9.3471	9.3471	2.4000e-004	2.3000e-004	9.4229
Total	**3.4400e-003**	**2.2500e-003**	**0.0310**	**1.0000e-004**	**0.0126**	**6.0000e-005**	**0.0126**	**3.3500e-003**	**6.0000e-005**	**3.4000e-003**	**0.0000**	**9.3471**	**9.3471**	**2.4000e-004**	**2.3000e-004**	**9.4229**

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.1968	0.0000	5.1968	0.7487	0.0000	0.7487	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0625	0.6468	0.4287	8.9000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	78.6091	78.6091	0.0254	0.0000	79.2447
Total	**0.0625**	**0.6468**	**0.4287**	**8.9000e-004**	**5.1968**	**0.0298**	**5.2266**	**0.7487**	**0.0274**	**0.7760**	**0.0000**	**78.6091**	**78.6091**	**0.0254**	**0.0000**	**79.2447**

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

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.1000e-004	6.0000e-004	8.2000e-003	3.0000e-005	3.3300e-003	2.0000e-005	3.3500e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.4750	2.4750	6.0000e-005	6.0000e-005	2.4951
Total	**9.1000e-004**	**6.0000e-004**	**8.2000e-003**	**3.0000e-005**	**3.3300e-003**	**2.0000e-005**	**3.3500e-003**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**2.4750**	**2.4750**	**6.0000e-005**	**6.0000e-005**	**2.4951**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3386	0.0000	2.3386	0.3369	0.0000	0.3369	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0625	0.6468	0.4287	8.9000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	78.6090	78.6090	0.0254	0.0000	79.2446
Total	**0.0625**	**0.6468**	**0.4287**	**8.9000e-004**	**2.3386**	**0.0298**	**2.3683**	**0.3369**	**0.0274**	**0.3643**	**0.0000**	**78.6090**	**78.6090**	**0.0254**	**0.0000**	**79.2446**

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

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.1000e-004	6.0000e-004	8.2000e-003	3.0000e-005	3.3300e-003	2.0000e-005	3.3500e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.4750	2.4750	6.0000e-005	6.0000e-005	2.4951
Total	**9.1000e-004**	**6.0000e-004**	**8.2000e-003**	**3.0000e-005**	**3.3300e-003**	**2.0000e-005**	**3.3500e-003**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**0.0000**	**2.4750**	**2.4750**	**6.0000e-005**	**6.0000e-005**	**2.4951**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5039	0.0000	5.5039	0.9175	0.0000	0.9175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1078	1.1006	0.7426	1.5400e-003		0.0498	0.0498		0.0458	0.0458	0.0000	135.5011	135.5011	0.0438	0.0000	136.5967
Total	**0.1078**	**1.1006**	**0.7426**	**1.5400e-003**	**5.5039**	**0.0498**	**5.5537**	**0.9175**	**0.0458**	**0.9633**	**0.0000**	**135.5011**	**135.5011**	**0.0438**	**0.0000**	**136.5967**

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

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	9.2000e-004	0.0133	5.0000e-005	5.7400e-003	3.0000e-005	5.7700e-003	1.5300e-003	2.0000e-005	1.5500e-003	0.0000	4.1267	4.1267	1.0000e-004	1.0000e-004	4.1590
Total	**1.4900e-003**	**9.2000e-004**	**0.0133**	**5.0000e-005**	**5.7400e-003**	**3.0000e-005**	**5.7700e-003**	**1.5300e-003**	**2.0000e-005**	**1.5500e-003**	**0.0000**	**4.1267**	**4.1267**	**1.0000e-004**	**1.0000e-004**	**4.1590**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4768	0.0000	2.4768	0.4129	0.0000	0.4129	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1078	1.1006	0.7426	1.5400e-003		0.0498	0.0498		0.0458	0.0458	0.0000	135.5010	135.5010	0.0438	0.0000	136.5965
Total	**0.1078**	**1.1006**	**0.7426**	**1.5400e-003**	**2.4768**	**0.0498**	**2.5266**	**0.4129**	**0.0458**	**0.4587**	**0.0000**	**135.5010**	**135.5010**	**0.0438**	**0.0000**	**136.5965**

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

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	9.2000e-004	0.0133	5.0000e-005	5.7400e-003	3.0000e-005	5.7700e-003	1.5300e-003	2.0000e-005	1.5500e-003	0.0000	4.1267	4.1267	1.0000e-004	1.0000e-004	4.1590
Total	**1.4900e-003**	**9.2000e-004**	**0.0133**	**5.0000e-005**	**5.7400e-003**	**3.0000e-005**	**5.7700e-003**	**1.5300e-003**	**2.0000e-005**	**1.5500e-003**	**0.0000**	**4.1267**	**4.1267**	**1.0000e-004**	**1.0000e-004**	**4.1590**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					25.2016	0.0000	25.2016	2.9619	0.0000	2.9619	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2912	2.9301	2.5089	5.6200e-003		0.1209	0.1209		0.1112	0.1112	0.0000	493.4017	493.4017	0.1596	0.0000	497.3911
Total	**0.2912**	**2.9301**	**2.5089**	**5.6200e-003**	**25.2016**	**0.1209**	**25.3225**	**2.9619**	**0.1112**	**3.0731**	**0.0000**	**493.4017**	**493.4017**	**0.1596**	**0.0000**	**497.3911**

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

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-003	2.2800e-003	0.0330	1.1000e-004	0.0143	7.0000e-005	0.0143	3.7900e-003	6.0000e-005	3.8500e-003	0.0000	10.2461	10.2461	2.4000e-004	2.5000e-004	10.3262
Total	**3.7000e-003**	**2.2800e-003**	**0.0330**	**1.1000e-004**	**0.0143**	**7.0000e-005**	**0.0143**	**3.7900e-003**	**6.0000e-005**	**3.8500e-003**	**0.0000**	**10.2461**	**10.2461**	**2.4000e-004**	**2.5000e-004**	**10.3262**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					11.3407	0.0000	11.3407	1.3329	0.0000	1.3329	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2912	2.9301	2.5089	5.6200e-003		0.1209	0.1209		0.1112	0.1112	0.0000	493.4011	493.4011	0.1596	0.0000	497.3905
Total	**0.2912**	**2.9301**	**2.5089**	**5.6200e-003**	**11.3407**	**0.1209**	**11.4616**	**1.3329**	**0.1112**	**1.4441**	**0.0000**	**493.4011**	**493.4011**	**0.1596**	**0.0000**	**497.3905**

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

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-003	2.2800e-003	0.0330	1.1000e-004	0.0143	7.0000e-005	0.0143	3.7900e-003	6.0000e-005	3.8500e-003	0.0000	10.2461	10.2461	2.4000e-004	2.5000e-004	10.3262
Total	**3.7000e-003**	**2.2800e-003**	**0.0330**	**1.1000e-004**	**0.0143**	**7.0000e-005**	**0.0143**	**3.7900e-003**	**6.0000e-005**	**3.8500e-003**	**0.0000**	**10.2461**	**10.2461**	**2.4000e-004**	**2.5000e-004**	**10.3262**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					25.1053	0.0000	25.1053	2.9090	0.0000	2.9090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2161	2.0818	1.9617	4.6200e-003		0.0843	0.0843		0.0775	0.0775	0.0000	406.0713	406.0713	0.1313	0.0000	409.3546
Total	**0.2161**	**2.0818**	**1.9617**	**4.6200e-003**	**25.1053**	**0.0843**	**25.1895**	**2.9090**	**0.0775**	**2.9865**	**0.0000**	**406.0713**	**406.0713**	**0.1313**	**0.0000**	**409.3546**

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

3.4 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-003	1.7000e-003	0.0256	9.0000e-005	0.0117	5.0000e-005	0.0118	3.1200e-003	5.0000e-005	3.1700e-003	0.0000	8.1527	8.1527	1.8000e-004	1.9000e-004	8.2146
Total	**2.9000e-003**	**1.7000e-003**	**0.0256**	**9.0000e-005**	**0.0117**	**5.0000e-005**	**0.0118**	**3.1200e-003**	**5.0000e-005**	**3.1700e-003**	**0.0000**	**8.1527**	**8.1527**	**1.8000e-004**	**1.9000e-004**	**8.2146**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					11.2974	0.0000	11.2974	1.3090	0.0000	1.3090	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2161	2.0817	1.9617	4.6200e-003		0.0843	0.0843		0.0775	0.0775	0.0000	406.0708	406.0708	0.1313	0.0000	409.3541
Total	**0.2161**	**2.0817**	**1.9617**	**4.6200e-003**	**11.2974**	**0.0843**	**11.3816**	**1.3090**	**0.0775**	**1.3865**	**0.0000**	**406.0708**	**406.0708**	**0.1313**	**0.0000**	**409.3541**

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

3.4 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-003	1.7000e-003	0.0256	9.0000e-005	0.0117	5.0000e-005	0.0118	3.1200e-003	5.0000e-005	3.1700e-003	0.0000	8.1527	8.1527	1.8000e-004	1.9000e-004	8.2146
Total	**2.9000e-003**	**1.7000e-003**	**0.0256**	**9.0000e-005**	**0.0117**	**5.0000e-005**	**0.0118**	**3.1200e-003**	**5.0000e-005**	**3.1700e-003**	**0.0000**	**8.1527**	**8.1527**	**1.8000e-004**	**1.9000e-004**	**8.2146**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0766	0.6983	0.9007	1.5100e-003		0.0295	0.0295		0.0278	0.0278	0.0000	129.8749	129.8749	0.0305	0.0000	130.6381
Total	**0.0766**	**0.6983**	**0.9007**	**1.5100e-003**		**0.0295**	**0.0295**		**0.0278**	**0.0278**	**0.0000**	**129.8749**	**129.8749**	**0.0305**	**0.0000**	**130.6381**

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

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2341	10.7836	3.9363	0.0470	1.5279	0.0569	1.5848	0.4420	0.0545	0.4964	0.0000	4,787.7879	4,787.7879	0.3194	0.7074	5,006.5696
Worker	2.1792	1.2780	19.2006	0.0667	8.8004	0.0386	8.8390	2.3419	0.0356	2.3774	0.0000	6,116.5840	6,116.5840	0.1375	0.1442	6,163.0002
Total	**2.4133**	**12.0615**	**23.1369**	**0.1137**	**10.3283**	**0.0956**	**10.4239**	**2.7838**	**0.0900**	**2.8738**	**0.0000**	**10,904.3719**	**10,904.3719**	**0.4569**	**0.8516**	**11,169.5698**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0766	0.6983	0.9007	1.5100e-003		0.0295	0.0295		0.0278	0.0278	0.0000	129.8747	129.8747	0.0305	0.0000	130.6380
Total	**0.0766**	**0.6983**	**0.9007**	**1.5100e-003**		**0.0295**	**0.0295**		**0.0278**	**0.0278**	**0.0000**	**129.8747**	**129.8747**	**0.0305**	**0.0000**	**130.6380**

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

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2341	10.7836	3.9363	0.0470	1.5279	0.0569	1.5848	0.4420	0.0545	0.4964	0.0000	4,787.7879	4,787.7879	0.3194	0.7074	5,006.5696
Worker	2.1792	1.2780	19.2006	0.0667	8.8004	0.0386	8.8390	2.3419	0.0356	2.3774	0.0000	6,116.5840	6,116.5840	0.1375	0.1442	6,163.0002
Total	**2.4133**	**12.0615**	**23.1369**	**0.1137**	**10.3283**	**0.0956**	**10.4239**	**2.7838**	**0.0900**	**2.8738**	**0.0000**	**10,904.3719**	**10,904.3719**	**0.4569**	**0.8516**	**11,169.5698**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5324	24.8036	9.2062	0.1071	3.5610	0.1319	3.6928	1.0301	0.1261	1.1562	0.0000	10,940.3674	10,940.3674	0.7610	1.6175	11,441.4028
Worker	4.8828	2.7349	42.5649	0.1510	20.5081	0.0854	20.5935	5.4574	0.0786	5.5359	0.0000	13,842.5551	13,842.5551	0.2937	0.3192	13,945.0217
Total	**5.4152**	**27.5385**	**51.7711**	**0.2580**	**24.0690**	**0.2173**	**24.2863**	**6.4874**	**0.2047**	**6.6921**	**0.0000**	**24,782.9225**	**24,782.9225**	**1.0547**	**1.9367**	**25,386.4245**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5324	24.8036	9.2062	0.1071	3.5610	0.1319	3.6928	1.0301	0.1261	1.1562	0.0000	10,940.3674	10,940.3674	0.7610	1.6175	11,441.4028
Worker	4.8828	2.7349	42.5649	0.1510	20.5081	0.0854	20.5935	5.4574	0.0786	5.5359	0.0000	13,842.5551	13,842.5551	0.2937	0.3192	13,945.0217
Total	**5.4152**	**27.5385**	**51.7711**	**0.2580**	**24.0690**	**0.2173**	**24.2863**	**6.4874**	**0.2047**	**6.6921**	**0.0000**	**24,782.9225**	**24,782.9225**	**1.0547**	**1.9367**	**25,386.4245**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5209	24.4668	9.2312	0.1046	3.5613	0.1308	3.6921	1.0302	0.1251	1.1553	0.0000	10,707.0735	10,707.0735	0.7735	1.5843	11,198.5172
Worker	4.7054	2.5362	40.7629	0.1470	20.5081	0.0800	20.5881	5.4574	0.0736	5.5310	0.0000	13,483.7915	13,483.7915	0.2713	0.3056	13,581.6285
Total	**5.2263**	**27.0031**	**49.9941**	**0.2516**	**24.0694**	**0.2108**	**24.2802**	**6.4875**	**0.1988**	**6.6863**	**0.0000**	**24,190.8650**	**24,190.8650**	**1.0449**	**1.8898**	**24,780.1457**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5209	24.4668	9.2312	0.1046	3.5613	0.1308	3.6921	1.0302	0.1251	1.1553	0.0000	10,707.0735	10,707.0735	0.7735	1.5843	11,198.5172
Worker	4.7054	2.5362	40.7629	0.1470	20.5081	0.0800	20.5881	5.4574	0.0736	5.5310	0.0000	13,483.7915	13,483.7915	0.2713	0.3056	13,581.6285
Total	**5.2263**	**27.0031**	**49.9941**	**0.2516**	**24.0694**	**0.2108**	**24.2802**	**6.4875**	**0.1988**	**6.6863**	**0.0000**	**24,190.8650**	**24,190.8650**	**1.0449**	**1.8898**	**24,780.1457**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4953**	**301.4953**	**0.0709**	**0.0000**	**303.2671**

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

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5107	24.1013	9.2484	0.1018	3.5481	0.1294	3.6775	1.0264	0.1238	1.1502	0.0000	10,445.5723	10,445.5723	0.7845	1.5462	10,925.9564
Worker	4.5184	2.3627	39.0895	0.1430	20.4295	0.0742	20.5037	5.4364	0.0683	5.5047	0.0000	13,115.5346	13,115.5346	0.2510	0.2932	13,209.1683
Total	**5.0291**	**26.4640**	**48.3379**	**0.2448**	**23.9776**	**0.2036**	**24.1812**	**6.4628**	**0.1920**	**6.6549**	**0.0000**	**23,561.1069**	**23,561.1069**	**1.0355**	**1.8394**	**24,135.1247**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1778	1.6211	2.0910	3.5000e-003		0.0686	0.0686		0.0645	0.0645	0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
Total	**0.1778**	**1.6211**	**2.0910**	**3.5000e-003**		**0.0686**	**0.0686**		**0.0645**	**0.0645**	**0.0000**	**301.4949**	**301.4949**	**0.0709**	**0.0000**	**303.2667**

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

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5107	24.1013	9.2484	0.1018	3.5481	0.1294	3.6775	1.0264	0.1238	1.1502	0.0000	10,445.5723	10,445.5723	0.7845	1.5462	10,925.9564
Worker	4.5184	2.3627	39.0895	0.1430	20.4295	0.0742	20.5037	5.4364	0.0683	5.5047	0.0000	13,115.5346	13,115.5346	0.2510	0.2932	13,209.1683
Total	**5.0291**	**26.4640**	**48.3379**	**0.2448**	**23.9776**	**0.2036**	**24.1812**	**6.4628**	**0.1920**	**6.6549**	**0.0000**	**23,561.1069**	**23,561.1069**	**1.0355**	**1.8394**	**24,135.1247**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

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

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5048	23.8297	9.3331	0.0997	3.5621	0.1284	3.6905	1.0305	0.1228	1.1533	0.0000	10,249.2916	10,249.2916	0.8012	1.5176	10,721.5514
Worker	4.3632	2.2307	37.8945	0.1405	20.5081	0.0696	20.5777	5.4574	0.0640	5.5214	0.0000	12,883.4091	12,883.4091	0.2348	0.2848	12,974.1405
Total	**4.8680**	**26.0603**	**47.2276**	**0.2402**	**24.0702**	**0.1980**	**24.2682**	**6.4878**	**0.1868**	**6.6747**	**0.0000**	**23,132.7008**	**23,132.7008**	**1.0360**	**1.8023**	**23,695.6919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

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

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5048	23.8297	9.3331	0.0997	3.5621	0.1284	3.6905	1.0305	0.1228	1.1533	0.0000	10,249.2916	10,249.2916	0.8012	1.5176	10,721.5514
Worker	4.3632	2.2307	37.8945	0.1405	20.5081	0.0696	20.5777	5.4574	0.0640	5.5214	0.0000	12,883.4091	12,883.4091	0.2348	0.2848	12,974.1405
Total	**4.8680**	**26.0603**	**47.2276**	**0.2402**	**24.0702**	**0.1980**	**24.2682**	**6.4878**	**0.1868**	**6.6747**	**0.0000**	**23,132.7008**	**23,132.7008**	**1.0360**	**1.8023**	**23,695.6919**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0336	343.0336	0.0138	0.0000	343.3777
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0336**	**343.0336**	**0.0138**	**0.0000**	**343.3777**

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

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4986	23.5683	9.3924	0.0975	3.5625	0.1270	3.6895	1.0306	0.1215	1.1521	0.0000	10,046.8099	10,046.8099	0.8132	1.4881	10,510.5912
Worker	4.2152	2.1195	36.7903	0.1378	20.5081	0.0652	20.5733	5.4574	0.0600	5.5174	0.0000	12,633.5828	12,633.5828	0.2200	0.2772	12,721.6753
Total	**4.7138**	**25.6877**	**46.1827**	**0.2353**	**24.0706**	**0.1922**	**24.2628**	**6.4880**	**0.1815**	**6.6695**	**0.0000**	**22,680.3926**	**22,680.3926**	**1.0332**	**1.7652**	**23,232.2665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0332	343.0332	0.0138	0.0000	343.3773
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0332**	**343.0332**	**0.0138**	**0.0000**	**343.3773**

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

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4986	23.5683	9.3924	0.0975	3.5625	0.1270	3.6895	1.0306	0.1215	1.1521	0.0000	10,046.8099	10,046.8099	0.8132	1.4881	10,510.5912
Worker	4.2152	2.1195	36.7903	0.1378	20.5081	0.0652	20.5733	5.4574	0.0600	5.5174	0.0000	12,633.5828	12,633.5828	0.2200	0.2772	12,721.6753
Total	**4.7138**	**25.6877**	**46.1827**	**0.2353**	**24.0706**	**0.1922**	**24.2628**	**6.4880**	**0.1815**	**6.6695**	**0.0000**	**22,680.3926**	**22,680.3926**	**1.0332**	**1.7652**	**23,232.2665**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0336	343.0336	0.0138	0.0000	343.3777
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0336**	**343.0336**	**0.0138**	**0.0000**	**343.3777**

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

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4947	23.3743	9.4554	0.0956	3.5628	0.1262	3.6891	1.0307	0.1208	1.1515	0.0000	9,865.8918	9,865.8918	0.8232	1.4616	10,322.0345
Worker	4.0671	2.0245	35.8192	0.1354	20.5081	0.0612	20.5693	5.4574	0.0563	5.5137	0.0000	12,412.4799	12,412.4799	0.2069	0.2708	12,498.3493
Total	**4.5618**	**25.3988**	**45.2746**	**0.2310**	**24.0709**	**0.1875**	**24.2584**	**6.4881**	**0.1771**	**6.6652**	**0.0000**	**22,278.3717**	**22,278.3717**	**1.0301**	**1.7324**	**22,820.3837**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1708	1.0355	2.1085	4.0400e-003		0.0193	0.0193		0.0193	0.0193	0.0000	343.0332	343.0332	0.0138	0.0000	343.3773
Total	**0.1708**	**1.0355**	**2.1085**	**4.0400e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**343.0332**	**343.0332**	**0.0138**	**0.0000**	**343.3773**

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

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4947	23.3743	9.4554	0.0956	3.5628	0.1262	3.6891	1.0307	0.1208	1.1515	0.0000	9,865.8918	9,865.8918	0.8232	1.4616	10,322.0345
Worker	4.0671	2.0245	35.8192	0.1354	20.5081	0.0612	20.5693	5.4574	0.0563	5.5137	0.0000	12,412.4799	12,412.4799	0.2069	0.2708	12,498.3493
Total	**4.5618**	**25.3988**	**45.2746**	**0.2310**	**24.0709**	**0.1875**	**24.2584**	**6.4881**	**0.1771**	**6.6652**	**0.0000**	**22,278.3717**	**22,278.3717**	**1.0301**	**1.7324**	**22,820.3837**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3479	344.3479	0.0138	0.0000	344.6933
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3479**	**344.3479**	**0.0138**	**0.0000**	**344.6933**

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

3.5 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4938	23.2861	9.5585	0.0943	3.5767	0.1259	3.7026	1.0348	0.1204	1.1551	0.0000	9,741.6094	9,741.6094	0.8355	1.4436	10,192.6797
Worker	3.9465	1.9553	35.1138	0.1337	20.5867	0.0578	20.6444	5.4783	0.0532	5.5314	0.0000	12,264.2618	12,264.2618	0.1961	0.2667	12,348.6329
Total	**4.4403**	**25.2414**	**44.6723**	**0.2280**	**24.1634**	**0.1836**	**24.3470**	**6.5130**	**0.1735**	**6.6866**	**0.0000**	**22,005.8712**	**22,005.8712**	**1.0317**	**1.7102**	**22,541.3125**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1715	1.0394	2.1166	4.0600e-003		0.0194	0.0194		0.0194	0.0194	0.0000	344.3475	344.3475	0.0138	0.0000	344.6929
Total	**0.1715**	**1.0394**	**2.1166**	**4.0600e-003**		**0.0194**	**0.0194**		**0.0194**	**0.0194**	**0.0000**	**344.3475**	**344.3475**	**0.0138**	**0.0000**	**344.6929**

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

3.5 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4938	23.2861	9.5585	0.0943	3.5767	0.1259	3.7026	1.0348	0.1204	1.1551	0.0000	9,741.6094	9,741.6094	0.8355	1.4436	10,192.6797
Worker	3.9465	1.9553	35.1138	0.1337	20.5867	0.0578	20.6444	5.4783	0.0532	5.5314	0.0000	12,264.2618	12,264.2618	0.1961	0.2667	12,348.6329
Total	**4.4403**	**25.2414**	**44.6723**	**0.2280**	**24.1634**	**0.1836**	**24.3470**	**6.5130**	**0.1735**	**6.6866**	**0.0000**	**22,005.8712**	**22,005.8712**	**1.0317**	**1.7102**	**22,541.3125**

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7193	341.7193	0.0137	0.0000	342.0621
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7193**	**341.7193**	**0.0137**	**0.0000**	**342.0621**

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

3.5 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4885	22.9450	9.5519	0.0920	3.5497	0.1240	3.6737	1.0270	0.1186	1.1456	0.0000	9,518.9217	9,518.9217	0.8368	1.4109	9,960.2986
Worker	3.7947	1.8798	34.1223	0.1309	20.4295	0.0540	20.4835	5.4364	0.0497	5.4862	0.0000	12,000.2207	12,000.2207	0.1846	0.2605	12,082.4766
Total	**4.2832**	**24.8248**	**43.6742**	**0.2229**	**23.9792**	**0.1781**	**24.1572**	**6.4634**	**0.1684**	**6.6318**	**0.0000**	**21,519.1425**	**21,519.1425**	**1.0214**	**1.6715**	**22,042.7752**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7189	341.7189	0.0137	0.0000	342.0617
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7189**	**341.7189**	**0.0137**	**0.0000**	**342.0617**

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

3.5 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4885	22.9450	9.5519	0.0920	3.5497	0.1240	3.6737	1.0270	0.1186	1.1456	0.0000	9,518.9217	9,518.9217	0.8368	1.4109	9,960.2986
Worker	3.7947	1.8798	34.1223	0.1309	20.4295	0.0540	20.4835	5.4364	0.0497	5.4862	0.0000	12,000.2207	12,000.2207	0.1846	0.2605	12,082.4766
Total	**4.2832**	**24.8248**	**43.6742**	**0.2229**	**23.9792**	**0.1781**	**24.1572**	**6.4634**	**0.1684**	**6.6318**	**0.0000**	**21,519.1425**	**21,519.1425**	**1.0214**	**1.6715**	**22,042.7752**

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7193	341.7193	0.0137	0.0000	342.0621
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7193**	**341.7193**	**0.0137**	**0.0000**	**342.0621**

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

3.5 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4877	22.8041	9.6105	0.0906	3.5499	0.1234	3.6733	1.0271	0.1180	1.1450	0.0000	9,384.3967	9,384.3967	0.8436	1.3914	9,820.1244
Worker	3.6841	1.8304	33.4768	0.1292	20.4295	0.0510	20.4805	5.4364	0.0469	5.4834	0.0000	11,850.9130	11,850.9130	0.1757	0.2572	11,931.9557
Total	**4.1719**	**24.6345**	**43.0872**	**0.2199**	**23.9794**	**0.1744**	**24.1538**	**6.4635**	**0.1649**	**6.6284**	**0.0000**	**21,235.3097**	**21,235.3097**	**1.0193**	**1.6486**	**21,752.0801**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1702	1.0315	2.1004	4.0200e-003		0.0193	0.0193		0.0193	0.0193	0.0000	341.7189	341.7189	0.0137	0.0000	342.0617
Total	**0.1702**	**1.0315**	**2.1004**	**4.0200e-003**		**0.0193**	**0.0193**		**0.0193**	**0.0193**	**0.0000**	**341.7189**	**341.7189**	**0.0137**	**0.0000**	**342.0617**

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

3.5 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4877	22.8041	9.6105	0.0906	3.5499	0.1234	3.6733	1.0271	0.1180	1.1450	0.0000	9,384.3967	9,384.3967	0.8436	1.3914	9,820.1244
Worker	3.6841	1.8304	33.4768	0.1292	20.4295	0.0510	20.4805	5.4364	0.0469	5.4834	0.0000	11,850.9130	11,850.9130	0.1757	0.2572	11,931.9557
Total	**4.1719**	**24.6345**	**43.0872**	**0.2199**	**23.9794**	**0.1744**	**24.1538**	**6.4635**	**0.1649**	**6.6284**	**0.0000**	**21,235.3097**	**21,235.3097**	**1.0193**	**1.6486**	**21,752.0801**

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

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

3.5 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4893	22.7473	9.6965	0.0897	3.5638	0.1232	3.6870	1.0311	0.1179	1.1490	0.0000	9,295.5231	9,295.5231	0.8520	1.3786	9,727.6449
Worker	3.5932	1.7997	33.0477	0.1283	20.5081	0.0485	20.5566	5.4574	0.0446	5.5020	0.0000	11,766.2983	11,766.2983	0.1685	0.2557	11,846.6964
Total	**4.0824**	**24.5470**	**42.7442**	**0.2180**	**24.0719**	**0.1717**	**24.2436**	**6.4884**	**0.1625**	**6.6509**	**0.0000**	**21,061.8215**	**21,061.8215**	**1.0205**	**1.6343**	**21,574.3413**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

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

3.5 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4893	22.7473	9.6965	0.0897	3.5638	0.1232	3.6870	1.0311	0.1179	1.1490	0.0000	9,295.5231	9,295.5231	0.8520	1.3786	9,727.6449
Worker	3.5932	1.7997	33.0477	0.1283	20.5081	0.0485	20.5566	5.4574	0.0446	5.5020	0.0000	11,766.2983	11,766.2983	0.1685	0.2557	11,846.6964
Total	**4.0824**	**24.5470**	**42.7442**	**0.2180**	**24.0719**	**0.1717**	**24.2436**	**6.4884**	**0.1625**	**6.6509**	**0.0000**	**21,061.8215**	**21,061.8215**	**1.0205**	**1.6343**	**21,574.3413**

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	0.9381	2.1114	4.0600e-003		0.0118	0.0118		0.0118	0.0118	0.0000	344.3479	344.3479	0.0128	0.0000	344.6686
Total	**0.1594**	**0.9381**	**2.1114**	**4.0600e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**344.3479**	**344.3479**	**0.0128**	**0.0000**	**344.6686**

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

3.5 Building Construction - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4911	22.8345	9.7337	0.0901	3.5775	0.1237	3.7012	1.0350	0.1183	1.1534	0.0000	9,331.1381	9,331.1381	0.8553	1.3839	9,764.9156
Worker	3.6069	1.8066	33.1743	0.1288	20.5867	0.0487	20.6353	5.4783	0.0448	5.5230	0.0000	11,811.3799	11,811.3799	0.1691	0.2566	11,892.0860
Total	**4.0981**	**24.6411**	**42.9080**	**0.2189**	**24.1641**	**0.1724**	**24.3365**	**6.5133**	**0.1631**	**6.6764**	**0.0000**	**21,142.5181**	**21,142.5181**	**1.0244**	**1.6405**	**21,657.0016**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1594	0.9381	2.1114	4.0600e-003		0.0118	0.0118		0.0118	0.0118	0.0000	344.3475	344.3475	0.0128	0.0000	344.6682
Total	**0.1594**	**0.9381**	**2.1114**	**4.0600e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**344.3475**	**344.3475**	**0.0128**	**0.0000**	**344.6682**

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

3.5 Building Construction - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4911	22.8345	9.7337	0.0901	3.5775	0.1237	3.7012	1.0350	0.1183	1.1534	0.0000	9,331.1381	9,331.1381	0.8553	1.3839	9,764.9156
Worker	3.6069	1.8066	33.1743	0.1288	20.5867	0.0487	20.6353	5.4783	0.0448	5.5230	0.0000	11,811.3799	11,811.3799	0.1691	0.2566	11,892.0860
Total	**4.0981**	**24.6411**	**42.9080**	**0.2189**	**24.1641**	**0.1724**	**24.3365**	**6.5133**	**0.1631**	**6.6764**	**0.0000**	**21,142.5181**	**21,142.5181**	**1.0244**	**1.6405**	**21,657.0016**

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0336	343.0336	0.0128	0.0000	343.3530
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0336**	**343.0336**	**0.0128**	**0.0000**	**343.3530**

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

3.5 Building Construction - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4893	22.7473	9.6965	0.0897	3.5638	0.1232	3.6870	1.0311	0.1179	1.1490	0.0000	9,295.5231	9,295.5231	0.8520	1.3786	9,727.6449
Worker	3.5932	1.7997	33.0477	0.1283	20.5081	0.0485	20.5566	5.4574	0.0446	5.5020	0.0000	11,766.2983	11,766.2983	0.1685	0.2557	11,846.6964
Total	**4.0824**	**24.5470**	**42.7442**	**0.2180**	**24.0719**	**0.1717**	**24.2436**	**6.4884**	**0.1625**	**6.6509**	**0.0000**	**21,061.8215**	**21,061.8215**	**1.0205**	**1.6343**	**21,574.3413**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1588	0.9346	2.1034	4.0400e-003		0.0118	0.0118		0.0118	0.0118	0.0000	343.0332	343.0332	0.0128	0.0000	343.3526
Total	**0.1588**	**0.9346**	**2.1034**	**4.0400e-003**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**343.0332**	**343.0332**	**0.0128**	**0.0000**	**343.3526**

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

3.5 Building Construction - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4893	22.7473	9.6965	0.0897	3.5638	0.1232	3.6870	1.0311	0.1179	1.1490	0.0000	9,295.5231	9,295.5231	0.8520	1.3786	9,727.6449
Worker	3.5932	1.7997	33.0477	0.1283	20.5081	0.0485	20.5566	5.4574	0.0446	5.5020	0.0000	11,766.2983	11,766.2983	0.1685	0.2557	11,846.6964
Total	**4.0824**	**24.5470**	**42.7442**	**0.2180**	**24.0719**	**0.1717**	**24.2436**	**6.4884**	**0.1625**	**6.6509**	**0.0000**	**21,061.8215**	**21,061.8215**	**1.0205**	**1.6343**	**21,574.3413**

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0310	0.1826	0.4110	7.9000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	67.0296	67.0296	2.5000e-003	0.0000	67.0920
Total	**0.0310**	**0.1826**	**0.4110**	**7.9000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**67.0296**	**67.0296**	**2.5000e-003**	**0.0000**	**67.0920**

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

3.5 Building Construction - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0956	4.4449	1.8947	0.0175	0.6964	0.0241	0.7205	0.2015	0.0230	0.2245	0.0000	1,816.3666	1,816.3666	0.1665	0.2694	1,900.8042
Worker	0.7021	0.3517	6.4576	0.0251	4.0073	9.4700e-003	4.0168	1.0664	8.7100e-003	1.0751	0.0000	2,299.1617	2,299.1617	0.0329	0.0500	2,314.8717
Total	**0.7977**	**4.7965**	**8.3523**	**0.0426**	**4.7037**	**0.0336**	**4.7373**	**1.2679**	**0.0317**	**1.2996**	**0.0000**	**4,115.5283**	**4,115.5283**	**0.1994**	**0.3193**	**4,215.6759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0310	0.1826	0.4110	7.9000e-004		2.3100e-003	2.3100e-003		2.3100e-003	2.3100e-003	0.0000	67.0295	67.0295	2.5000e-003	0.0000	67.0919
Total	**0.0310**	**0.1826**	**0.4110**	**7.9000e-004**		**2.3100e-003**	**2.3100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**67.0295**	**67.0295**	**2.5000e-003**	**0.0000**	**67.0919**

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

3.5 Building Construction - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0956	4.4449	1.8947	0.0175	0.6964	0.0241	0.7205	0.2015	0.0230	0.2245	0.0000	1,816.3666	1,816.3666	0.1665	0.2694	1,900.8042
Worker	0.7021	0.3517	6.4576	0.0251	4.0073	9.4700e-003	4.0168	1.0664	8.7100e-003	1.0751	0.0000	2,299.1617	2,299.1617	0.0329	0.0500	2,314.8717
Total	**0.7977**	**4.7965**	**8.3523**	**0.0426**	**4.7037**	**0.0336**	**4.7373**	**1.2679**	**0.0317**	**1.2996**	**0.0000**	**4,115.5283**	**4,115.5283**	**0.1994**	**0.3193**	**4,215.6759**

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1198	0.5120	1.6611	2.9400e-003		0.0197	0.0197		0.0197	0.0197	0.0000	253.0449	253.0449	9.7400e-003	0.0000	253.2884
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1198**	**0.5120**	**1.6611**	**2.9400e-003**		**0.0197**	**0.0197**		**0.0197**	**0.0197**	**0.0000**	**253.0449**	**253.0449**	**9.7400e-003**	**0.0000**	**253.2884**

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

3.6 Paving - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	1.0900e-003	0.0200	8.0000e-005	0.0124	3.0000e-005	0.0124	3.3000e-003	3.0000e-005	3.3300e-003	0.0000	7.1139	7.1139	1.0000e-004	1.5000e-004	7.1625
Total	**2.1700e-003**	**1.0900e-003**	**0.0200**	**8.0000e-005**	**0.0124**	**3.0000e-005**	**0.0124**	**3.3000e-003**	**3.0000e-005**	**3.3300e-003**	**0.0000**	**7.1139**	**7.1139**	**1.0000e-004**	**1.5000e-004**	**7.1625**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1198	0.5120	1.6611	2.9400e-003		0.0197	0.0197		0.0197	0.0197	0.0000	253.0446	253.0446	9.7400e-003	0.0000	253.2881
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1198**	**0.5120**	**1.6611**	**2.9400e-003**		**0.0197**	**0.0197**		**0.0197**	**0.0197**	**0.0000**	**253.0446**	**253.0446**	**9.7400e-003**	**0.0000**	**253.2881**

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

3.6 Paving - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1700e-003	1.0900e-003	0.0200	8.0000e-005	0.0124	3.0000e-005	0.0124	3.3000e-003	3.0000e-005	3.3300e-003	0.0000	7.1139	7.1139	1.0000e-004	1.5000e-004	7.1625
Total	**2.1700e-003**	**1.0900e-003**	**0.0200**	**8.0000e-005**	**0.0124**	**3.0000e-005**	**0.0124**	**3.3000e-003**	**3.0000e-005**	**3.3300e-003**	**0.0000**	**7.1139**	**7.1139**	**1.0000e-004**	**1.5000e-004**	**7.1625**

3.6 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.0585	0.1898	3.4000e-004		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	28.9194	28.9194	1.1100e-003	0.0000	28.9472
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.0585**	**0.1898**	**3.4000e-004**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**28.9194**	**28.9194**	**1.1100e-003**	**0.0000**	**28.9472**

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

3.6 Paving - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.2000e-004	2.2800e-003	1.0000e-005	1.4200e-003	0.0000	1.4200e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.8130	0.8130	1.0000e-005	2.0000e-005	0.8186
Total	**2.5000e-004**	**1.2000e-004**	**2.2800e-003**	**1.0000e-005**	**1.4200e-003**	**0.0000**	**1.4200e-003**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**0.8130**	**0.8130**	**1.0000e-005**	**2.0000e-005**	**0.8186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.0585	0.1898	3.4000e-004		2.2500e-003	2.2500e-003		2.2500e-003	2.2500e-003	0.0000	28.9194	28.9194	1.1100e-003	0.0000	28.9472
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.0585**	**0.1898**	**3.4000e-004**		**2.2500e-003**	**2.2500e-003**		**2.2500e-003**	**2.2500e-003**	**0.0000**	**28.9194**	**28.9194**	**1.1100e-003**	**0.0000**	**28.9472**

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

3.6 Paving - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.2000e-004	2.2800e-003	1.0000e-005	1.4200e-003	0.0000	1.4200e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.8130	0.8130	1.0000e-005	2.0000e-005	0.8186
Total	**2.5000e-004**	**1.2000e-004**	**2.2800e-003**	**1.0000e-005**	**1.4200e-003**	**0.0000**	**1.4200e-003**	**3.8000e-004**	**0.0000**	**3.8000e-004**	**0.0000**	**0.8130**	**0.8130**	**1.0000e-005**	**2.0000e-005**	**0.8186**

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	403.2242					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0138	0.0887	0.2099	3.5000e-004		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	29.8731	29.8731	1.1000e-003	0.0000	29.9007
Total	**403.2380**	**0.0887**	**0.2099**	**3.5000e-004**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**29.8731**	**29.8731**	**1.1000e-003**	**0.0000**	**29.9007**

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

3.7 Architectural Coating - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.6442	0.3227	5.9252	0.0230	3.6769	8.6900e-003	3.6856	0.9785	8.0000e-003	0.9865	0.0000	2,109.6076	2,109.6076	0.0302	0.0458	2,124.0224
Total	**0.6442**	**0.3227**	**5.9252**	**0.0230**	**3.6769**	**8.6900e-003**	**3.6856**	**0.9785**	**8.0000e-003**	**0.9865**	**0.0000**	**2,109.6076**	**2,109.6076**	**0.0302**	**0.0458**	**2,124.0224**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	403.2242					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0138	0.0887	0.2099	3.5000e-004		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	29.8730	29.8730	1.1000e-003	0.0000	29.9006
Total	**403.2380**	**0.0887**	**0.2099**	**3.5000e-004**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**29.8730**	**29.8730**	**1.1000e-003**	**0.0000**	**29.9006**

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

3.7 Architectural Coating - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.6442	0.3227	5.9252	0.0230	3.6769	8.6900e-003	3.6856	0.9785	8.0000e-003	0.9865	0.0000	2,109.6076	2,109.6076	0.0302	0.0458	2,124.0224
Total	**0.6442**	**0.3227**	**5.9252**	**0.0230**	**3.6769**	**8.6900e-003**	**3.6856**	**0.9785**	**8.0000e-003**	**0.9865**	**0.0000**	**2,109.6076**	**2,109.6076**	**0.0302**	**0.0458**	**2,124.0224**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Redwood City EIR - 2020 - San Mateo County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	176.3335	147.4726	1,722.9107	3.3596	466.9153	1.5481	468.4634	124.7808	1.4449	126.2257	0.0000	309,989.8960	309,989.8960	21.4033	14.2923	314,784.0696
Unmitigated	176.3335	147.4726	1,722.9107	3.3596	466.9153	1.5481	468.4634	124.7808	1.4449	126.2257	0.0000	309,989.8960	309,989.8960	21.4033	14.2923	314,784.0696

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Condo/Townhouse	0.00	0.00	0.00		
Single Family Housing	550,869.05	550,641.70	550641.70	1,272,141,154	1,272,141,154
Total	550,869.05	550,641.70	550,641.70	1,272,141,154	1,272,141,154

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Condo/Townhouse	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

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

Single Family Housing	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	23,032.6331	23,032.6331	3.7262	0.4517	23,260.3849
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	23,032.6331	23,032.6331	3.7262	0.4517	23,260.3849
NaturalGas Mitigated	6.0219	51.4599	21.8978	0.3285		4.1606	4.1606		4.1606	4.1606	0.0000	59,596.0932	59,596.0932	1.1423	1.0926	59,950.2430
NaturalGas Unmitigated	6.0219	51.4599	21.8978	0.3285		4.1606	4.1606		4.1606	4.1606	0.0000	59,596.0932	59,596.0932	1.1423	1.0926	59,950.2430

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	6.90554e+007	0.3724	3.1820	1.3540	0.0203		0.2573	0.2573		0.2573	0.2573	0.0000	3,685.0580	3,685.0580	0.0706	0.0676	3,706.9565
Condo/Townhouse	1.70364e+008	0.9186	7.8501	3.3405	0.0501		0.6347	0.6347		0.6347	0.6347	0.0000	9,091.2538	9,091.2538	0.1743	0.1667	9,145.2786
Single Family Housing	8.7737e+008	4.7309	40.4278	17.2033	0.2581		3.2686	3.2686		3.2686	3.2686	0.0000	46,819.7814	46,819.7814	0.8974	0.8584	47,098.0079
Total		**6.0219**	**51.4599**	**21.8978**	**0.3285**		**4.1606**	**4.1606**		**4.1606**	**4.1606**	**0.0000**	**59,596.0932**	**59,596.0932**	**1.1423**	**1.0926**	**59,950.2430**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	6.90554e+007	0.3724	3.1820	1.3540	0.0203		0.2573	0.2573		0.2573	0.2573	0.0000	3,685.0580	3,685.0580	0.0706	0.0676	3,706.9565
Condo/Townhouse	1.70364e+008	0.9186	7.8501	3.3405	0.0501		0.6347	0.6347		0.6347	0.6347	0.0000	9,091.2538	9,091.2538	0.1743	0.1667	9,145.2786
Single Family Housing	8.7737e+008	4.7309	40.4278	17.2033	0.2581		3.2686	3.2686		3.2686	3.2686	0.0000	46,819.7814	46,819.7814	0.8974	0.8584	47,098.0079
Total		**6.0219**	**51.4599**	**21.8978**	**0.3285**		**4.1606**	**4.1606**		**4.1606**	**4.1606**	**0.0000**	**59,596.0932**	**59,596.0932**	**1.1423**	**1.0926**	**59,950.2430**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.17866e+007	2,941.0180	0.4758	0.0577	2,970.0994
Condo/Townhouse	3.95787e+007	3,661.9680	0.5924	0.0718	3,698.1784
Single Family Housing	1.77572e+008	16,429.6471	2.6580	0.3222	16,592.1072
Total		**23,032.6331**	**3.7262**	**0.4517**	**23,260.3849**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.17866e+007	2,941.0180	0.4758	0.0577	2,970.0994
Condo/Townhouse	3.95787e+007	3,661.9680	0.5924	0.0718	3,698.1784
Single Family Housing	1.77572e+008	16,429.6471	2.6580	0.3222	16,592.1072
Total		**23,032.6331**	**3.7262**	**0.4517**	**23,260.3849**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	414.8587	6.0804	470.7994	0.3082		26.5323	26.5323		26.5323	26.5323	2,215.4067	1,490.0245	3,705.4312	0.4708	0.2141	3,781.0030
Unmitigated	414.8587	6.0804	470.7994	0.3082		26.5323	26.5323		26.5323	26.5323	2,215.4067	1,490.0245	3,705.4312	0.4708	0.2141	3,781.0030

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	17.9211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	223.7110					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	164.5831	2.7447	181.8046	0.2929		24.9226	24.9226		24.9226	24.9226	2,215.4067	1,015.8735	3,231.2802	0.0195	0.2141	3,295.5692
Landscaping	8.6436	3.3358	288.9948	0.0153		1.6097	1.6097		1.6097	1.6097	0.0000	474.1510	474.1510	0.4513	0.0000	485.4338
Total	**414.8587**	**6.0804**	**470.7994**	**0.3082**		**26.5323**	**26.5323**		**26.5323**	**26.5323**	**2,215.4067**	**1,490.0245**	**3,705.4312**	**0.4708**	**0.2141**	**3,781.0030**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	17.9211					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	223.7110					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	164.5831	2.7447	181.8046	0.2929		24.9226	24.9226		24.9226	24.9226	2,215.4067	1,015.8735	3,231.2802	0.0195	0.2141	3,295.5692
Landscaping	8.6436	3.3358	288.9948	0.0153		1.6097	1.6097		1.6097	1.6097	0.0000	474.1510	474.1510	0.4513	0.0000	485.4338
Total	**414.8587**	**6.0804**	**470.7994**	**0.3082**		**26.5323**	**26.5323**		**26.5323**	**26.5323**	**2,215.4067**	**1,490.0245**	**3,705.4312**	**0.4708**	**0.2141**	**3,781.0030**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,603.2437	83.2866	1.9949	5,279.8961
Unmitigated	2,603.2437	83.2866	1.9949	5,279.8961

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	532.895 / 335.955	544.6482	17.4252	0.4174	1,104.6548
Condo/Townhouse	532.895 / 335.955	544.6482	17.4252	0.4174	1,104.6548
Single Family Housing	1481.28 / 933.848	1,513.9474	48.4363	1.1602	3,070.5865
Total		**2,603.2437**	**83.2866**	**1.9949**	**5,279.8961**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	532.895 / 335.955	544.6482	17.4252	0.4174	1,104.6548
Condo/Townhouse	532.895 / 335.955	544.6482	17.4252	0.4174	1,104.6548
Single Family Housing	1481.28 / 933.848	1,513.9474	48.4363	1.1602	3,070.5865
Total		**2,603.2437**	**83.2866**	**1.9949**	**5,279.8961**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7,424.1874	438.7569	0.0000	18,393.1101
Unmitigated	7,424.1874	438.7569	0.0000	18,393.1101

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	3762.34	763.7210	45.1346	0.0000	1,892.0865
Condo/Townhouse	3762.34	763.7210	45.1346	0.0000	1,892.0865
Single Family Housing	29049.3	5,896.7454	348.4877	0.0000	14,608.9371
Total		**7,424.1874**	**438.7569**	**0.0000**	**18,393.1101**

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

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	3762.34	763.7210	45.1346	0.0000	1,892.0865
Condo/Townhouse	3762.34	763.7210	45.1346	0.0000	1,892.0865
Single Family Housing	29049.3	5,896.7454	348.4877	0.0000	14,608.9371
Total		**7,424.1874**	**438.7569**	**0.0000**	**18,393.1101**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

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

11.0 Vegetation

Redwood City EIR - San Mateo County, Summer

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

Redwood City EIR

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	14,718.00	Dwelling Unit	387.32	14,718,000.00	34236
Condo/Townhouse	14,718.00	Dwelling Unit	919.88	14,718,000.00	34236
Single Family Housing	20,943.00	Dwelling Unit	6,799.68	37,697,400.00	62875

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per City estimates

Construction Phase - Phases proportionally shortened for 2040 end date

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Redwood City EIR - San Mateo County, Summer

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

Off-road Equipment - Proportionally increased based on phase length reductions

Grading -

Architectural Coating - BAAQMD Regulation 8 Rule 3

Vehicle Trips - Per VMT Summary from MIG

Woodstoves - No woodstoves

Area Coating - BAAQMD Regulation 8 Rule 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	155,000.00	3,294.00
tblConstructionPhase	NumDays	10,000.00	213.00
tblConstructionPhase	NumDays	15,500.00	330.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	6,000.00	128.00
tblLandUse	Population	42,093.00	34,236.00
tblLandUse	Population	42,093.00	34,236.00
tblLandUse	Population	59,897.00	62,875.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00

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

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	188.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	9.54	32.38
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	8.55	32.37
tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	9.44	32.38
tblWoodstoves	NumberCatalytic	294.36	0.00
tblWoodstoves	NumberCatalytic	294.36	0.00

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

tblWoodstoves	NumberCatalytic	837.72	0.00
tblWoodstoves	NumberNoncatalytic	294.36	0.00
tblWoodstoves	NumberNoncatalytic	294.36	0.00
tblWoodstoves	NumberNoncatalytic	837.72	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Redwood City EIR - San Mateo County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	126.7847	1,294.6572	937.4750	1.8725	930.6402	59.5343	990.1744	476.6082	54.7715	531.3798	0.0000	180,902.9949	180,902.9949	56.1760	0.1226	182,169.9916
2024	153.1863	1,522.7631	1,320.7865	2.9785	930.6402	62.7977	988.4493	476.6082	57.7739	529.7927	0.0000	288,642.3561	288,642.3561	91.4832	0.1308	290,968.4221
2025	138.1986	1,314.2635	1,357.9469	4.1555	440.2905	53.1844	493.4749	173.7747	48.9297	222.7043	0.0000	424,274.9068	424,274.9068	91.4488	21.6882	431,737.3374
2026	123.5412	849.4185	1,332.9062	4.0796	272.4491	27.0365	299.4856	73.0861	25.4336	98.5197	0.0000	416,623.5359	416,623.5359	39.8495	21.1634	423,926.4659
2027	121.3539	844.2529	1,312.2332	4.0092	272.4528	26.9669	299.4197	73.0875	25.3691	98.4566	0.0000	409,473.1484	409,473.1484	39.7300	20.6494	416,619.9212
2028	119.3004	840.0310	1,295.1469	3.9453	272.4567	26.8970	299.3537	73.0889	25.3044	98.3933	0.0000	402,982.6700	402,982.6700	39.6615	20.1745	409,986.2035
2029	117.2268	835.1627	1,280.1510	3.8844	272.4606	26.8282	299.2888	73.0903	25.2406	98.3309	0.0000	396,782.8266	396,782.8266	39.6152	19.6917	403,641.3382
2030	112.7152	618.4156	1,271.4444	4.0192	272.4643	8.9341	281.3983	73.0917	8.8221	81.9138	0.0000	407,404.8364	407,404.8364	16.7965	19.2861	413,571.9907
2031	110.9727	615.6195	1,260.9406	3.9724	272.4674	8.8825	281.3499	73.0928	8.7744	81.8672	0.0000	402,601.3441	402,601.3441	16.7568	18.9268	408,660.4602
2032	109.3835	613.1603	1,252.0192	3.9309	272.4700	8.8337	281.3036	73.0938	8.7292	81.8229	0.0000	398,344.6399	398,344.6399	16.7260	18.6128	404,309.3967
2033	107.9648	610.9796	1,244.4201	3.8940	272.4724	8.7887	281.2611	73.0946	8.6875	81.7821	0.0000	394,531.9618	394,531.9618	16.6955	18.3305	400,411.8444
2034	106.6752	609.1280	1,237.6430	3.8612	272.4748	8.7485	281.2233	73.0955	8.6503	81.7458	0.0000	391,141.9726	391,141.9726	16.6688	18.0797	396,946.4575
2035	101.1180	571.0186	1,229.9793	3.8321	272.4772	5.9994	278.4765	73.0964	5.9038	79.0002	0.0000	388,113.9969	388,113.9969	16.2453	17.8535	393,840.4621
2036	101.1180	571.0186	1,229.9793	3.8321	272.4772	5.9994	278.4765	73.0964	5.9038	79.0002	0.0000	388,113.9969	388,113.9969	16.2453	17.8535	393,840.4621
2037	101.1180	571.0186	1,229.9793	3.8321	272.4772	5.9994	278.4765	73.0964	5.9038	79.0002	0.0000	388,113.9969	388,113.9969	16.2453	17.8535	393,840.4621
2038	101.1180	571.0186	1,229.9793	3.8321	272.4772	8.8208	278.4765	73.0964	8.8197	79.0002	0.0000	388,113.9969	388,113.9969	16.2453	17.8535	393,840.4621
2039	1,808.5160	229.6083	752.8214	1.3548	47.2102	8.8208	47.7827	12.5224	8.8197	13.0863	0.0000	128,555.9695	128,555.9695	4.8514	0.5727	128,698.1891
Maximum	**1,808.5160**	**1,522.7631**	**1,357.9469**	**4.1555**	**930.6402**	**62.7977**	**990.1744**	**476.6082**	**57.7739**	**531.3798**	**0.0000**	**424,274.9068**	**424,274.9068**	**91.4832**	**21.6882**	**431,737.3374**

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

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Redwood City EIR - San Mateo County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	126.7847	1,294.6572	937.4750	1.8725	422.5065	59.5343	482.0408	215.4600	54.7715	270.2315	0.0000	180,902.9947	180,902.9947	56.1760	0.1226	182,169.9915
2024	153.1863	1,522.7631	1,320.7865	2.9785	422.5065	62.7977	480.3157	215.4600	57.7739	268.6444	0.0000	288,642.3559	288,642.3559	91.4832	0.1308	290,968.4219
2025	138.1986	1,314.2635	1,357.9469	4.1555	272.4452	53.1844	299.5402	79.3251	48.9297	128.2548	0.0000	424,274.9067	424,274.9067	91.4488	21.6882	431,737.3373
2026	123.5412	849.4185	1,332.9062	4.0796	272.4491	27.0365	299.4856	73.0861	25.4336	98.5197	0.0000	416,623.5358	416,623.5358	39.8495	21.1634	423,926.4658
2027	121.3539	844.2529	1,312.2332	4.0092	272.4528	26.9669	299.4197	73.0875	25.3691	98.4566	0.0000	409,473.1483	409,473.1483	39.7300	20.6494	416,619.9211
2028	119.3004	840.0310	1,295.1469	3.9453	272.4567	26.8970	299.3537	73.0889	25.3044	98.3933	0.0000	402,982.6699	402,982.6699	39.6615	20.1745	409,986.2034
2029	117.2268	835.1627	1,280.1510	3.8844	272.4606	26.8282	299.2888	73.0903	25.2406	98.3309	0.0000	396,782.8265	396,782.8265	39.6152	19.6917	403,641.3381
2030	112.7152	618.4156	1,271.4444	4.0192	272.4643	8.9341	281.3983	73.0917	8.8221	81.9138	0.0000	407,404.8363	407,404.8363	16.7965	19.2861	413,571.9906
2031	110.9727	615.6195	1,260.9406	3.9724	272.4674	8.8825	281.3499	73.0928	8.7744	81.8672	0.0000	402,601.3440	402,601.3440	16.7568	18.9268	408,660.4601
2032	109.3835	613.1603	1,252.0192	3.9309	272.4700	8.8337	281.3036	73.0938	8.7292	81.8229	0.0000	398,344.6398	398,344.6398	16.7260	18.6128	404,309.3966
2033	107.9648	610.9796	1,244.4201	3.8940	272.4724	8.7887	281.2611	73.0946	8.6875	81.7821	0.0000	394,531.9617	394,531.9617	16.6955	18.3305	400,411.8443
2034	106.6752	609.1280	1,237.6430	3.8612	272.4748	8.7485	281.2233	73.0955	8.6503	81.7458	0.0000	391,141.9725	391,141.9725	16.6688	18.0797	396,946.4574
2035	101.1180	571.0186	1,229.9793	3.8321	272.4772	5.9994	278.4765	73.0964	5.9038	79.0002	0.0000	388,113.9968	388,113.9968	16.2453	17.8535	393,840.4620
2036	101.1180	571.0186	1,229.9793	3.8321	272.4772	5.9994	278.4765	73.0964	5.9038	79.0002	0.0000	388,113.9968	388,113.9968	16.2453	17.8535	393,840.4620
2037	101.1180	571.0186	1,229.9793	3.8321	272.4772	5.9994	278.4765	73.0964	5.9038	79.0002	0.0000	388,113.9968	388,113.9968	16.2453	17.8535	393,840.4620
2038	101.1180	571.0186	1,229.9793	3.8321	272.4772	8.8208	278.4765	73.0964	8.8197	79.0002	0.0000	388,113.9968	388,113.9968	16.2453	17.8535	393,840.4620
2039	1,808.5160	229.6083	752.8214	1.3548	47.2102	8.8208	47.7827	12.5224	8.8197	13.0863	0.0000	128,555.9694	128,555.9694	4.8514	0.5727	128,698.1890
Maximum	**1,808.5160**	**1,522.7631**	**1,357.9469**	**4.1555**	**422.5065**	**62.7977**	**482.0408**	**215.4600**	**57.7739**	**270.2315**	**0.0000**	**424,274.9067**	**424,274.9067**	**91.4832**	**21.6882**	**431,737.3373**

Redwood City EIR - San Mateo County, Summer

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	20.10	0.00	19.40	29.51	0.00	25.53	0.00	0.00	0.00	0.00	0.00	0.00

Redwood City EIR - San Mateo County, Summer

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992
Energy	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050
Mobile	1,289.1030	908.5078	11,242.8583	23.6440	3,294.9075	10.4841	3,305.3916	877.5762	9.7849	887.3612		2,404,102.6624	2,404,102.6624	152.0262	100.9674	2,437,991.6039
Total	**35,969.0526**	**1,829.9491**	**51,934.8150**	**84.6000**	**3,294.9075**	**5,051.7912**	**8,346.6987**	**877.5762**	**5,051.0921**	**5,928.6683**	**489,154.2106**	**3,049,396.8036**	**3,538,551.0142**	**171.3743**	**155.8213**	**3,589,270.1081**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992
Energy	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050
Mobile	1,289.1030	908.5078	11,242.8583	23.6440	3,294.9075	10.4841	3,305.3916	877.5762	9.7849	887.3612		2,404,102.6624	2,404,102.6624	152.0262	100.9674	2,437,991.6039
Total	**35,969.0526**	**1,829.9491**	**51,934.8150**	**84.6000**	**3,294.9075**	**5,051.7912**	**8,346.6987**	**877.5762**	**5,051.0921**	**5,928.6683**	**489,154.2106**	**3,049,396.8036**	**3,538,551.0142**	**171.3743**	**155.8213**	**3,589,270.1081**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	10/25/2023	5	213	
2	Site Preparation	Site Preparation	10/26/2023	4/22/2024	5	128	
3	Grading	Grading	4/23/2024	7/28/2025	5	330	
4	Building Construction	Building Construction	7/29/2025	3/12/2038	5	3294	
5	Paving	Paving	3/13/2038	2/3/2039	5	234	
6	Architectural Coating	Architectural Coating	2/4/2039	12/28/2039	5	234	

Acres of Grading (Site Preparation Phase): 9024

Acres of Grading (Grading Phase): 46530

Acres of Paving: 0

Residential Indoor: 135,945,135; Residential Outdoor: 45,315,045; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	47	8.00	81	0.73
Demolition	Excavators	141	8.00	158	0.38
Demolition	Rubber Tired Dozers	94	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	141	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	188	8.00	97	0.37

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

Grading	Excavators	94	8.00	158	0.38
Grading	Graders	47	8.00	187	0.41
Grading	Rubber Tired Dozers	47	8.00	247	0.40
Grading	Scrapers	94	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	94	8.00	97	0.37
Building Construction	Cranes	47	7.00	231	0.29
Building Construction	Forklifts	141	8.00	89	0.20
Building Construction	Generator Sets	47	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	141	7.00	97	0.37
Building Construction	Welders	47	8.00	46	0.45
Paving	Pavers	94	8.00	130	0.42
Paving	Paving Equipment	94	8.00	132	0.36
Paving	Rollers	94	8.00	80	0.38
Architectural Coating	Air Compressors	47	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	282	705.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	329	823.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	376	940.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	423	28,733.00	5,386.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	282	705.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	47	5,747.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	106.6470	1,009.7674	923.2373	1.8250		46.8840	46.8840		43.6156	43.6156		176,108.2484	176,108.2484	49.3204		177,341.2592
Total	**106.6470**	**1,009.7674**	**923.2373**	**1.8250**		**46.8840**	**46.8840**		**43.6156**	**43.6156**		**176,108.2484**	**176,108.2484**	**49.3204**		**177,341.2592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5340	0.8747	14.2377	0.0474	5.7914	0.0268	5.8182	1.5362	0.0247	1.5608		4,794.7465	4,794.7465	0.1081	0.1050	4,828.7324
Total	**1.5340**	**0.8747**	**14.2377**	**0.0474**	**5.7914**	**0.0268**	**5.8182**	**1.5362**	**0.0247**	**1.5608**		**4,794.7465**	**4,794.7465**	**0.1081**	**0.1050**	**4,828.7324**

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	106.6470	1,009.7674	923.2373	1.8250		46.8840	46.8840		43.6156	43.6156	0.0000	176,108.2482	176,108.2482	49.3204		177,341.2591
Total	**106.6470**	**1,009.7674**	**923.2373**	**1.8250**		**46.8840**	**46.8840**		**43.6156**	**43.6156**	**0.0000**	**176,108.2482**	**176,108.2482**	**49.3204**		**177,341.2591**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5340	0.8747	14.2377	0.0474	5.7914	0.0268	5.8182	1.5362	0.0247	1.5608		4,794.7465	4,794.7465	0.1081	0.1050	4,828.7324
Total	**1.5340**	**0.8747**	**14.2377**	**0.0474**	**5.7914**	**0.0268**	**5.8182**	**1.5362**	**0.0247**	**1.5608**		**4,794.7465**	**4,794.7465**	**0.1081**	**0.1050**	**4,828.7324**

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					923.8794	0.0000	923.8794	474.8150	0.0000	474.8150			0.0000			0.0000
Off-Road	124.9940	1,293.6361	857.4830	1.7892		59.5030	59.5030		54.7428	54.7428		173,303.4806	173,303.4806	56.0499		174,704.7271
Total	**124.9940**	**1,293.6361**	**857.4830**	**1.7892**	**923.8794**	**59.5030**	**983.3824**	**474.8150**	**54.7428**	**529.5577**		**173,303.4806**	**173,303.4806**	**56.0499**		**174,704.7271**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7907	1.0211	16.6208	0.0554	6.7608	0.0313	6.7920	1.7933	0.0288	1.8220		5,597.2715	5,597.2715	0.1262	0.1226	5,636.9458
Total	**1.7907**	**1.0211**	**16.6208**	**0.0554**	**6.7608**	**0.0313**	**6.7920**	**1.7933**	**0.0288**	**1.8220**		**5,597.2715**	**5,597.2715**	**0.1262**	**0.1226**	**5,636.9458**

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					415.7457	0.0000	415.7457	213.6667	0.0000	213.6667			0.0000			0.0000
Off-Road	124.9940	1,293.6361	857.4829	1.7892		59.5030	59.5030		54.7428	54.7428	0.0000	173,303.4805	173,303.4805	56.0499		174,704.7269
Total	**124.9940**	**1,293.6361**	**857.4829**	**1.7892**	**415.7457**	**59.5030**	**475.2487**	**213.6667**	**54.7428**	**268.4095**	**0.0000**	**173,303.4805**	**173,303.4805**	**56.0499**		**174,704.7269**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7907	1.0211	16.6208	0.0554	6.7608	0.0313	6.7920	1.7933	0.0288	1.8220		5,597.2715	5,597.2715	0.1262	0.1226	5,636.9458
Total	**1.7907**	**1.0211**	**16.6208**	**0.0554**	**6.7608**	**0.0313**	**6.7920**	**1.7933**	**0.0288**	**1.8220**		**5,597.2715**	**5,597.2715**	**0.1262**	**0.1226**	**5,636.9458**

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

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					923.8794	0.0000	923.8794	474.8150	0.0000	474.8150			0.0000			0.0000
Off-Road	125.0625	1,277.2718	861.7748	1.7895		57.7794	57.7794		53.1571	53.1571		173,336.4677	173,336.4677	56.0605		174,737.9808
Total	**125.0625**	**1,277.2718**	**861.7748**	**1.7895**	**923.8794**	**57.7794**	**981.6588**	**474.8150**	**53.1571**	**527.9720**		**173,336.4677**	**173,336.4677**	**56.0605**		**174,737.9808**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6930	0.9160	15.5971	0.0536	6.7608	0.0298	6.7905	1.7933	0.0274	1.8207		5,414.4368	5,414.4368	0.1143	0.1145	5,451.4267
Total	**1.6930**	**0.9160**	**15.5971**	**0.0536**	**6.7608**	**0.0298**	**6.7905**	**1.7933**	**0.0274**	**1.8207**		**5,414.4368**	**5,414.4368**	**0.1143**	**0.1145**	**5,451.4267**

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

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					415.7457	0.0000	415.7457	213.6667	0.0000	213.6667			0.0000			0.0000
Off-Road	125.0625	1,277.2718	861.7748	1.7895		57.7794	57.7794		53.1571	53.1571	0.0000	173,336.4676	173,336.4676	56.0605		174,737.9807
Total	**125.0625**	**1,277.2718**	**861.7748**	**1.7895**	**415.7457**	**57.7794**	**473.5252**	**213.6667**	**53.1571**	**266.8238**	**0.0000**	**173,336.4676**	**173,336.4676**	**56.0605**		**174,737.9807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6930	0.9160	15.5971	0.0536	6.7608	0.0298	6.7905	1.7933	0.0274	1.8207		5,414.4368	5,414.4368	0.1143	0.1145	5,451.4267
Total	**1.6930**	**0.9160**	**15.5971**	**0.0536**	**6.7608**	**0.0298**	**6.7905**	**1.7933**	**0.0274**	**1.8207**		**5,414.4368**	**5,414.4368**	**0.1143**	**0.1145**	**5,451.4267**

Redwood City EIR - San Mateo County, Summer

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

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					432.5686	0.0000	432.5686	171.7265	0.0000	171.7265			0.0000			0.0000
Off-Road	151.2526	1,521.7170	1,302.9721	2.9173		62.7637	62.7637		57.7426	57.7426		282,458.1878	282,458.1878	91.3527		284,742.0053
Total	**151.2526**	**1,521.7170**	**1,302.9721**	**2.9173**	**432.5686**	**62.7637**	**495.3323**	**171.7265**	**57.7426**	**229.4691**		**282,458.1878**	**282,458.1878**	**91.3527**		**284,742.0053**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9336	1.0462	17.8145	0.0612	7.7219	0.0340	7.7559	2.0482	0.0313	2.0795		6,184.1684	6,184.1684	0.1305	0.1308	6,226.4169
Total	**1.9336**	**1.0462**	**17.8145**	**0.0612**	**7.7219**	**0.0340**	**7.7559**	**2.0482**	**0.0313**	**2.0795**		**6,184.1684**	**6,184.1684**	**0.1305**	**0.1308**	**6,226.4169**

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

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					194.6559	0.0000	194.6559	77.2769	0.0000	77.2769			0.0000			0.0000
Off-Road	151.2526	1,521.7170	1,302.9721	2.9173		62.7637	62.7637		57.7426	57.7426	0.0000	282,458.1875	282,458.1875	91.3527		284,742.0050
Total	**151.2526**	**1,521.7170**	**1,302.9721**	**2.9173**	**194.6559**	**62.7637**	**257.4196**	**77.2769**	**57.7426**	**135.0196**	**0.0000**	**282,458.1875**	**282,458.1875**	**91.3527**		**284,742.0050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9336	1.0462	17.8145	0.0612	7.7219	0.0340	7.7559	2.0482	0.0313	2.0795		6,184.1684	6,184.1684	0.1305	0.1308	6,226.4169
Total	**1.9336**	**1.0462**	**17.8145**	**0.0612**	**7.7219**	**0.0340**	**7.7559**	**2.0482**	**0.0313**	**2.0795**		**6,184.1684**	**6,184.1684**	**0.1305**	**0.1308**	**6,226.4169**

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

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					432.5686	0.0000	432.5686	171.7265	0.0000	171.7265			0.0000			0.0000
Off-Road	136.3584	1,313.3158	1,237.5614	2.9170		53.1519	53.1519		48.8998	48.8998		282,389.2276	282,389.2276	91.3304		284,672.4875
Total	**136.3584**	**1,313.3158**	**1,237.5614**	**2.9170**	**432.5686**	**53.1519**	**485.7205**	**171.7265**	**48.8998**	**220.6262**		**282,389.2276**	**282,389.2276**	**91.3304**		**284,672.4875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8403	0.9477	16.7683	0.0591	7.7219	0.0325	7.7544	2.0482	0.0299	2.0781		5,976.6934	5,976.6934	0.1184	0.1230	6,016.3082
Total	**1.8403**	**0.9477**	**16.7683**	**0.0591**	**7.7219**	**0.0325**	**7.7544**	**2.0482**	**0.0299**	**2.0781**		**5,976.6934**	**5,976.6934**	**0.1184**	**0.1230**	**6,016.3082**

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

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					194.6559	0.0000	194.6559	77.2769	0.0000	77.2769			0.0000			0.0000
Off-Road	136.3584	1,313.3158	1,237.5614	2.9170		53.1519	53.1519		48.8998	48.8998	0.0000	282,389.2273	282,389.2273	91.3304		284,672.4873
Total	**136.3584**	**1,313.3158**	**1,237.5614**	**2.9170**	**194.6559**	**53.1519**	**247.8078**	**77.2769**	**48.8998**	**126.1767**	**0.0000**	**282,389.2273**	**282,389.2273**	**91.3304**		**284,672.4873**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8403	0.9477	16.7683	0.0591	7.7219	0.0325	7.7544	2.0482	0.0299	2.0781		5,976.6934	5,976.6934	0.1184	0.1230	6,016.3082
Total	**1.8403**	**0.9477**	**16.7683**	**0.0591**	**7.7219**	**0.0325**	**7.7544**	**2.0482**	**0.0299**	**2.0781**		**5,976.6934**	**5,976.6934**	**0.1184**	**0.1230**	**6,016.3082**

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

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4545	239.8692	89.4114	1.0810	36.4104	1.3070	37.7174	10.4773	1.2501	11.7274		121,430.8976	121,430.8976	8.1099	17.9284	126,976.3084
Worker	56.2511	28.9676	512.5563	1.8074	236.0348	0.9927	237.0275	62.6074	0.9136	63.5211		182,689.7143	182,689.7143	3.6195	3.7598	183,900.6197
Total	**61.7055**	**268.8369**	**601.9677**	**2.8884**	**272.4452**	**2.2997**	**274.7449**	**73.0847**	**2.1638**	**75.2485**		**304,120.6119**	**304,120.6119**	**11.7294**	**21.6882**	**310,876.9281**

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

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.4545	239.8692	89.4114	1.0810	36.4104	1.3070	37.7174	10.4773	1.2501	11.7274		121,430.8976	121,430.8976	8.1099	17.9284	126,976.3084
Worker	56.2511	28.9676	512.5563	1.8074	236.0348	0.9927	237.0275	62.6074	0.9136	63.5211		182,689.7143	182,689.7143	3.6195	3.7598	183,900.6197
Total	**61.7055**	**268.8369**	**601.9677**	**2.8884**	**272.4452**	**2.2997**	**274.7449**	**73.0847**	**2.1638**	**75.2485**		**304,120.6119**	**304,120.6119**	**11.7294**	**21.6882**	**310,876.9281**

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

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3268	236.7378	89.7604	1.0573	36.4143	1.2994	37.7136	10.4787	1.2428	11.7215		119,067.0181	119,067.0181	8.2908	17.5918	124,516.6536
Worker	53.9469	26.6055	487.1666	1.7551	236.0348	0.9419	236.9767	62.6074	0.8668	63.4743		177,402.2228	177,402.2228	3.3142	3.5716	178,549.4030
Total	**59.2736**	**263.3433**	**576.9270**	**2.8124**	**272.4491**	**2.2413**	**274.6903**	**73.0861**	**2.1096**	**75.1957**		**296,469.2409**	**296,469.2409**	**11.6050**	**21.1634**	**303,066.0566**

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

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3268	236.7378	89.7604	1.0573	36.4143	1.2994	37.7136	10.4787	1.2428	11.7215		119,067.0181	119,067.0181	8.2908	17.5918	124,516.6536
Worker	53.9469	26.6055	487.1666	1.7551	236.0348	0.9419	236.9767	62.6074	0.8668	63.4743		177,402.2228	177,402.2228	3.3142	3.5716	178,549.4030
Total	**59.2736**	**263.3433**	**576.9270**	**2.8124**	**272.4491**	**2.2413**	**274.6903**	**73.0861**	**2.1096**	**75.1957**		**296,469.2409**	**296,469.2409**	**11.6050**	**21.1634**	**303,066.0566**

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

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2157	233.5022	90.0279	1.0325	36.4180	1.2890	37.7069	10.4800	1.2329	11.7129		116,524.7673	116,524.7673	8.4280	17.2300	121,870.0181
Worker	51.8707	24.6756	466.2261	1.7095	236.0348	0.8827	236.9175	62.6074	0.8123	63.4197		172,794.0862	172,794.0862	3.0575	3.4194	173,889.4939
Total	**57.0863**	**258.1777**	**556.2540**	**2.7420**	**272.4528**	**2.1717**	**274.6244**	**73.0875**	**2.0451**	**75.1326**		**289,318.8535**	**289,318.8535**	**11.4854**	**20.6494**	**295,759.5120**

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

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2157	233.5022	90.0279	1.0325	36.4180	1.2890	37.7069	10.4800	1.2329	11.7129		116,524.7673	116,524.7673	8.4280	17.2300	121,870.0181
Worker	51.8707	24.6756	466.2261	1.7095	236.0348	0.8827	236.9175	62.6074	0.8123	63.4197		172,794.0862	172,794.0862	3.0575	3.4194	173,889.4939
Total	**57.0863**	**258.1777**	**556.2540**	**2.7420**	**272.4528**	**2.1717**	**274.6244**	**73.0875**	**2.0451**	**75.1326**		**289,318.8535**	**289,318.8535**	**11.4854**	**20.6494**	**295,759.5120**

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

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1361	230.8764	90.5676	1.0090	36.4219	1.2804	37.7023	10.4815	1.2246	11.7061		114,113.3035	114,113.3035	8.5808	16.8807	119,358.2778
Worker	49.8967	23.0794	448.6002	1.6691	236.0348	0.8214	236.8562	62.6074	0.7558	63.3633		168,715.0716	168,715.0716	2.8361	3.2938	169,767.5165
Total	**55.0328**	**253.9558**	**539.1677**	**2.6781**	**272.4567**	**2.1017**	**274.5584**	**73.0889**	**1.9804**	**75.0693**		**282,828.3750**	**282,828.3750**	**11.4169**	**20.1745**	**289,125.7943**

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

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1361	230.8764	90.5676	1.0090	36.4219	1.2804	37.7023	10.4815	1.2246	11.7061		114,113.3035	114,113.3035	8.5808	16.8807	119,358.2778
Worker	49.8967	23.0794	448.6002	1.6691	236.0348	0.8214	236.8562	62.6074	0.7558	63.3633		168,715.0716	168,715.0716	2.8361	3.2938	169,767.5165
Total	**55.0328**	**253.9558**	**539.1677**	**2.6781**	**272.4567**	**2.1017**	**274.5584**	**73.0889**	**1.9804**	**75.0693**		**282,828.3750**	**282,828.3750**	**11.4169**	**20.1745**	**289,125.7943**

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

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0604	227.3771	91.0720	0.9840	36.4258	1.2657	37.6915	10.4829	1.2106	11.6935		111,537.3307	111,537.3307	8.7302	16.5039	116,673.7450
Worker	47.8989	21.7105	433.0998	1.6333	236.0348	0.7673	236.8020	62.6074	0.7060	63.3134		165,091.2010	165,091.2010	2.6405	3.1878	166,107.1840
Total	**52.9593**	**249.0875**	**524.1718**	**2.6173**	**272.4606**	**2.0329**	**274.4935**	**73.0903**	**1.9166**	**75.0069**		**276,628.5317**	**276,628.5317**	**11.3707**	**19.6917**	**282,780.9290**

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

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0604	227.3771	91.0720	0.9840	36.4258	1.2657	37.6915	10.4829	1.2106	11.6935		111,537.3307	111,537.3307	8.7302	16.5039	116,673.7450
Worker	47.8989	21.7105	433.0998	1.6333	236.0348	0.7673	236.8020	62.6074	0.7060	63.3134		165,091.2010	165,091.2010	2.6405	3.1878	166,107.1840
Total	**52.9593**	**249.0875**	**524.1718**	**2.6173**	**272.4606**	**2.0329**	**274.4935**	**73.0903**	**1.9166**	**75.0069**		**276,628.5317**	**276,628.5317**	**11.3707**	**19.6917**	**282,780.9290**

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

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0008	224.8572	91.6770	0.9627	36.4295	1.2522	37.6817	10.4842	1.1977	11.6819		109,331.1565	109,331.1565	8.8608	16.1831	114,375.2417
Worker	46.1852	20.6313	420.3892	1.6016	236.0348	0.7192	236.7540	62.6074	0.6618	63.2693		161,888.9827	161,888.9827	2.4722	3.1029	162,875.4644
Total	**51.1860**	**245.4886**	**512.0662**	**2.5643**	**272.4643**	**1.9714**	**274.4357**	**73.0917**	**1.8595**	**74.9512**		**271,220.1392**	**271,220.1392**	**11.3330**	**19.2861**	**277,250.7061**

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

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0008	224.8572	91.6770	0.9627	36.4295	1.2522	37.6817	10.4842	1.1977	11.6819		109,331.1565	109,331.1565	8.8608	16.1831	114,375.2417
Worker	46.1852	20.6313	420.3892	1.6016	236.0348	0.7192	236.7540	62.6074	0.6618	63.2693		161,888.9827	161,888.9827	2.4722	3.1029	162,875.4644
Total	**51.1860**	**245.4886**	**512.0662**	**2.5643**	**272.4643**	**1.9714**	**274.4357**	**73.0917**	**1.8595**	**74.9512**		**271,220.1392**	**271,220.1392**	**11.3330**	**19.2861**	**277,250.7061**

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

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9639	222.9818	92.3115	0.9439	36.4326	1.2447	37.6773	10.4854	1.1905	11.6759		107,360.0194	107,360.0194	8.9701	15.8948	112,320.9146
Worker	44.4796	19.7106	409.2509	1.5735	236.0348	0.6752	236.7099	62.6074	0.6213	63.2287		159,056.6275	159,056.6275	2.3232	3.0321	160,018.2611
Total	**49.4435**	**242.6925**	**501.5624**	**2.5174**	**272.4674**	**1.9199**	**274.3873**	**73.0928**	**1.8118**	**74.9046**		**266,416.6469**	**266,416.6469**	**11.2933**	**18.9268**	**272,339.1756**

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

3.5 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9639	222.9818	92.3115	0.9439	36.4326	1.2447	37.6773	10.4854	1.1905	11.6759		107,360.0194	107,360.0194	8.9701	15.8948	112,320.9146
Worker	44.4796	19.7106	409.2509	1.5735	236.0348	0.6752	236.7099	62.6074	0.6213	63.2287		159,056.6275	159,056.6275	2.3232	3.0321	160,018.2611
Total	**49.4435**	**242.6925**	**501.5624**	**2.5174**	**272.4674**	**1.9199**	**274.3873**	**73.0928**	**1.8118**	**74.9046**		**266,416.6469**	**266,416.6469**	**11.2933**	**18.9268**	**272,339.1756**

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

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9374	221.2663	92.9790	0.9271	36.4352	1.2363	37.6714	10.4863	1.1824	11.6688		105,600.6573	105,600.6573	9.0700	15.6381	110,487.5461
Worker	42.9170	18.9669	399.6619	1.5488	236.0348	0.6347	236.6695	62.6074	0.5841	63.1915		156,559.2854	156,559.2854	2.1926	2.9747	157,500.5660
Total	**47.8544**	**240.2332**	**492.6409**	**2.4760**	**272.4700**	**1.8710**	**274.3410**	**73.0938**	**1.7665**	**74.8603**		**262,159.9427**	**262,159.9427**	**11.2626**	**18.6128**	**267,988.1121**

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

3.5 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9374	221.2663	92.9790	0.9271	36.4352	1.2363	37.6714	10.4863	1.1824	11.6688		105,600.6573	105,600.6573	9.0700	15.6381	110,487.5461
Worker	42.9170	18.9669	399.6619	1.5488	236.0348	0.6347	236.6695	62.6074	0.5841	63.1915		156,559.2854	156,559.2854	2.1926	2.9747	157,500.5660
Total	**47.8544**	**240.2332**	**492.6409**	**2.4760**	**272.4700**	**1.8710**	**274.3410**	**73.0938**	**1.7665**	**74.8603**		**262,159.9427**	**262,159.9427**	**11.2626**	**18.6128**	**267,988.1121**

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

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9233	219.6766	93.6439	0.9119	36.4376	1.2280	37.6655	10.4872	1.1745	11.6617		103,978.0751	103,978.0751	9.1535	15.4017	108,796.6078
Worker	41.5124	18.3759	391.3980	1.5272	236.0348	0.5981	236.6329	62.6074	0.5504	63.1578		154,369.1895	154,369.1895	2.0786	2.9289	155,293.9521
Total	**46.4357**	**238.0525**	**485.0419**	**2.4390**	**272.4724**	**1.8260**	**274.2984**	**73.0946**	**1.7248**	**74.8195**		**258,347.2646**	**258,347.2646**	**11.2320**	**18.3305**	**264,090.5599**

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

3.5 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9233	219.6766	93.6439	0.9119	36.4376	1.2280	37.6655	10.4872	1.1745	11.6617		103,978.0751	103,978.0751	9.1535	15.4017	108,796.6078
Worker	41.5124	18.3759	391.3980	1.5272	236.0348	0.5981	236.6329	62.6074	0.5504	63.1578		154,369.1895	154,369.1895	2.0786	2.9289	155,293.9521
Total	**46.4357**	**238.0525**	**485.0419**	**2.4390**	**272.4724**	**1.8260**	**274.2984**	**73.0946**	**1.7248**	**74.8195**		**258,347.2646**	**258,347.2646**	**11.2320**	**18.3305**	**264,090.5599**

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

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9170	218.3060	94.2288	0.8981	36.4400	1.2212	37.6612	10.4881	1.1681	11.6561		102,506.6302	102,506.6302	9.2284	15.1881	107,263.3899
Worker	40.2290	17.8949	384.0360	1.5082	236.0348	0.5646	236.5994	62.6074	0.5196	63.1270		152,450.6452	152,450.6452	1.9769	2.8917	153,361.7831
Total	**45.1460**	**236.2009**	**478.2647**	**2.4062**	**272.4748**	**1.7858**	**274.2606**	**73.0955**	**1.6876**	**74.7831**		**254,957.2754**	**254,957.2754**	**11.2053**	**18.0797**	**260,625.1730**

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

3.5 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9170	218.3060	94.2288	0.8981	36.4400	1.2212	37.6612	10.4881	1.1681	11.6561		102,506.6302	102,506.6302	9.2284	15.1881	107,263.3899
Worker	40.2290	17.8949	384.0360	1.5082	236.0348	0.5646	236.5994	62.6074	0.5196	63.1270		152,450.6452	152,450.6452	1.9769	2.8917	153,361.7831
Total	**45.1460**	**236.2009**	**478.2647**	**2.4062**	**272.4748**	**1.7858**	**274.2606**	**73.0955**	**1.6876**	**74.7831**		**254,957.2754**	**254,957.2754**	**11.2053**	**18.0797**	**260,625.1730**

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

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.5 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9146	216.9086	94.7186	0.8855	36.4424	1.2153	37.6577	10.4889	1.1624	11.6513		101,144.9761	101,144.9761	9.2848	14.9903	105,844.2014
Worker	39.0135	17.5281	377.7254	1.4917	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		150,784.3236	150,784.3236	1.8883	2.8632	151,684.7569
Total	**43.9281**	**234.4368**	**472.4440**	**2.3772**	**272.4772**	**1.7499**	**274.2270**	**73.0964**	**1.6543**	**74.7507**		**251,929.2997**	**251,929.2997**	**11.1731**	**17.8535**	**257,528.9583**

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

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076		124,856.2880	124,856.2880	4.8051		124,976.4144
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**		**124,856.2880**	**124,856.2880**	**4.8051**		**124,976.4144**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.9572	0.4301	9.2680	0.0366	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,699.6815	3,699.6815	0.0463	0.0703	3,721.7747
Total	**0.9572**	**0.4301**	**9.2680**	**0.0366**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,699.6815**	**3,699.6815**	**0.0463**	**0.0703**	**3,721.7747**

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

3.6 Paving - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076	0.0000	124,856.2879	124,856.2879	4.8051		124,976.4143
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**	**0.0000**	**124,856.2879**	**124,856.2879**	**4.8051**		**124,976.4143**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.9572	0.4301	9.2680	0.0366	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,699.6815	3,699.6815	0.0463	0.0703	3,721.7747
Total	**0.9572**	**0.4301**	**9.2680**	**0.0366**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,699.6815**	**3,699.6815**	**0.0463**	**0.0703**	**3,721.7747**

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

3.6 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076		124,856.2880	124,856.2880	4.8051		124,976.4144
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**		**124,856.2880**	**124,856.2880**	**4.8051**		**124,976.4144**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.9572	0.4301	9.2680	0.0366	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,699.6815	3,699.6815	0.0463	0.0703	3,721.7747
Total	**0.9572**	**0.4301**	**9.2680**	**0.0366**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,699.6815**	**3,699.6815**	**0.0463**	**0.0703**	**3,721.7747**

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

3.6 Paving - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076	0.0000	124,856.2879	124,856.2879	4.8051		124,976.4143
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**	**0.0000**	**124,856.2879**	**124,856.2879**	**4.8051**		**124,976.4143**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.9572	0.4301	9.2680	0.0366	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,699.6815	3,699.6815	0.0463	0.0703	3,721.7747
Total	**0.9572**	**0.4301**	**9.2680**	**0.0366**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,699.6815**	**3,699.6815**	**0.0463**	**0.0703**	**3,721.7747**

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

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1,795.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	5.5398	35.6132	84.3311	0.1397		0.4655	0.4655		0.4655	0.4655		13,228.0583	13,228.0583	0.4888		13,240.2785
Total	**1,800.7128**	**35.6132**	**84.3311**	**0.1397**		**0.4655**	**0.4655**		**0.4655**	**0.4655**		**13,228.0583**	**13,228.0583**	**0.4888**		**13,240.2785**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8032	3.5059	75.5503	0.2984	47.2102	0.1069	47.3172	12.5224	0.0984	12.6208		30,158.9638	30,158.9638	0.3777	0.5727	30,339.0630
Total	**7.8032**	**3.5059**	**75.5503**	**0.2984**	**47.2102**	**0.1069**	**47.3172**	**12.5224**	**0.0984**	**12.6208**		**30,158.9638**	**30,158.9638**	**0.3777**	**0.5727**	**30,339.0630**

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

3.7 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1,795.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	5.5398	35.6132	84.3311	0.1397		0.4655	0.4655		0.4655	0.4655	0.0000	13,228.0583	13,228.0583	0.4888		13,240.2785
Total	**1,800.7128**	**35.6132**	**84.3311**	**0.1397**		**0.4655**	**0.4655**		**0.4655**	**0.4655**	**0.0000**	**13,228.0583**	**13,228.0583**	**0.4888**		**13,240.2785**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8032	3.5059	75.5503	0.2984	47.2102	0.1069	47.3172	12.5224	0.0984	12.6208		30,158.9638	30,158.9638	0.3777	0.5727	30,339.0630
Total	**7.8032**	**3.5059**	**75.5503**	**0.2984**	**47.2102**	**0.1069**	**47.3172**	**12.5224**	**0.0984**	**12.6208**		**30,158.9638**	**30,158.9638**	**0.3777**	**0.5727**	**30,339.0630**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,289.1030	908.5078	11,242.8583	23.6440	3,294.9075	10.4841	3,305.3916	877.5762	9.7849	887.3612		2,404,102.6624	2,404,102.6624	152.0262	100.9674	2,437,991.6039
Unmitigated	1,289.1030	908.5078	11,242.8583	23.6440	3,294.9075	10.4841	3,305.3916	877.5762	9.7849	887.3612		2,404,102.6624	2,404,102.6624	152.0262	100.9674	2,437,991.6039

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Condo/Townhouse	0.00	0.00	0.00		
Single Family Housing	678,134.34	678,134.34	677924.91	1,566,154,922	1,566,154,922
Total	678,134.34	678,134.34	677,924.91	1,566,154,922	1,566,154,922

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Condo/Townhouse	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Single Family Housing	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050
NaturalGas Unmitigated	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	340450	3.6715	31.3748	13.3510	0.2003		2.5367	2.5367		2.5367	2.5367		40,052.9319	40,052.9319	0.7677	0.7343	40,290.9464
Condo/Townhouse	839910	9.0579	77.4035	32.9376	0.4941		6.2582	6.2582		6.2582	6.2582		98,812.9280	98,812.9280	1.8939	1.8116	99,400.1239
Single Family Housing	2.21429e+006	23.8796	204.0616	86.8347	1.3025		16.4986	16.4986		16.4986	16.4986		260,504.1886	260,504.1886	4.9930	4.7759	262,052.2347
Total		**36.6089**	**312.8399**	**133.1234**	**1.9968**		**25.2934**	**25.2934**		**25.2934**	**25.2934**		**399,370.0485**	**399,370.0485**	**7.6546**	**7.3218**	**401,743.3050**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	340.45	3.6715	31.3748	13.3510	0.2003		2.5367	2.5367		2.5367	2.5367		40,052.9319	40,052.9319	0.7677	0.7343	40,290.9464
Condo/Townhouse	839.91	9.0579	77.4035	32.9376	0.4941		6.2582	6.2582		6.2582	6.2582		98,812.9280	98,812.9280	1.8939	1.8116	99,400.1239
Single Family Housing	2214.29	23.8796	204.0616	86.8347	1.3025		16.4986	16.4986		16.4986	16.4986		260,504.1886	260,504.1886	4.9930	4.7759	262,052.2347
Total		**36.6089**	**312.8399**	**133.1234**	**1.9968**		**25.2934**	**25.2934**		**25.2934**	**25.2934**		**399,370.0485**	**399,370.0485**	**7.6546**	**7.3218**	**401,743.3050**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992
Unmitigated	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	115.0878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,436.6548					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	32,967.8318	560.8372	36,420.7605	58.7398		4,992.9647	4,992.9647		4,992.9647	4,992.9647	489,154.2106	238,440.1765	727,594.3870	4.5701	47.5321	741,873.1961
Landscaping	123.7663	47.7641	4,138.0728	0.2195		23.0491	23.0491		23.0491	23.0491		7,483.9163	7,483.9163	7.1235		7,662.0030
Total	**34,643.3407**	**608.6014**	**40,558.8334**	**58.9592**		**5,016.0137**	**5,016.0137**		**5,016.0137**	**5,016.0137**	**489,154.2106**	**245,924.0928**	**735,078.3033**	**11.6936**	**47.5321**	**749,535.1992**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	115.0878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,436.6548					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	32,967.8318	560.8372	36,420.7605	58.7398		4,992.9647	4,992.9647		4,992.9647	4,992.9647	489,154.2106	238,440.1765	727,594.3870	4.5701	47.5321	741,873.1961
Landscaping	123.7663	47.7641	4,138.0728	0.2195		23.0491	23.0491		23.0491	23.0491		7,483.9163	7,483.9163	7.1235		7,662.0030
Total	**34,643.3407**	**608.6014**	**40,558.8334**	**58.9592**		**5,016.0137**	**5,016.0137**		**5,016.0137**	**5,016.0137**	**489,154.2106**	**245,924.0928**	**735,078.3033**	**11.6936**	**47.5321**	**749,535.1992**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Redwood City EIR - San Mateo County, Winter

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

Redwood City EIR

San Mateo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	14,718.00	Dwelling Unit	387.32	14,718,000.00	34236
Condo/Townhouse	14,718.00	Dwelling Unit	919.88	14,718,000.00	34236
Single Family Housing	20,943.00	Dwelling Unit	6,799.68	37,697,400.00	62875

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per City estimates

Construction Phase - Phases proportionally shortened for 2040 end date

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Redwood City EIR - San Mateo County, Winter

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

Off-road Equipment - Proportionally increased based on phase length reductions

Grading -

Architectural Coating - BAAQMD Regulation 8 Rule 3

Vehicle Trips - Per VMT Summary from MIG

Woodstoves - No woodstoves

Area Coating - BAAQMD Regulation 8 Rule 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	155,000.00	3,294.00
tblConstructionPhase	NumDays	10,000.00	213.00
tblConstructionPhase	NumDays	15,500.00	330.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	6,000.00	128.00
tblLandUse	Population	42,093.00	34,236.00
tblLandUse	Population	42,093.00	34,236.00
tblLandUse	Population	59,897.00	62,875.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00

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

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	188.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	9.54	32.38
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	8.55	32.37
tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	9.44	32.38
tblWoodstoves	NumberCatalytic	294.36	0.00
tblWoodstoves	NumberCatalytic	294.36	0.00

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

tblWoodstoves	NumberCatalytic	837.72	0.00
tblWoodstoves	NumberNoncatalytic	294.36	0.00
tblWoodstoves	NumberNoncatalytic	294.36	0.00
tblWoodstoves	NumberNoncatalytic	837.72	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Redwood City EIR - San Mateo County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	126.9472	1,294.8932	937.4374	1.8699	930.6402	59.5343	990.1744	476.6082	54.7715	531.3798	0.0000	180,641.0693	180,641.0693	56.1932	0.1408	181,913.1000
2024	153.3756	1,523.0045	1,320.7850	2.9752	930.6402	62.7977	988.4493	476.6082	57.7739	529.7927	0.0000	288,305.4712	288,305.4712	91.5013	0.1503	290,637.7863
2025	138.3905	1,314.4818	1,361.3933	4.0580	440.2905	53.1844	493.4749	173.7747	48.9297	222.7043	0.0000	414,424.8703	414,424.8703	91.4655	22.2768	422,075.0756
2026	129.3930	868.2975	1,336.8754	3.9851	272.4491	27.0437	299.4928	73.0861	25.4405	98.5266	0.0000	407,083.0909	407,083.0909	40.3075	21.7229	414,564.1997
2027	127.2571	862.5790	1,316.5577	3.9173	272.4528	26.9736	299.4263	73.0875	25.3755	98.4630	0.0000	400,198.5321	400,198.5321	40.1563	21.1856	407,515.7563
2028	125.2284	857.9077	1,299.6701	3.8557	272.4567	26.9032	299.3599	73.0889	25.3104	98.3993	0.0000	393,939.7382	393,939.7382	40.0596	20.6916	401,107.3170
2029	123.1449	852.5980	1,284.7469	3.7969	272.4606	26.8340	299.2946	73.0903	25.2462	98.3365	0.0000	387,942.9079	387,942.9079	39.9881	20.1927	394,960.0369
2030	118.6299	635.5325	1,276.0790	3.9335	272.4643	8.9393	281.4036	73.0917	8.8272	81.9188	0.0000	398,743.2731	398,743.2731	17.1467	19.7745	405,064.7290
2031	116.8620	632.4845	1,265.5638	3.8881	272.4674	8.8874	281.3548	73.0928	8.7791	81.8719	0.0000	394,095.6505	394,095.6505	17.0867	19.4048	400,305.4382
2032	115.2469	629.8265	1,256.5783	3.8480	272.4700	8.8383	281.3082	73.0938	8.7336	81.8273	0.0000	389,975.8316	389,975.8316	17.0375	19.0824	396,088.3356
2033	113.8018	627.4902	1,248.8788	3.8123	272.4724	8.7930	281.2654	73.0946	8.6916	81.7862	0.0000	386,283.2401	386,283.2401	16.9906	18.7938	392,308.5455
2034	112.4950	625.5102	1,241.9970	3.7805	272.4748	8.7526	281.2274	73.0955	8.6542	81.7497	0.0000	382,997.8828	382,997.8828	16.9491	18.5378	388,945.8673
2035	106.9182	587.2930	1,234.2007	3.7523	272.4772	6.0033	278.4805	73.0964	5.9076	79.0040	0.0000	380,060.6903	380,060.6903	16.5124	18.3076	385,929.1647
2036	106.9182	587.2930	1,234.2007	3.7523	272.4772	6.0033	278.4805	73.0964	5.9076	79.0040	0.0000	380,060.6903	380,060.6903	16.5124	18.3076	385,929.1647
2037	106.9182	587.2930	1,234.2007	3.7523	272.4772	6.0033	278.4805	73.0964	5.9076	79.0040	0.0000	380,060.6903	380,060.6903	16.5124	18.3076	385,929.1647
2038	106.9182	587.2930	1,234.2007	3.7523	272.4772	8.8208	278.4805	73.0964	8.8197	79.0040	0.0000	380,060.6903	380,060.6903	16.5124	18.3076	385,929.1647
2039	1,809.7095	229.7063	752.8685	1.3528	47.2102	8.8208	47.7827	12.5224	8.8197	13.0863	0.0000	128,355.4010	128,355.4010	4.8585	0.6566	128,500.8666
Maximum	**1,809.7095**	**1,523.0045**	**1,361.3933**	**4.0580**	**930.6402**	**62.7977**	**990.1744**	**476.6082**	**57.7739**	**531.3798**	**0.0000**	**414,424.8703**	**414,424.8703**	**91.5013**	**22.2768**	**422,075.0756**

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

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

Redwood City EIR - San Mateo County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	126.9472	1,294.8932	937.4374	1.8699	422.5065	59.5343	482.0408	215.4600	54.7715	270.2315	0.0000	180,641.0692	180,641.0692	56.1932	0.1408	181,913.0999
2024	153.3756	1,523.0045	1,320.7850	2.9752	422.5065	62.7977	480.3157	215.4600	57.7739	268.6444	0.0000	288,305.4710	288,305.4710	91.5013	0.1503	290,637.7860
2025	138.3905	1,314.4818	1,361.3933	4.0580	272.4452	53.1844	299.5480	79.3251	48.9297	128.2548	0.0000	414,424.8702	414,424.8702	91.4655	22.2768	422,075.0755
2026	129.3930	868.2975	1,336.8754	3.9851	272.4491	27.0437	299.4928	73.0861	25.4405	98.5266	0.0000	407,083.0908	407,083.0908	40.3075	21.7229	414,564.1996
2027	127.2571	862.5790	1,316.5577	3.9173	272.4528	26.9736	299.4263	73.0875	25.3755	98.4630	0.0000	400,198.5320	400,198.5320	40.1563	21.1856	407,515.7562
2028	125.2284	857.9077	1,299.6701	3.8557	272.4567	26.9032	299.3599	73.0889	25.3104	98.3993	0.0000	393,939.7381	393,939.7381	40.0596	20.6916	401,107.3169
2029	123.1449	852.5980	1,284.7469	3.7969	272.4606	26.8340	299.2946	73.0903	25.2462	98.3365	0.0000	387,942.9078	387,942.9078	39.9881	20.1927	394,960.0368
2030	118.6299	635.5325	1,276.0790	3.9335	272.4643	8.9393	281.4036	73.0917	8.8272	81.9188	0.0000	398,743.2730	398,743.2730	17.1467	19.7745	405,064.7289
2031	116.8620	632.4845	1,265.5638	3.8881	272.4674	8.8874	281.3548	73.0928	8.7791	81.8719	0.0000	394,095.6504	394,095.6504	17.0867	19.4048	400,305.4381
2032	115.2469	629.8265	1,256.5782	3.8480	272.4700	8.8383	281.3082	73.0938	8.7336	81.8273	0.0000	389,975.8315	389,975.8315	17.0375	19.0824	396,088.3355
2033	113.8018	627.4902	1,248.8788	3.8123	272.4724	8.7930	281.2654	73.0946	8.6916	81.7862	0.0000	386,283.2400	386,283.2400	16.9906	18.7938	392,308.5453
2034	112.4950	625.5102	1,241.9970	3.7805	272.4748	8.7526	281.2274	73.0955	8.6542	81.7497	0.0000	382,997.8826	382,997.8826	16.9491	18.5378	388,945.8672
2035	106.9182	587.2930	1,234.2007	3.7523	272.4772	6.0033	278.4805	73.0964	5.9076	79.0040	0.0000	380,060.6902	380,060.6902	16.5124	18.3076	385,929.1645
2036	106.9182	587.2930	1,234.2007	3.7523	272.4772	6.0033	278.4805	73.0964	5.9076	79.0040	0.0000	380,060.6902	380,060.6902	16.5124	18.3076	385,929.1645
2037	106.9182	587.2930	1,234.2007	3.7523	272.4772	6.0033	278.4805	73.0964	5.9076	79.0040	0.0000	380,060.6902	380,060.6902	16.5124	18.3076	385,929.1645
2038	106.9182	587.2930	1,234.2007	3.7523	272.4772	8.8208	278.4805	73.0964	8.8197	79.0040	0.0000	380,060.6902	380,060.6902	16.5124	18.3076	385,929.1645
2039	1,809.7095	229.7063	752.8685	1.3528	47.2102	8.8208	47.7827	12.5224	8.8197	13.0863	0.0000	128,355.4009	128,355.4009	4.8585	0.6566	128,500.8665
Maximum	**1,809.7095**	**1,523.0045**	**1,361.3933**	**4.0580**	**422.5065**	**62.7977**	**482.0408**	**215.4600**	**57.7739**	**270.2315**	**0.0000**	**414,424.8702**	**414,424.8702**	**91.5013**	**22.2768**	**422,075.0755**

Redwood City EIR - San Mateo County, Winter

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	20.10	0.00	19.40	29.51	0.00	25.53	0.00	0.00	0.00	0.00	0.00	0.00

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992
Energy	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050
Mobile	1,201.9755	1,053.2118	12,415.7116	22.7114	3,294.9075	10.4858	3,305.3933	877.5762	9.7866	887.3628		2,310,080.2427	2,310,080.2427	166.1035	110.3512	2,347,117.4723
Total	**35,881.9251**	**1,974.6530**	**53,107.6683**	**83.6675**	**3,294.9075**	**5,051.7929**	**8,346.7004**	**877.5762**	**5,051.0937**	**5,928.6699**	**489,154.2106**	**2,955,374.3840**	**3,444,528.5945**	**185.4516**	**165.2050**	**3,498,395.9764**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992
Energy	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050
Mobile	1,201.9755	1,053.2118	12,415.7116	22.7114	3,294.9075	10.4858	3,305.3933	877.5762	9.7866	887.3628		2,310,080.2427	2,310,080.2427	166.1035	110.3512	2,347,117.4723
Total	**35,881.9251**	**1,974.6530**	**53,107.6683**	**83.6675**	**3,294.9075**	**5,051.7929**	**8,346.7004**	**877.5762**	**5,051.0937**	**5,928.6699**	**489,154.2106**	**2,955,374.3840**	**3,444,528.5945**	**185.4516**	**165.2050**	**3,498,395.9764**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	10/25/2023	5	213	
2	Site Preparation	Site Preparation	10/26/2023	4/22/2024	5	128	
3	Grading	Grading	4/23/2024	7/28/2025	5	330	
4	Building Construction	Building Construction	7/29/2025	3/12/2038	5	3294	
5	Paving	Paving	3/13/2038	2/3/2039	5	234	
6	Architectural Coating	Architectural Coating	2/4/2039	12/28/2039	5	234	

Acres of Grading (Site Preparation Phase): 9024

Acres of Grading (Grading Phase): 46530

Acres of Paving: 0

Residential Indoor: 135,945,135; Residential Outdoor: 45,315,045; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	47	8.00	81	0.73
Demolition	Excavators	141	8.00	158	0.38
Demolition	Rubber Tired Dozers	94	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	141	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	188	8.00	97	0.37

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

Grading	Excavators	94	8.00	158	0.38
Grading	Graders	47	8.00	187	0.41
Grading	Rubber Tired Dozers	47	8.00	247	0.40
Grading	Scrapers	94	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	94	8.00	97	0.37
Building Construction	Cranes	47	7.00	231	0.29
Building Construction	Forklifts	141	8.00	89	0.20
Building Construction	Generator Sets	47	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	141	7.00	97	0.37
Building Construction	Welders	47	8.00	46	0.45
Paving	Pavers	94	8.00	130	0.42
Paving	Paving Equipment	94	8.00	132	0.36
Paving	Rollers	94	8.00	80	0.38
Architectural Coating	Air Compressors	47	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	282	705.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	329	823.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	376	940.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	423	28,733.00	5,386.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	282	705.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	47	5,747.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

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

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	106.6470	1,009.7674	923.2373	1.8250		46.8840	46.8840		43.6156	43.6156		176,108.2484	176,108.2484	49.3204		177,341.2592
Total	**106.6470**	**1,009.7674**	**923.2373**	**1.8250**		**46.8840**	**46.8840**		**43.6156**	**43.6156**		**176,108.2484**	**176,108.2484**	**49.3204**		**177,341.2592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6732	1.0769	14.2001	0.0448	5.7914	0.0268	5.8182	1.5362	0.0247	1.5608		4,532.8209	4,532.8209	0.1228	0.1206	4,571.8408
Total	**1.6732**	**1.0769**	**14.2001**	**0.0448**	**5.7914**	**0.0268**	**5.8182**	**1.5362**	**0.0247**	**1.5608**		**4,532.8209**	**4,532.8209**	**0.1228**	**0.1206**	**4,571.8408**

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

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	106.6470	1,009.7674	923.2373	1.8250		46.8840	46.8840		43.6156	43.6156	0.0000	176,108.2482	176,108.2482	49.3204		177,341.2591
Total	**106.6470**	**1,009.7674**	**923.2373**	**1.8250**		**46.8840**	**46.8840**		**43.6156**	**43.6156**	**0.0000**	**176,108.2482**	**176,108.2482**	**49.3204**		**177,341.2591**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6732	1.0769	14.2001	0.0448	5.7914	0.0268	5.8182	1.5362	0.0247	1.5608		4,532.8209	4,532.8209	0.1228	0.1206	4,571.8408
Total	**1.6732**	**1.0769**	**14.2001**	**0.0448**	**5.7914**	**0.0268**	**5.8182**	**1.5362**	**0.0247**	**1.5608**		**4,532.8209**	**4,532.8209**	**0.1228**	**0.1206**	**4,571.8408**

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

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					923.8794	0.0000	923.8794	474.8150	0.0000	474.8150			0.0000			0.0000
Off-Road	124.9940	1,293.6361	857.4830	1.7892		59.5030	59.5030		54.7428	54.7428		173,303.4806	173,303.4806	56.0499		174,704.7271
Total	**124.9940**	**1,293.6361**	**857.4830**	**1.7892**	**923.8794**	**59.5030**	**983.3824**	**474.8150**	**54.7428**	**529.5577**		**173,303.4806**	**173,303.4806**	**56.0499**		**174,704.7271**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9533	1.2571	16.5769	0.0524	6.7608	0.0313	6.7920	1.7933	0.0288	1.8220		5,291.5059	5,291.5059	0.1433	0.1408	5,337.0567
Total	**1.9533**	**1.2571**	**16.5769**	**0.0524**	**6.7608**	**0.0313**	**6.7920**	**1.7933**	**0.0288**	**1.8220**		**5,291.5059**	**5,291.5059**	**0.1433**	**0.1408**	**5,337.0567**

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

3.3 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					415.7457	0.0000	415.7457	213.6667	0.0000	213.6667			0.0000			0.0000
Off-Road	124.9940	1,293.6361	857.4829	1.7892		59.5030	59.5030		54.7428	54.7428	0.0000	173,303.4805	173,303.4805	56.0499		174,704.7269
Total	**124.9940**	**1,293.6361**	**857.4829**	**1.7892**	**415.7457**	**59.5030**	**475.2487**	**213.6667**	**54.7428**	**268.4095**	**0.0000**	**173,303.4805**	**173,303.4805**	**56.0499**		**174,704.7269**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9533	1.2571	16.5769	0.0524	6.7608	0.0313	6.7920	1.7933	0.0288	1.8220		5,291.5059	5,291.5059	0.1433	0.1408	5,337.0567
Total	**1.9533**	**1.2571**	**16.5769**	**0.0524**	**6.7608**	**0.0313**	**6.7920**	**1.7933**	**0.0288**	**1.8220**		**5,291.5059**	**5,291.5059**	**0.1433**	**0.1408**	**5,337.0567**

Redwood City EIR - San Mateo County, Winter

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

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					923.8794	0.0000	923.8794	474.8150	0.0000	474.8150			0.0000			0.0000
Off-Road	125.0625	1,277.2718	861.7748	1.7895		57.7794	57.7794		53.1571	53.1571		173,336.4677	173,336.4677	56.0605		174,737.9808
Total	**125.0625**	**1,277.2718**	**861.7748**	**1.7895**	**923.8794**	**57.7794**	**981.6588**	**474.8150**	**53.1571**	**527.9720**		**173,336.4677**	**173,336.4677**	**56.0605**		**174,737.9808**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8588	1.1273	15.5958	0.0507	6.7608	0.0298	6.7905	1.7933	0.0274	1.8207		5,119.4833	5,119.4833	0.1301	0.1316	5,161.9444
Total	**1.8588**	**1.1273**	**15.5958**	**0.0507**	**6.7608**	**0.0298**	**6.7905**	**1.7933**	**0.0274**	**1.8207**		**5,119.4833**	**5,119.4833**	**0.1301**	**0.1316**	**5,161.9444**

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

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					415.7457	0.0000	415.7457	213.6667	0.0000	213.6667			0.0000			0.0000
Off-Road	125.0625	1,277.2718	861.7748	1.7895		57.7794	57.7794		53.1571	53.1571	0.0000	173,336.4676	173,336.4676	56.0605		174,737.9807
Total	**125.0625**	**1,277.2718**	**861.7748**	**1.7895**	**415.7457**	**57.7794**	**473.5252**	**213.6667**	**53.1571**	**266.8238**	**0.0000**	**173,336.4676**	**173,336.4676**	**56.0605**		**174,737.9807**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8588	1.1273	15.5958	0.0507	6.7608	0.0298	6.7905	1.7933	0.0274	1.8207		5,119.4833	5,119.4833	0.1301	0.1316	5,161.9444
Total	**1.8588**	**1.1273**	**15.5958**	**0.0507**	**6.7608**	**0.0298**	**6.7905**	**1.7933**	**0.0274**	**1.8207**		**5,119.4833**	**5,119.4833**	**0.1301**	**0.1316**	**5,161.9444**

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

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					432.5686	0.0000	432.5686	171.7265	0.0000	171.7265			0.0000			0.0000
Off-Road	151.2526	1,521.7170	1,302.9721	2.9173		62.7637	62.7637		57.7426	57.7426		282,458.1878	282,458.1878	91.3527		284,742.0053
Total	**151.2526**	**1,521.7170**	**1,302.9721**	**2.9173**	**432.5686**	**62.7637**	**495.3323**	**171.7265**	**57.7426**	**229.4691**		**282,458.1878**	**282,458.1878**	**91.3527**		**284,742.0053**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1230	1.2875	17.8130	0.0579	7.7219	0.0340	7.7559	2.0482	0.0313	2.0795		5,847.2835	5,847.2835	0.1486	0.1503	5,895.7810
Total	**2.1230**	**1.2875**	**17.8130**	**0.0579**	**7.7219**	**0.0340**	**7.7559**	**2.0482**	**0.0313**	**2.0795**		**5,847.2835**	**5,847.2835**	**0.1486**	**0.1503**	**5,895.7810**

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

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					194.6559	0.0000	194.6559	77.2769	0.0000	77.2769			0.0000			0.0000
Off-Road	151.2526	1,521.7170	1,302.9721	2.9173		62.7637	62.7637		57.7426	57.7426	0.0000	282,458.1875	282,458.1875	91.3527		284,742.0050
Total	**151.2526**	**1,521.7170**	**1,302.9721**	**2.9173**	**194.6559**	**62.7637**	**257.4196**	**77.2769**	**57.7426**	**135.0196**	**0.0000**	**282,458.1875**	**282,458.1875**	**91.3527**		**284,742.0050**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1230	1.2875	17.8130	0.0579	7.7219	0.0340	7.7559	2.0482	0.0313	2.0795		5,847.2835	5,847.2835	0.1486	0.1503	5,895.7810
Total	**2.1230**	**1.2875**	**17.8130**	**0.0579**	**7.7219**	**0.0340**	**7.7559**	**2.0482**	**0.0313**	**2.0795**		**5,847.2835**	**5,847.2835**	**0.1486**	**0.1503**	**5,895.7810**

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

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					432.5686	0.0000	432.5686	171.7265	0.0000	171.7265			0.0000			0.0000
Off-Road	136.3584	1,313.3158	1,237.5614	2.9170		53.1519	53.1519		48.8998	48.8998		282,389.2276	282,389.2276	91.3304		284,672.4875
Total	**136.3584**	**1,313.3158**	**1,237.5614**	**2.9170**	**432.5686**	**53.1519**	**485.7205**	**171.7265**	**48.8998**	**220.6262**		**282,389.2276**	**282,389.2276**	**91.3304**		**284,672.4875**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0321	1.1660	16.7956	0.0559	7.7219	0.0325	7.7544	2.0482	0.0299	2.0781		5,651.9030	5,651.9030	0.1351	0.1412	5,697.3709
Total	**2.0321**	**1.1660**	**16.7956**	**0.0559**	**7.7219**	**0.0325**	**7.7544**	**2.0482**	**0.0299**	**2.0781**		**5,651.9030**	**5,651.9030**	**0.1351**	**0.1412**	**5,697.3709**

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

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					194.6559	0.0000	194.6559	77.2769	0.0000	77.2769			0.0000			0.0000
Off-Road	136.3584	1,313.3158	1,237.5614	2.9170		53.1519	53.1519		48.8998	48.8998	0.0000	282,389.2273	282,389.2273	91.3304		284,672.4873
Total	**136.3584**	**1,313.3158**	**1,237.5614**	**2.9170**	**194.6559**	**53.1519**	**247.8078**	**77.2769**	**48.8998**	**126.1767**	**0.0000**	**282,389.2273**	**282,389.2273**	**91.3304**		**284,672.4873**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0321	1.1660	16.7956	0.0559	7.7219	0.0325	7.7544	2.0482	0.0299	2.0781		5,651.9030	5,651.9030	0.1351	0.1412	5,697.3709
Total	**2.0321**	**1.1660**	**16.7956**	**0.0559**	**7.7219**	**0.0325**	**7.7544**	**2.0482**	**0.0299**	**2.0781**		**5,651.9030**	**5,651.9030**	**0.1351**	**0.1412**	**5,697.3709**

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

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3478	252.7256	92.0224	1.0817	36.4104	1.3148	37.7252	10.4773	1.2576	11.7349		121,508.7358	121,508.7358	8.0938	17.9595	127,063.0098
Worker	62.1156	35.6410	513.3917	1.7091	236.0348	0.9927	237.0275	62.6074	0.9136	63.5211		172,761.8396	172,761.8396	4.1307	4.3173	174,151.6566
Total	**67.4633**	**288.3666**	**605.4141**	**2.7909**	**272.4452**	**2.3075**	**274.7528**	**73.0847**	**2.1712**	**75.2559**		**294,270.5753**	**294,270.5753**	**12.2245**	**22.2768**	**301,214.6663**

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

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.3478	252.7256	92.0224	1.0817	36.4104	1.3148	37.7252	10.4773	1.2576	11.7349		121,508.7358	121,508.7358	8.0938	17.9595	127,063.0098
Worker	62.1156	35.6410	513.3917	1.7091	236.0348	0.9927	237.0275	62.6074	0.9136	63.5211		172,761.8396	172,761.8396	4.1307	4.3173	174,151.6566
Total	**67.4633**	**288.3666**	**605.4141**	**2.7909**	**272.4452**	**2.3075**	**274.7528**	**73.0847**	**2.1712**	**75.2559**		**294,270.5753**	**294,270.5753**	**12.2245**	**22.2768**	**301,214.6663**

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

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2089	249.4954	92.3213	1.0581	36.4143	1.3066	37.7208	10.4787	1.2497	11.7284		119,151.3292	119,151.3292	8.2737	17.6230	124,609.8215
Worker	59.9165	32.7270	488.5749	1.6598	236.0348	0.9419	236.9767	62.6074	0.8668	63.4743		167,777.4668	167,777.4668	3.7893	4.0999	169,093.9690
Total	**65.1254**	**282.2224**	**580.8962**	**2.7179**	**272.4491**	**2.2485**	**274.6975**	**73.0861**	**2.1165**	**75.2026**		**286,928.7960**	**286,928.7960**	**12.0629**	**21.7229**	**293,703.7905**

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

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2089	249.4954	92.3213	1.0581	36.4143	1.3066	37.7208	10.4787	1.2497	11.7284		119,151.3292	119,151.3292	8.2737	17.6230	124,609.8215
Worker	59.9165	32.7270	488.5749	1.6598	236.0348	0.9419	236.9767	62.6074	0.8668	63.4743		167,777.4668	167,777.4668	3.7893	4.0999	169,093.9690
Total	**65.1254**	**282.2224**	**580.8962**	**2.7179**	**272.4491**	**2.2485**	**274.6975**	**73.0861**	**2.1165**	**75.2026**		**286,928.7960**	**286,928.7960**	**12.0629**	**21.7229**	**293,703.7905**

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

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0876	246.1562	92.5409	1.0334	36.4180	1.2956	37.7136	10.4800	1.2393	11.7193		116,615.0090	116,615.0090	8.4100	17.2614	121,969.1560
Worker	57.9019	30.3476	468.0376	1.6168	236.0348	0.8827	236.9175	62.6074	0.8123	63.4197		163,429.2281	163,429.2281	3.5017	3.9242	164,686.1911
Total	**62.9895**	**276.5038**	**560.5785**	**2.6502**	**272.4528**	**2.1783**	**274.6311**	**73.0875**	**2.0515**	**75.1390**		**280,044.2371**	**280,044.2371**	**11.9118**	**21.1856**	**286,655.3471**

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

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0876	246.1562	92.5409	1.0334	36.4180	1.2956	37.7136	10.4800	1.2393	11.7193		116,615.0090	116,615.0090	8.4100	17.2614	121,969.1560
Worker	57.9019	30.3476	468.0376	1.6168	236.0348	0.8827	236.9175	62.6074	0.8123	63.4197		163,429.2281	163,429.2281	3.5017	3.9242	164,686.1911
Total	**62.9895**	**276.5038**	**560.5785**	**2.6502**	**272.4528**	**2.1783**	**274.6311**	**73.0875**	**2.0515**	**75.1390**		**280,044.2371**	**280,044.2371**	**11.9118**	**21.1856**	**286,655.3471**

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

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0003	243.4552	93.0394	1.0099	36.4219	1.2866	37.7085	10.4815	1.2306	11.7121		114,208.3022	114,208.3022	8.5619	16.9124	119,462.2320
Worker	55.9605	28.3774	450.6515	1.5787	236.0348	0.8214	236.8562	62.6074	0.7558	63.3633		159,577.1410	159,577.1410	3.2531	3.7792	160,784.6757
Total	**60.9608**	**271.8326**	**543.6909**	**2.5886**	**272.4567**	**2.1080**	**274.5647**	**73.0889**	**1.9864**	**75.0753**		**273,785.4432**	**273,785.4432**	**11.8150**	**20.6916**	**280,246.9077**

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

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0003	243.4552	93.0394	1.0099	36.4219	1.2866	37.7085	10.4815	1.2306	11.7121		114,208.3022	114,208.3022	8.5619	16.9124	119,462.2320
Worker	55.9605	28.3774	450.6515	1.5787	236.0348	0.8214	236.8562	62.6074	0.7558	63.3633		159,577.1410	159,577.1410	3.2531	3.7792	160,784.6757
Total	**60.9608**	**271.8326**	**543.6909**	**2.5886**	**272.4567**	**2.1080**	**274.5647**	**73.0889**	**1.9864**	**75.0753**		**273,785.4432**	**273,785.4432**	**11.8150**	**20.6916**	**280,246.9077**

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

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240		120,154.2950	120,154.2950	28.2446		120,860.4092
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**		**120,154.2950**	**120,154.2950**	**28.2446**		**120,860.4092**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9180	239.8370	93.5020	0.9849	36.4258	1.2715	37.6974	10.4829	1.2162	11.6991		111,636.6030	111,636.6030	8.7105	16.5358	116,782.0417
Worker	53.9594	26.6858	435.2657	1.5448	236.0348	0.7673	236.8020	62.6074	0.7060	63.3134		156,152.0099	156,152.0099	3.0330	3.6569	157,317.5859
Total	**58.8774**	**266.5228**	**528.7677**	**2.5297**	**272.4606**	**2.0388**	**274.4994**	**73.0903**	**1.9222**	**75.0125**		**267,788.6129**	**267,788.6129**	**11.7435**	**20.1927**	**274,099.6277**

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

3.5 Building Construction - 2029

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	64.2676	586.0751	755.9792	1.2672		24.7952	24.7952		23.3240	23.3240	0.0000	120,154.2949	120,154.2949	28.2446		120,860.4091
Total	**64.2676**	**586.0751**	**755.9792**	**1.2672**		**24.7952**	**24.7952**		**23.3240**	**23.3240**	**0.0000**	**120,154.2949**	**120,154.2949**	**28.2446**		**120,860.4091**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9180	239.8370	93.5020	0.9849	36.4258	1.2715	37.6974	10.4829	1.2162	11.6991		111,636.6030	111,636.6030	8.7105	16.5358	116,782.0417
Worker	53.9594	26.6858	435.2657	1.5448	236.0348	0.7673	236.8020	62.6074	0.7060	63.3134		156,152.0099	156,152.0099	3.0330	3.6569	157,317.5859
Total	**58.8774**	**266.5228**	**528.7677**	**2.5297**	**272.4606**	**2.0388**	**274.4994**	**73.0903**	**1.9222**	**75.0125**		**267,788.6129**	**267,788.6129**	**11.7435**	**20.1927**	**274,099.6277**

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

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8524	237.2518	94.0661	0.9637	36.4295	1.2575	37.6869	10.4842	1.2027	11.6870		109,434.8493	109,434.8493	8.8404	16.2155	114,488.0735
Worker	52.2483	25.3537	422.6347	1.5148	236.0348	0.7192	236.7540	62.6074	0.6618	63.2693		153,123.7265	153,123.7265	2.8428	3.5590	154,255.3709
Total	**57.1007**	**262.6054**	**516.7007**	**2.4785**	**272.4643**	**1.9767**	**274.4410**	**73.0917**	**1.8645**	**74.9562**		**262,558.5759**	**262,558.5759**	**11.6832**	**19.7745**	**268,743.4444**

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

3.5 Building Construction - 2030

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8524	237.2518	94.0661	0.9637	36.4295	1.2575	37.6869	10.4842	1.2027	11.6870		109,434.8493	109,434.8493	8.8404	16.2155	114,488.0735
Worker	52.2483	25.3537	422.6347	1.5148	236.0348	0.7192	236.7540	62.6074	0.6618	63.2693		153,123.7265	153,123.7265	2.8428	3.5590	154,255.3709
Total	**57.1007**	**262.6054**	**516.7007**	**2.4785**	**272.4643**	**1.9767**	**274.4410**	**73.0917**	**1.8645**	**74.9562**		**262,558.5759**	**262,558.5759**	**11.6832**	**19.7745**	**268,743.4444**

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

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8109	235.3413	94.6730	0.9448	36.4326	1.2496	37.6823	10.4854	1.1952	11.6806		107,467.4577	107,467.4577	8.9490	15.9276	112,437.5984
Worker	50.5219	24.2161	411.5125	1.4883	236.0348	0.6752	236.7099	62.6074	0.6213	63.2287		150,443.4956	150,443.4956	2.6741	3.4772	151,546.5552
Total	**55.3328**	**259.5574**	**506.1856**	**2.4332**	**272.4674**	**1.9248**	**274.3922**	**73.0928**	**1.8165**	**74.9093**		**257,910.9533**	**257,910.9533**	**11.6232**	**19.4048**	**263,984.1536**

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

3.5 Building Construction - 2031

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.8109	235.3413	94.6730	0.9448	36.4326	1.2496	37.6823	10.4854	1.1952	11.6806		107,467.4577	107,467.4577	8.9490	15.9276	112,437.5984
Worker	50.5219	24.2161	411.5125	1.4883	236.0348	0.6752	236.7099	62.6074	0.6213	63.2287		150,443.4956	150,443.4956	2.6741	3.4772	151,546.5552
Total	**55.3328**	**259.5574**	**506.1856**	**2.4332**	**272.4674**	**1.9248**	**274.3922**	**73.0928**	**1.8165**	**74.9093**		**257,910.9533**	**257,910.9533**	**11.6232**	**19.4048**	**263,984.1536**

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

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7800	233.6016	95.3195	0.9281	36.4352	1.2409	37.6760	10.4863	1.1869	11.6732		105,711.8647	105,711.8647	9.0481	15.6713	110,608.1250
Worker	48.9378	23.2977	401.8805	1.4649	236.0348	0.6347	236.6695	62.6074	0.5841	63.1915		148,079.2697	148,079.2697	2.5259	3.4111	149,158.9260
Total	**53.7178**	**256.8994**	**497.2000**	**2.3931**	**272.4700**	**1.8756**	**274.3456**	**73.0938**	**1.7709**	**74.8647**		**253,791.1344**	**253,791.1344**	**11.5740**	**19.0824**	**259,767.0510**

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

3.5 Building Construction - 2032

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7800	233.6016	95.3195	0.9281	36.4352	1.2409	37.6760	10.4863	1.1869	11.6732		105,711.8647	105,711.8647	9.0481	15.6713	110,608.1250
Worker	48.9378	23.2977	401.8805	1.4649	236.0348	0.6347	236.6695	62.6074	0.5841	63.1915		148,079.2697	148,079.2697	2.5259	3.4111	149,158.9260
Total	**53.7178**	**256.8994**	**497.2000**	**2.3931**	**272.4700**	**1.8756**	**274.3456**	**73.0938**	**1.7709**	**74.8647**		**253,791.1344**	**253,791.1344**	**11.5740**	**19.0824**	**259,767.0510**

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

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7623	231.9950	95.9688	0.9129	36.4376	1.2323	37.6699	10.4872	1.1786	11.6658		104,093.1884	104,093.1884	9.1309	15.4355	108,921.2340
Worker	47.5103	22.5682	393.5318	1.4444	236.0348	0.5981	236.6329	62.6074	0.5504	63.1578		146,005.3545	146,005.3545	2.3962	3.3583	147,066.0269
Total	**52.2727**	**254.5631**	**489.5006**	**2.3573**	**272.4724**	**1.8304**	**274.3027**	**73.0946**	**1.7290**	**74.8236**		**250,098.5429**	**250,098.5429**	**11.5271**	**18.7938**	**255,987.2609**

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

3.5 Building Construction - 2033

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7623	231.9950	95.9688	0.9129	36.4376	1.2323	37.6699	10.4872	1.1786	11.6658		104,093.1884	104,093.1884	9.1309	15.4355	108,921.2340
Worker	47.5103	22.5682	393.5318	1.4444	236.0348	0.5981	236.6329	62.6074	0.5504	63.1578		146,005.3545	146,005.3545	2.3962	3.3583	147,066.0269
Total	**52.2727**	**254.5631**	**489.5006**	**2.3573**	**272.4724**	**1.8304**	**274.3027**	**73.0946**	**1.7290**	**74.8236**		**250,098.5429**	**250,098.5429**	**11.5271**	**18.7938**	**255,987.2609**

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

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3783	1.4550		6.9626	6.9626		6.9626	6.9626		136,184.6972	136,184.6972	5.4635		136,321.2846
Total	**61.5292**	**372.9271**	**759.3783**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**		**136,184.6972**	**136,184.6972**	**5.4635**		**136,321.2846**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7530	230.6084	96.5433	0.8991	36.4400	1.2253	37.6653	10.4881	1.1720	11.6601		102,624.8505	102,624.8505	9.2052	15.2223	107,391.2281
Worker	46.2128	21.9747	386.0754	1.4264	236.0348	0.5646	236.5994	62.6074	0.5196	63.1270		144,188.3350	144,188.3350	2.2805	3.3155	145,233.3546
Total	**50.9658**	**252.5831**	**482.6187**	**2.3255**	**272.4748**	**1.7899**	**274.2647**	**73.0955**	**1.6916**	**74.7871**		**246,813.1855**	**246,813.1855**	**11.4856**	**18.5378**	**252,624.5827**

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

3.5 Building Construction - 2034

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	61.5292	372.9271	759.3782	1.4550		6.9626	6.9626		6.9626	6.9626	0.0000	136,184.6971	136,184.6971	5.4635		136,321.2845
Total	**61.5292**	**372.9271**	**759.3782**	**1.4550**		**6.9626**	**6.9626**		**6.9626**	**6.9626**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.4635**		**136,321.2845**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7530	230.6084	96.5433	0.8991	36.4400	1.2253	37.6653	10.4881	1.1720	11.6601		102,624.8505	102,624.8505	9.2052	15.2223	107,391.2281
Worker	46.2128	21.9747	386.0754	1.4264	236.0348	0.5646	236.5994	62.6074	0.5196	63.1270		144,188.3350	144,188.3350	2.2805	3.3155	145,233.3546
Total	**50.9658**	**252.5831**	**482.6187**	**2.3255**	**272.4748**	**1.7899**	**274.2647**	**73.0955**	**1.6916**	**74.7871**		**246,813.1855**	**246,813.1855**	**11.4856**	**18.5378**	**252,624.5827**

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

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2035

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2037

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495		136,184.6972	136,184.6972	5.0723		136,311.5039
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**		**136,184.6972**	**136,184.6972**	**5.0723**		**136,311.5039**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.5 Building Construction - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	57.1899	336.5819	757.5353	1.4550		4.2495	4.2495		4.2495	4.2495	0.0000	136,184.6971	136,184.6971	5.0723		136,311.5037
Total	**57.1899**	**336.5819**	**757.5353**	**1.4550**		**4.2495**	**4.2495**		**4.2495**	**4.2495**	**0.0000**	**136,184.6971**	**136,184.6971**	**5.0723**		**136,311.5037**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7476	229.1887	97.0225	0.8865	36.4424	1.2193	37.6617	10.4889	1.1662	11.6551		101,266.0445	101,266.0445	9.2609	15.0249	105,974.9860
Worker	44.9807	21.5224	379.6429	1.4108	236.0348	0.5345	236.5693	62.6074	0.4919	63.0993		142,609.9486	142,609.9486	2.1793	3.2827	143,642.6748
Total	**49.7283**	**250.7111**	**476.6654**	**2.2973**	**272.4772**	**1.7538**	**274.2310**	**73.0964**	**1.6581**	**74.7545**		**243,875.9931**	**243,875.9931**	**11.4402**	**18.3076**	**249,617.6608**

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

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076		124,856.2880	124,856.2880	4.8051		124,976.4144
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**		**124,856.2880**	**124,856.2880**	**4.8051**		**124,976.4144**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1037	0.5281	9.3150	0.0346	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,499.1130	3,499.1130	0.0535	0.0806	3,524.4522
Total	**1.1037**	**0.5281**	**9.3150**	**0.0346**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,499.1130**	**3,499.1130**	**0.0535**	**0.0806**	**3,524.4522**

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

3.6 Paving - 2038

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076	0.0000	124,856.2879	124,856.2879	4.8051		124,976.4143
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**	**0.0000**	**124,856.2879**	**124,856.2879**	**4.8051**		**124,976.4143**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1037	0.5281	9.3150	0.0346	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,499.1130	3,499.1130	0.0535	0.0806	3,524.4522
Total	**1.1037**	**0.5281**	**9.3150**	**0.0346**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,499.1130**	**3,499.1130**	**0.0535**	**0.0806**	**3,524.4522**

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

3.6 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076		124,856.2880	124,856.2880	4.8051		124,976.4144
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**		**124,856.2880**	**124,856.2880**	**4.8051**		**124,976.4144**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1037	0.5281	9.3150	0.0346	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,499.1130	3,499.1130	0.0535	0.0806	3,524.4522
Total	**1.1037**	**0.5281**	**9.3150**	**0.0346**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,499.1130**	**3,499.1130**	**0.0535**	**0.0806**	**3,524.4522**

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

3.6 Paving - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	53.6038	229.1782	743.5534	1.3182		8.8076	8.8076		8.8076	8.8076	0.0000	124,856.2879	124,856.2879	4.8051		124,976.4143
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**53.6038**	**229.1782**	**743.5534**	**1.3182**		**8.8076**	**8.8076**		**8.8076**	**8.8076**	**0.0000**	**124,856.2879**	**124,856.2879**	**4.8051**		**124,976.4143**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1037	0.5281	9.3150	0.0346	5.7914	0.0131	5.8045	1.5362	0.0121	1.5482		3,499.1130	3,499.1130	0.0535	0.0806	3,524.4522
Total	**1.1037**	**0.5281**	**9.3150**	**0.0346**	**5.7914**	**0.0131**	**5.8045**	**1.5362**	**0.0121**	**1.5482**		**3,499.1130**	**3,499.1130**	**0.0535**	**0.0806**	**3,524.4522**

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

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1,795.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	5.5398	35.6132	84.3311	0.1397		0.4655	0.4655		0.4655	0.4655		13,228.0583	13,228.0583	0.4888		13,240.2785
Total	**1,800.7128**	**35.6132**	**84.3311**	**0.1397**		**0.4655**	**0.4655**		**0.4655**	**0.4655**		**13,228.0583**	**13,228.0583**	**0.4888**		**13,240.2785**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9968	4.3048	75.9339	0.2822	47.2102	0.1069	47.3172	12.5224	0.0984	12.6208		28,523.9750	28,523.9750	0.4359	0.6566	28,730.5346
Total	**8.9968**	**4.3048**	**75.9339**	**0.2822**	**47.2102**	**0.1069**	**47.3172**	**12.5224**	**0.0984**	**12.6208**		**28,523.9750**	**28,523.9750**	**0.4359**	**0.6566**	**28,730.5346**

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

3.7 Architectural Coating - 2039

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1,795.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	5.5398	35.6132	84.3311	0.1397		0.4655	0.4655		0.4655	0.4655	0.0000	13,228.0583	13,228.0583	0.4888		13,240.2785
Total	**1,800.7128**	**35.6132**	**84.3311**	**0.1397**		**0.4655**	**0.4655**		**0.4655**	**0.4655**	**0.0000**	**13,228.0583**	**13,228.0583**	**0.4888**		**13,240.2785**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9968	4.3048	75.9339	0.2822	47.2102	0.1069	47.3172	12.5224	0.0984	12.6208		28,523.9750	28,523.9750	0.4359	0.6566	28,730.5346
Total	**8.9968**	**4.3048**	**75.9339**	**0.2822**	**47.2102**	**0.1069**	**47.3172**	**12.5224**	**0.0984**	**12.6208**		**28,523.9750**	**28,523.9750**	**0.4359**	**0.6566**	**28,730.5346**

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1,201.9755	1,053.2118	12,415.7116	22.7114	3,294.9075	10.4858	3,305.3933	877.5762	9.7866	887.3628		2,310,080.2427	2,310,080.2427	166.1035	110.3512	2,347,117.4723
Unmitigated	1,201.9755	1,053.2118	12,415.7116	22.7114	3,294.9075	10.4858	3,305.3933	877.5762	9.7866	887.3628		2,310,080.2427	2,310,080.2427	166.1035	110.3512	2,347,117.4723

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Condo/Townhouse	0.00	0.00	0.00		
Single Family Housing	678,134.34	678,134.34	677924.91	1,566,154,922	1,566,154,922
Total	678,134.34	678,134.34	677,924.91	1,566,154,922	1,566,154,922

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Condo/Townhouse	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Single Family Housing	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050
NaturalGas Unmitigated	36.6089	312.8399	133.1234	1.9969		25.2934	25.2934		25.2934	25.2934		399,370.0485	399,370.0485	7.6546	7.3218	401,743.3050

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	340450	3.6715	31.3748	13.3510	0.2003		2.5367	2.5367		2.5367	2.5367		40,052.9319	40,052.9319	0.7677	0.7343	40,290.9464
Condo/Townhouse	839910	9.0579	77.4035	32.9376	0.4941		6.2582	6.2582		6.2582	6.2582		98,812.9280	98,812.9280	1.8939	1.8116	99,400.1239
Single Family Housing	2.21429e+006	23.8796	204.0616	86.8347	1.3025		16.4986	16.4986		16.4986	16.4986		260,504.1886	260,504.1886	4.9930	4.7759	262,052.2347
Total		**36.6089**	**312.8399**	**133.1234**	**1.9968**		**25.2934**	**25.2934**		**25.2934**	**25.2934**		**399,370.0485**	**399,370.0485**	**7.6546**	**7.3218**	**401,743.3050**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	340.45	3.6715	31.3748	13.3510	0.2003		2.5367	2.5367		2.5367	2.5367		40,052.9319	40,052.9319	0.7677	0.7343	40,290.9464
Condo/Townhouse	839.91	9.0579	77.4035	32.9376	0.4941		6.2582	6.2582		6.2582	6.2582		98,812.9280	98,812.9280	1.8939	1.8116	99,400.1239
Single Family Housing	2214.29	23.8796	204.0616	86.8347	1.3025		16.4986	16.4986		16.4986	16.4986		260,504.1886	260,504.1886	4.9930	4.7759	262,052.2347
Total		**36.6089**	**312.8399**	**133.1234**	**1.9968**		**25.2934**	**25.2934**		**25.2934**	**25.2934**		**399,370.0485**	**399,370.0485**	**7.6546**	**7.3218**	**401,743.3050**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992
Unmitigated	34,643.3407	608.6014	40,558.8334	58.9592		5,016.0137	5,016.0137		5,016.0137	5,016.0137	489,154.2106	245,924.0928	735,078.3033	11.6936	47.5321	749,535.1992

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	115.0878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,436.6548					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	32,967.8318	560.8372	36,420.7605	58.7398		4,992.9647	4,992.9647		4,992.9647	4,992.9647	489,154.2106	238,440.1765	727,594.3870	4.5701	47.5321	741,873.1961
Landscaping	123.7663	47.7641	4,138.0728	0.2195		23.0491	23.0491		23.0491	23.0491		7,483.9163	7,483.9163	7.1235		7,662.0030
Total	**34,643.3407**	**608.6014**	**40,558.8334**	**58.9592**		**5,016.0137**	**5,016.0137**		**5,016.0137**	**5,016.0137**	**489,154.2106**	**245,924.0928**	**735,078.3033**	**11.6936**	**47.5321**	**749,535.1992**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	115.0878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1,436.6548					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	32,967.8318	560.8372	36,420.7605	58.7398		4,992.9647	4,992.9647		4,992.9647	4,992.9647	489,154.2106	238,440.1765	727,594.3870	4.5701	47.5321	741,873.1961
Landscaping	123.7663	47.7641	4,138.0728	0.2195		23.0491	23.0491		23.0491	23.0491		7,483.9163	7,483.9163	7.1235		7,662.0030
Total	**34,643.3407**	**608.6014**	**40,558.8334**	**58.9592**		**5,016.0137**	**5,016.0137**		**5,016.0137**	**5,016.0137**	**489,154.2106**	**245,924.0928**	**735,078.3033**	**11.6936**	**47.5321**	**749,535.1992**

7.0 Water Detail

7.1 Mitigation Measures Water

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Redwood City EIR - San Mateo County, Annual

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

Redwood City EIR

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	14,718.00	Dwelling Unit	387.32	14,718,000.00	34236
Condo/Townhouse	14,718.00	Dwelling Unit	919.88	14,718,000.00	34236
Single Family Housing	20,943.00	Dwelling Unit	6,799.68	37,697,400.00	62875

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2040
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Per City estimates

Construction Phase - Phases proportionally shortened for 2040 end date

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Off-road Equipment - Proportionally increased based on phase length reductions

Redwood City EIR - San Mateo County, Annual

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

Off-road Equipment - Proportionally increased based on phase length reductions

Grading -

Architectural Coating - BAAQMD Regulation 8 Rule 3

Vehicle Trips - Per VMT Summary from MIG

Woodstoves - No woodstoves

Area Coating - BAAQMD Regulation 8 Rule 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	100.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	150.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	100
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	150	100
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	155,000.00	3,294.00
tblConstructionPhase	NumDays	10,000.00	213.00
tblConstructionPhase	NumDays	15,500.00	330.00
tblConstructionPhase	NumDays	11,000.00	234.00
tblConstructionPhase	NumDays	6,000.00	128.00
tblLandUse	Population	42,093.00	34,236.00
tblLandUse	Population	42,093.00	34,236.00
tblLandUse	Population	59,897.00	62,875.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00

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

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	141.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	94.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	188.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	47.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	ST_TR	8.14	0.00
tblVehicleTrips	ST_TR	9.54	32.38
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	6.28	0.00
tblVehicleTrips	SU_TR	8.55	32.37
tblVehicleTrips	WD_TR	5.44	0.00
tblVehicleTrips	WD_TR	7.32	0.00
tblVehicleTrips	WD_TR	9.44	32.38
tblWoodstoves	NumberCatalytic	294.36	0.00
tblWoodstoves	NumberCatalytic	294.36	0.00

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

tblWoodstoves	NumberCatalytic	837.72	0.00
tblWoodstoves	NumberNoncatalytic	294.36	0.00
tblWoodstoves	NumberNoncatalytic	294.36	0.00
tblWoodstoves	NumberNoncatalytic	837.72	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	21.06	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

Redwood City EIR - San Mateo County, Annual

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	14.4987	138.0736	120.3063	0.2424	25.4825	6.3951	31.8776	11.6829	5.9348	17.6177	0.0000	21,261.8327	21,261.8327	5.9741	0.0139	21,415.3186
2024	18.9953	189.5943	154.9788	0.3438	90.3937	8.0245	98.4182	36.4119	7.3825	43.7944	0.0000	30,228.6791	30,228.6791	9.5758	0.0163	30,472.9174
2025	17.3326	146.4799	168.4463	0.4490	60.9466	5.4797	66.4263	18.3420	5.0728	23.4147	0.0000	40,547.3880	40,547.3880	8.2257	1.1283	41,089.2649
2026	16.1013	112.3869	171.7877	0.5207	34.1085	3.5287	37.6371	9.1828	3.3195	12.5022	0.0000	48,249.7633	48,249.7633	4.7474	2.5441	49,126.5943
2027	15.8311	111.6669	169.2262	0.5118	34.1090	3.5196	37.6285	9.1830	3.3110	12.4940	0.0000	47,432.6894	47,432.6894	4.7313	2.4816	48,290.4946
2028	15.5168	110.6529	166.4617	0.5018	33.9788	3.4970	37.4757	9.1480	3.2899	12.4379	0.0000	46,511.0957	46,511.0957	4.7034	2.4148	47,348.2765
2029	15.3178	110.4058	165.2288	0.4961	34.1100	3.5014	37.6114	9.1833	3.2942	12.4775	0.0000	45,978.5074	45,978.5074	4.7144	2.3658	46,801.3602
2030	14.7394	82.0931	164.1595	0.5139	34.1105	1.1662	35.2766	9.1835	1.1516	10.3351	0.0000	47,255.7485	47,255.7485	2.0116	2.3168	47,996.4508
2031	14.5213	81.7064	162.8428	0.5079	34.1109	1.1594	35.2703	9.1837	1.1453	10.3290	0.0000	46,704.3247	46,704.3247	2.0056	2.2736	47,431.9821
2032	14.3773	81.6796	162.3401	0.5046	34.2419	1.1575	35.3994	9.2190	1.1438	10.3627	0.0000	46,392.5758	46,392.5758	2.0085	2.2443	47,111.6012
2033	14.0904	80.7583	160.1451	0.4961	33.9808	1.1428	35.1236	9.1487	1.1296	10.2783	0.0000	45,601.9691	45,601.9691	1.9885	2.1935	46,305.3327
2034	13.9303	80.5057	159.2913	0.4920	33.9811	1.1375	35.1187	9.1488	1.1248	10.2736	0.0000	45,213.6784	45,213.6784	1.9845	2.1635	45,908.0152
2035	13.2658	75.8317	158.9238	0.4902	34.1121	0.7831	34.8953	9.1841	0.7707	9.9548	0.0000	45,039.1153	45,039.1153	1.9411	2.1448	45,726.7807
2036	13.3166	76.1222	159.5327	0.4921	34.2428	0.7861	35.0290	9.2193	0.7736	9.9929	0.0000	45,211.6789	45,211.6789	1.9486	2.1530	45,901.9791
2037	13.2658	75.8317	158.9238	0.4902	34.1121	0.7831	34.8953	9.1841	0.7707	9.9548	0.0000	45,039.1153	45,039.1153	1.9411	2.1448	45,726.7807
2038	8.3227	38.9325	110.0663	0.2378	7.2484	1.0792	8.3276	1.9497	1.0767	3.0263	0.0000	21,028.2090	21,028.2090	0.8418	0.4264	21,176.3076
2039	212.2658	7.3873	27.4268	0.0657	5.3600	0.1728	5.5329	1.4263	0.1718	1.5982	0.0000	5,838.5114	5,838.5114	0.1482	0.0668	5,862.1292
Maximum	**212.2658**	**189.5943**	**171.7877**	**0.5207**	**90.3937**	**8.0245**	**98.4182**	**36.4119**	**7.3825**	**43.7944**	**0.0000**	**48,249.7633**	**48,249.7633**	**9.5758**	**2.5441**	**49,126.5943**

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

2.1 Overall Construction

Mitigated Construction

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	14.4987	138.0734	120.3061	0.2424	11.8760	6.3951	18.2710	5.3661	5.9348	11.3009	0.0000	21,261.8081	21,261.8081	5.9741	0.0139	21,415.2938
2024	18.9953	189.5941	154.9786	0.3438	41.1898	8.0245	49.2143	16.5218	7.3825	23.9043	0.0000	30,228.6439	30,228.6439	9.5758	0.0163	30,472.8820
2025	17.3326	146.4798	168.4461	0.4490	35.7792	5.4797	41.2589	10.5018	5.0727	15.5745	0.0000	40,547.3580	40,547.3580	8.2257	1.1283	41,089.2347
2026	16.1013	112.3868	171.7876	0.5207	34.1085	3.5287	37.6371	9.1828	3.3195	12.5022	0.0000	48,249.7464	48,249.7464	4.7473	2.5441	49,126.5773
2027	15.8311	111.6668	169.2261	0.5118	34.1090	3.5196	37.6285	9.1830	3.3110	12.4940	0.0000	47,432.6725	47,432.6725	4.7313	2.4816	48,290.4776
2028	15.5167	110.6528	166.4616	0.5018	33.9788	3.4969	37.4757	9.1480	3.2899	12.4379	0.0000	46,511.0789	46,511.0789	4.7034	2.4148	47,348.2596
2029	15.3178	110.4058	165.2287	0.4961	34.1100	3.5014	37.6114	9.1833	3.2942	12.4775	0.0000	45,978.4905	45,978.4905	4.7144	2.3658	46,801.3432
2030	14.7394	82.0930	164.1593	0.5139	34.1105	1.1662	35.2766	9.1835	1.1516	10.3351	0.0000	47,255.7294	47,255.7294	2.0116	2.3168	47,996.4316
2031	14.5213	81.7064	162.8427	0.5079	34.1109	1.1594	35.2703	9.1837	1.1453	10.3290	0.0000	46,704.3055	46,704.3055	2.0056	2.2736	47,431.9629
2032	14.3773	81.6796	162.3400	0.5046	34.2419	1.1575	35.3994	9.2190	1.1438	10.3627	0.0000	46,392.5566	46,392.5566	2.0085	2.2443	47,111.5819
2033	14.0904	80.7583	160.1449	0.4961	33.9808	1.1428	35.1236	9.1487	1.1296	10.2783	0.0000	45,601.9500	45,601.9500	1.9885	2.1935	46,305.3136
2034	13.9303	80.5056	159.2912	0.4920	33.9811	1.1375	35.1187	9.1488	1.1248	10.2736	0.0000	45,213.6593	45,213.6593	1.9845	2.1635	45,907.9961
2035	13.2658	75.8316	158.9237	0.4902	34.1121	0.7831	34.8953	9.1841	0.7707	9.9548	0.0000	45,039.0961	45,039.0961	1.9411	2.1448	45,726.7616
2036	13.3166	76.1222	159.5326	0.4921	34.2428	0.7861	35.0290	9.2193	0.7736	9.9929	0.0000	45,211.6597	45,211.6597	1.9486	2.1530	45,901.9599
2037	13.2658	75.8316	158.9237	0.4902	34.1121	0.7831	34.8953	9.1841	0.7707	9.9548	0.0000	45,039.0961	45,039.0961	1.9411	2.1448	45,726.7616
2038	8.3227	38.9325	110.0662	0.2378	7.2484	1.0792	8.3276	1.9497	1.0767	3.0263	0.0000	21,028.1911	21,028.1911	0.8418	0.4264	21,176.2897
2039	212.2658	7.3872	27.4268	0.0657	5.3600	0.1728	5.5329	1.4263	0.1718	1.5982	0.0000	5,838.5081	5,838.5081	0.1482	0.0668	5,862.1259
Maximum	**212.2658**	**189.5941**	**171.7876**	**0.5207**	**41.1898**	**8.0245**	**49.2143**	**16.5218**	**7.3825**	**23.9043**	**0.0000**	**48,249.7464**	**48,249.7464**	**9.5758**	**2.5441**	**49,126.5773**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	14.70	0.00	13.70	18.92	0.00	15.42	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2023	3-31-2023	35.9731	35.9731
2	4-1-2023	6-30-2023	36.3617	36.3617
3	7-1-2023	9-30-2023	36.7613	36.7613
4	10-1-2023	12-31-2023	44.0152	44.0152
5	1-1-2024	3-31-2024	45.6729	45.6729
6	4-1-2024	6-30-2024	52.3390	52.3390
7	7-1-2024	9-30-2024	55.0669	55.0669
8	10-1-2024	12-31-2024	55.0811	55.0811
9	1-1-2025	3-31-2025	46.6995	46.6995
10	4-1-2025	6-30-2025	47.2050	47.2050
11	7-1-2025	9-30-2025	36.9449	36.9449
12	10-1-2025	12-31-2025	33.0600	33.0600
13	1-1-2026	3-31-2026	32.0686	32.0686
14	4-1-2026	6-30-2026	31.6212	31.6212
15	7-1-2026	9-30-2026	31.9687	31.9687
16	10-1-2026	12-31-2026	32.7813	32.7813
17	1-1-2027	3-31-2027	31.8162	31.8162
18	4-1-2027	6-30-2027	31.3822	31.3822
19	7-1-2027	9-30-2027	31.7271	31.7271
20	10-1-2027	12-31-2027	32.5232	32.5232
21	1-1-2028	3-31-2028	31.9519	31.9519
22	4-1-2028	6-30-2028	31.1783	31.1783
23	7-1-2028	9-30-2028	31.5209	31.5209
24	10-1-2028	12-31-2028	32.3030	32.3030

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

25	**1-1-2029**	**3-31-2029**	31.3632	31.3632
26	**4-1-2029**	**6-30-2029**	30.9527	30.9527
27	**7-1-2029**	**9-30-2029**	31.2928	31.2928
28	**10-1-2029**	**12-31-2029**	32.0601	32.0601
29	**1-1-2030**	**3-31-2030**	24.2409	24.2409
30	**4-1-2030**	**6-30-2030**	23.7618	23.7618
31	**7-1-2030**	**9-30-2030**	24.0229	24.0229
32	**10-1-2030**	**12-31-2030**	24.7796	24.7796
33	**1-1-2031**	**3-31-2031**	24.0861	24.0861
34	**4-1-2031**	**6-30-2031**	23.6142	23.6142
35	**7-1-2031**	**9-30-2031**	23.8737	23.8737
36	**10-1-2031**	**12-31-2031**	24.6214	24.6214
37	**1-1-2032**	**3-31-2032**	24.2149	24.2149
38	**4-1-2032**	**6-30-2032**	23.4827	23.4827
39	**7-1-2032**	**9-30-2032**	23.7407	23.7407
40	**10-1-2032**	**12-31-2032**	24.4810	24.4810
41	**1-1-2033**	**3-31-2033**	23.8272	23.8272
42	**4-1-2033**	**6-30-2033**	23.3657	23.3657
43	**7-1-2033**	**9-30-2033**	23.6225	23.6225
44	**10-1-2033**	**12-31-2033**	24.3567	24.3567
45	**1-1-2034**	**3-31-2034**	23.7216	23.7216
46	**4-1-2034**	**6-30-2034**	23.2636	23.2636
47	**7-1-2034**	**9-30-2034**	23.5192	23.5192
48	**10-1-2034**	**12-31-2034**	24.2487	24.2487
49	**1-1-2035**	**3-31-2035**	22.3139	22.3139
50	**4-1-2035**	**6-30-2035**	21.8444	21.8444
51	**7-1-2035**	**9-30-2035**	22.0845	22.0845
52	**10-1-2035**	**12-31-2035**	22.8098	22.8098
53	**1-1-2036**	**3-31-2036**	22.5619	22.5619

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

54	**4-1-2036**	**6-30-2036**	21.8444	21.8444
55	**7-1-2036**	**9-30-2036**	22.0845	22.0845
56	**10-1-2036**	**12-31-2036**	22.8098	22.8098
57	**1-1-2037**	**3-31-2037**	22.3139	22.3139
58	**4-1-2037**	**6-30-2037**	21.8444	21.8444
59	**7-1-2037**	**9-30-2037**	22.0845	22.0845
60	**10-1-2037**	**12-31-2037**	22.8098	22.8098
61	**1-1-2038**	**3-31-2038**	19.5332	19.5332
62	**4-1-2038**	**6-30-2038**	9.2355	9.2355
63	**7-1-2038**	**9-30-2038**	9.3370	9.3370
64	**10-1-2038**	**12-31-2038**	9.3450	9.3450
65	**1-1-2039**	**3-31-2039**	40.4461	40.4461
66	**4-1-2039**	**6-30-2039**	60.0481	60.0481
67	**7-1-2039**	**9-30-2039**	60.7080	60.7080
		Highest	60.7080	60.7080

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	477.9628	7.4226	575.2902	0.3469		29.8852	29.8852		29.8852	29.8852	2,471.7055	1,815.8793	4,287.5848	0.6047	0.2402	4,374.2761
Energy	6.6811	57.0933	24.2950	0.3644		4.6161	4.6161		4.6161	4.6161	0.0000	93,136.8171	93,136.8171	5.6381	1.7420	93,796.8828
Mobile	217.0873	181.5561	2,121.1051	4.1361	574.8275	1.9059	576.7334	153.6198	1.7788	155.3986	0.0000	381,633.9091	381,633.9091	26.3500	17.5954	387,536.0988
Waste						0.0000	0.0000		0.0000	0.0000	8,109.0952	0.0000	8,109.0952	479.2338	0.0000	20,089.9400
Water						0.0000	0.0000		0.0000	0.0000	1,041.3524	2,313.4378	3,354.7902	107.3311	2.5709	6,804.1820
Total	**701.7312**	**246.0720**	**2,720.6903**	**4.8474**	**574.8275**	**36.4072**	**611.2347**	**153.6198**	**36.2801**	**189.8999**	**11,622.1531**	**478,900.0433**	**490,522.1963**	**619.1577**	**22.1485**	**512,601.3798**

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

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	477.9628	7.4226	575.2902	0.3469		29.8852	29.8852		29.8852	29.8852	2,471.7055	1,815.8793	4,287.5848	0.6047	0.2402	4,374.2761
Energy	6.6811	57.0933	24.2950	0.3644		4.6161	4.6161		4.6161	4.6161	0.0000	93,136.8171	93,136.8171	5.6381	1.7420	93,796.8828
Mobile	217.0873	181.5561	2,121.1051	4.1361	574.8275	1.9059	576.7334	153.6198	1.7788	155.3986	0.0000	381,633.9091	381,633.9091	26.3500	17.5954	387,536.0988
Waste						0.0000	0.0000		0.0000	0.0000	8,109.0952	0.0000	8,109.0952	479.2338	0.0000	20,089.9400
Water						0.0000	0.0000		0.0000	0.0000	1,041.3524	2,313.4378	3,354.7902	107.3311	2.5709	6,804.1820
Total	**701.7312**	**246.0720**	**2,720.6903**	**4.8474**	**574.8275**	**36.4072**	**611.2347**	**153.6198**	**36.2801**	**189.8999**	**11,622.1531**	**478,900.0433**	**490,522.1963**	**619.1577**	**22.1485**	**512,601.3798**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	10/25/2023	5	213	
2	Site Preparation	Site Preparation	10/26/2023	4/22/2024	5	128	
3	Grading	Grading	4/23/2024	7/28/2025	5	330	

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

4	Building Construction	Building Construction	7/29/2025	3/12/2038	5	3294	
5	Paving	Paving	3/13/2038	2/3/2039	5	234	
6	Architectural Coating	Architectural Coating	2/4/2039	12/28/2039	5	234	

Acres of Grading (Site Preparation Phase): 9024

Acres of Grading (Grading Phase): 46530

Acres of Paving: 0

Residential Indoor: 135,945,135; Residential Outdoor: 45,315,045; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	47	8.00	81	0.73
Demolition	Excavators	141	8.00	158	0.38
Demolition	Rubber Tired Dozers	94	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	141	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	188	8.00	97	0.37
Grading	Excavators	94	8.00	158	0.38
Grading	Graders	47	8.00	187	0.41
Grading	Rubber Tired Dozers	47	8.00	247	0.40
Grading	Scrapers	94	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	94	8.00	97	0.37
Building Construction	Cranes	47	7.00	231	0.29
Building Construction	Forklifts	141	8.00	89	0.20
Building Construction	Generator Sets	47	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	141	7.00	97	0.37
Building Construction	Welders	47	8.00	46	0.45
Paving	Pavers	94	8.00	130	0.42
Paving	Paving Equipment	94	8.00	132	0.36

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

Paving	Rollers	94	8.00	80	0.38
Architectural Coating	Air Compressors	47	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	282	705.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	329	823.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	376	940.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	423	28,733.00	5,386.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	282	705.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	47	5,747.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	11.3579	107.5402	98.3248	0.1944		4.9932	4.9932		4.6451	4.6451	0.0000	17,014.7292	17,014.7292	4.7651	0.0000	17,133.8568
Total	**11.3579**	**107.5402**	**98.3248**	**0.1944**		**4.9932**	**4.9932**		**4.6451**	**4.6451**	**0.0000**	**17,014.7292**	**17,014.7292**	**4.7651**	**0.0000**	**17,133.8568**

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

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1618	0.1057	1.4557	4.7900e-003	0.5911	2.8500e-003	0.5939	0.1573	2.6200e-003	0.1599	0.0000	439.3118	439.3118	0.0112	0.0110	442.8784
Total	**0.1618**	**0.1057**	**1.4557**	**4.7900e-003**	**0.5911**	**2.8500e-003**	**0.5939**	**0.1573**	**2.6200e-003**	**0.1599**	**0.0000**	**439.3118**	**439.3118**	**0.0112**	**0.0110**	**442.8784**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	11.3579	107.5401	98.3247	0.1944		4.9931	4.9931		4.6451	4.6451	0.0000	17,014.7090	17,014.7090	4.7651	0.0000	17,133.8364
Total	**11.3579**	**107.5401**	**98.3247**	**0.1944**		**4.9931**	**4.9931**		**4.6451**	**4.6451**	**0.0000**	**17,014.7090**	**17,014.7090**	**4.7651**	**0.0000**	**17,133.8364**

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

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1618	0.1057	1.4557	4.7900e-003	0.5911	2.8500e-003	0.5939	0.1573	2.6200e-003	0.1599	0.0000	439.3118	439.3118	0.0112	0.0110	442.8784
Total	**0.1618**	**0.1057**	**1.4557**	**4.7900e-003**	**0.5911**	**2.8500e-003**	**0.5939**	**0.1573**	**2.6200e-003**	**0.1599**	**0.0000**	**439.3118**	**439.3118**	**0.0112**	**0.0110**	**442.8784**

3.3 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					24.7392	0.0000	24.7392	11.4851	0.0000	11.4851	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9374	30.4005	20.1509	0.0421		1.3983	1.3983		1.2865	1.2865	0.0000	3,694.6294	3,694.6294	1.1949	0.0000	3,724.5024
Total	**2.9374**	**30.4005**	**20.1509**	**0.0421**	**24.7392**	**1.3983**	**26.1375**	**11.4851**	**1.2865**	**12.7716**	**0.0000**	**3,694.6294**	**3,694.6294**	**1.1949**	**0.0000**	**3,724.5024**

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

3.3 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0417	0.0272	0.3750	1.2300e-003	0.1523	7.3000e-004	0.1530	0.0405	6.8000e-004	0.0412	0.0000	113.1623	113.1623	2.8800e-003	2.8400e-003	114.0810
Total	**0.0417**	**0.0272**	**0.3750**	**1.2300e-003**	**0.1523**	**7.3000e-004**	**0.1530**	**0.0405**	**6.8000e-004**	**0.0412**	**0.0000**	**113.1623**	**113.1623**	**2.8800e-003**	**2.8400e-003**	**114.0810**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					11.1326	0.0000	11.1326	5.1683	0.0000	5.1683	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9374	30.4004	20.1508	0.0420		1.3983	1.3983		1.2865	1.2865	0.0000	3,694.6250	3,694.6250	1.1949	0.0000	3,724.4979
Total	**2.9374**	**30.4004**	**20.1508**	**0.0420**	**11.1326**	**1.3983**	**12.5309**	**5.1683**	**1.2865**	**6.4548**	**0.0000**	**3,694.6250**	**3,694.6250**	**1.1949**	**0.0000**	**3,724.4979**

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

3.3 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0417	0.0272	0.3750	1.2300e-003	0.1523	7.3000e-004	0.1530	0.0405	6.8000e-004	0.0412	0.0000	113.1623	113.1623	2.8800e-003	2.8400e-003	114.0810
Total	**0.0417**	**0.0272**	**0.3750**	**1.2300e-003**	**0.1523**	**7.3000e-004**	**0.1530**	**0.0405**	**6.8000e-004**	**0.0412**	**0.0000**	**113.1623**	**113.1623**	**2.8800e-003**	**2.8400e-003**	**114.0810**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					39.1741	0.0000	39.1741	19.4197	0.0000	19.4197	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0650	51.7295	34.9019	0.0725		2.3401	2.3401		2.1529	2.1529	0.0000	6,368.5520	6,368.5520	2.0597	0.0000	6,420.0450
Total	**5.0650**	**51.7295**	**34.9019**	**0.0725**	**39.1741**	**2.3401**	**41.5142**	**19.4197**	**2.1529**	**21.5726**	**0.0000**	**6,368.5520**	**6,368.5520**	**2.0597**	**0.0000**	**6,420.0450**

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

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0681	0.0421	0.6075	2.0600e-003	0.2624	1.2100e-003	0.2636	0.0698	1.1100e-003	0.0709	0.0000	188.6832	188.6832	4.5100e-003	4.5700e-003	190.1593
Total	**0.0681**	**0.0421**	**0.6075**	**2.0600e-003**	**0.2624**	**1.2100e-003**	**0.2636**	**0.0698**	**1.1100e-003**	**0.0709**	**0.0000**	**188.6832**	**188.6832**	**4.5100e-003**	**4.5700e-003**	**190.1593**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					17.6284	0.0000	17.6284	8.7389	0.0000	8.7389	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0650	51.7295	34.9018	0.0725		2.3401	2.3401		2.1529	2.1529	0.0000	6,368.5445	6,368.5445	2.0597	0.0000	6,420.0374
Total	**5.0650**	**51.7295**	**34.9018**	**0.0725**	**17.6284**	**2.3401**	**19.9684**	**8.7389**	**2.1529**	**10.8917**	**0.0000**	**6,368.5445**	**6,368.5445**	**2.0597**	**0.0000**	**6,420.0374**

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

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0681	0.0421	0.6075	2.0600e-003	0.2624	1.2100e-003	0.2636	0.0698	1.1100e-003	0.0709	0.0000	188.6832	188.6832	4.5100e-003	4.5700e-003	190.1593
Total	**0.0681**	**0.0421**	**0.6075**	**2.0600e-003**	**0.2624**	**1.2100e-003**	**0.2636**	**0.0698**	**1.1100e-003**	**0.0709**	**0.0000**	**188.6832**	**188.6832**	**4.5100e-003**	**4.5700e-003**	**190.1593**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					50.2875	0.0000	50.2875	16.7441	0.0000	16.7441	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	13.6884	137.7154	117.9190	0.2640		5.6801	5.6801		5.2257	5.2257	0.0000	23,189.8791	23,189.8791	7.5001	0.0000	23,377.3810
Total	**13.6884**	**137.7154**	**117.9190**	**0.2640**	**50.2875**	**5.6801**	**55.9676**	**16.7441**	**5.2257**	**21.9698**	**0.0000**	**23,189.8791**	**23,189.8791**	**7.5001**	**0.0000**	**23,377.3810**

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

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1738	0.1074	1.5505	5.2500e-003	0.6697	3.0800e-003	0.6728	0.1782	2.8300e-003	0.1811	0.0000	481.5648	481.5648	0.0115	0.0117	485.3322
Total	**0.1738**	**0.1074**	**1.5505**	**5.2500e-003**	**0.6697**	**3.0800e-003**	**0.6728**	**0.1782**	**2.8300e-003**	**0.1811**	**0.0000**	**481.5648**	**481.5648**	**0.0115**	**0.0117**	**485.3322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					22.6294	0.0000	22.6294	7.5349	0.0000	7.5349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	13.6883	137.7152	117.9188	0.2640		5.6801	5.6801		5.2257	5.2257	0.0000	23,189.8515	23,189.8515	7.5001	0.0000	23,377.3532
Total	**13.6883**	**137.7152**	**117.9188**	**0.2640**	**22.6294**	**5.6801**	**28.3095**	**7.5349**	**5.2257**	**12.7606**	**0.0000**	**23,189.8515**	**23,189.8515**	**7.5001**	**0.0000**	**23,377.3532**

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

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1738	0.1074	1.5505	5.2500e-003	0.6697	3.0800e-003	0.6728	0.1782	2.8300e-003	0.1811	0.0000	481.5648	481.5648	0.0115	0.0117	485.3322
Total	**0.1738**	**0.1074**	**1.5505**	**5.2500e-003**	**0.6697**	**3.0800e-003**	**0.6728**	**0.1782**	**2.8300e-003**	**0.1811**	**0.0000**	**481.5648**	**481.5648**	**0.0115**	**0.0117**	**485.3322**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					45.7589	0.0000	45.7589	14.2548	0.0000	14.2548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	10.1587	97.8420	92.1983	0.2173		3.9598	3.9598		3.6430	3.6430	0.0000	19,085.3503	19,085.3503	6.1726	0.0000	19,239.6650
Total	**10.1587**	**97.8420**	**92.1983**	**0.2173**	**45.7589**	**3.9598**	**49.7187**	**14.2548**	**3.6430**	**17.8979**	**0.0000**	**19,085.3503**	**19,085.3503**	**6.1726**	**0.0000**	**19,239.6650**

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

3.4 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1365	0.0801	1.2028	4.1800e-003	0.5513	2.4200e-003	0.5537	0.1467	2.2300e-003	0.1489	0.0000	383.1784	383.1784	8.6100e-003	9.0400e-003	386.0862
Total	**0.1365**	**0.0801**	**1.2028**	**4.1800e-003**	**0.5513**	**2.4200e-003**	**0.5537**	**0.1467**	**2.2300e-003**	**0.1489**	**0.0000**	**383.1784**	**383.1784**	**8.6100e-003**	**9.0400e-003**	**386.0862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					20.5915	0.0000	20.5915	6.4147	0.0000	6.4147	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	10.1587	97.8419	92.1982	0.2173		3.9598	3.9598		3.6430	3.6430	0.0000	19,085.3276	19,085.3276	6.1726	0.0000	19,239.6421
Total	**10.1587**	**97.8419**	**92.1982**	**0.2173**	**20.5915**	**3.9598**	**24.5513**	**6.4147**	**3.6430**	**10.0577**	**0.0000**	**19,085.3276**	**19,085.3276**	**6.1726**	**0.0000**	**19,239.6421**

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

3.4 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1365	0.0801	1.2028	4.1800e-003	0.5513	2.4200e-003	0.5537	0.1467	2.2300e-003	0.1489	0.0000	383.1784	383.1784	8.6100e-003	9.0400e-003	386.0862
Total	**0.1365**	**0.0801**	**1.2028**	**4.1800e-003**	**0.5513**	**2.4200e-003**	**0.5537**	**0.1467**	**2.2300e-003**	**0.1489**	**0.0000**	**383.1784**	**383.1784**	**8.6100e-003**	**9.0400e-003**	**386.0862**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5990	32.8202	42.3348	0.0710		1.3885	1.3885		1.3061	1.3061	0.0000	6,104.1200	6,104.1200	1.4349	0.0000	6,139.9923
Total	**3.5990**	**32.8202**	**42.3348**	**0.0710**		**1.3885**	**1.3885**		**1.3061**	**1.3061**	**0.0000**	**6,104.1200**	**6,104.1200**	**1.4349**	**0.0000**	**6,139.9923**

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

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3018	13.8981	5.0732	0.0606	1.9692	0.0734	2.0426	0.5696	0.0702	0.6398	0.0000	6,170.6211	6,170.6211	0.4117	0.9117	6,452.5925
Worker	3.1366	1.8395	27.6371	0.0960	12.6672	0.0556	12.7228	3.3708	0.0512	3.4220	0.0000	8,804.1182	8,804.1182	0.1979	0.2076	8,870.9290
Total	**3.4384**	**15.7376**	**32.7103**	**0.1566**	**14.6364**	**0.1290**	**14.7653**	**3.9404**	**0.1213**	**4.0618**	**0.0000**	**14,974.7394**	**14,974.7394**	**0.6096**	**1.1193**	**15,323.5215**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5990	32.8202	42.3348	0.0710		1.3885	1.3885		1.3061	1.3061	0.0000	6,104.1127	6,104.1127	1.4349	0.0000	6,139.9850
Total	**3.5990**	**32.8202**	**42.3348**	**0.0710**		**1.3885**	**1.3885**		**1.3061**	**1.3061**	**0.0000**	**6,104.1127**	**6,104.1127**	**1.4349**	**0.0000**	**6,139.9850**

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

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3018	13.8981	5.0732	0.0606	1.9692	0.0734	2.0426	0.5696	0.0702	0.6398	0.0000	6,170.6211	6,170.6211	0.4117	0.9117	6,452.5925
Worker	3.1366	1.8395	27.6371	0.0960	12.6672	0.0556	12.7228	3.3708	0.0512	3.4220	0.0000	8,804.1182	8,804.1182	0.1979	0.2076	8,870.9290
Total	**3.4384**	**15.7376**	**32.7103**	**0.1566**	**14.6364**	**0.1290**	**14.7653**	**3.9404**	**0.1213**	**4.0618**	**0.0000**	**14,974.7394**	**14,974.7394**	**0.6096**	**1.1193**	**15,323.5215**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3869	76.4828	98.6553	0.1654		3.2358	3.2358		3.0438	3.0438	0.0000	14,224.7796	14,224.7796	3.3438	0.0000	14,308.3748
Total	**8.3869**	**76.4828**	**98.6553**	**0.1654**		**3.2358**	**3.2358**		**3.0438**	**3.0438**	**0.0000**	**14,224.7796**	**14,224.7796**	**3.3438**	**0.0000**	**14,308.3748**

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

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6862	31.9676	11.8652	0.1380	4.5894	0.1700	4.7594	1.3276	0.1626	1.4901	0.0000	14,100.2199	14,100.2199	0.9807	2.0847	14,745.9669
Worker	7.0282	3.9366	61.2673	0.2173	29.5190	0.1229	29.6420	7.8552	0.1131	7.9684	0.0000	19,924.7638	19,924.7638	0.4228	0.4595	20,072.2526
Total	**7.7144**	**35.9041**	**73.1324**	**0.3553**	**34.1085**	**0.2929**	**34.4014**	**9.1828**	**0.2757**	**9.4585**	**0.0000**	**34,024.9837**	**34,024.9837**	**1.4035**	**2.5441**	**34,818.2195**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3869	76.4827	98.6552	0.1654		3.2358	3.2358		3.0438	3.0438	0.0000	14,224.7627	14,224.7627	3.3438	0.0000	14,308.3578
Total	**8.3869**	**76.4827**	**98.6552**	**0.1654**		**3.2358**	**3.2358**		**3.0438**	**3.0438**	**0.0000**	**14,224.7627**	**14,224.7627**	**3.3438**	**0.0000**	**14,308.3578**

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

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6862	31.9676	11.8652	0.1380	4.5894	0.1700	4.7594	1.3276	0.1626	1.4901	0.0000	14,100.2199	14,100.2199	0.9807	2.0847	14,745.9669
Worker	7.0282	3.9366	61.2673	0.2173	29.5190	0.1229	29.6420	7.8552	0.1131	7.9684	0.0000	19,924.7638	19,924.7638	0.4228	0.4595	20,072.2526
Total	**7.7144**	**35.9041**	**73.1324**	**0.3553**	**34.1085**	**0.2929**	**34.4014**	**9.1828**	**0.2757**	**9.4585**	**0.0000**	**34,024.9837**	**34,024.9837**	**1.4035**	**2.5441**	**34,818.2195**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3869	76.4828	98.6553	0.1654		3.2358	3.2358		3.0438	3.0438	0.0000	14,224.7796	14,224.7796	3.3438	0.0000	14,308.3748
Total	**8.3869**	**76.4828**	**98.6553**	**0.1654**		**3.2358**	**3.2358**		**3.0438**	**3.0438**	**0.0000**	**14,224.7796**	**14,224.7796**	**3.3438**	**0.0000**	**14,308.3748**

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

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6714	31.5335	11.8974	0.1348	4.5899	0.1686	4.7585	1.3277	0.1612	1.4890	0.0000	13,799.5448	13,799.5448	0.9970	2.0418	14,432.9297
Worker	6.7728	3.6506	58.6735	0.2117	29.5190	0.1152	29.6342	7.8552	0.1060	7.9612	0.0000	19,408.3649	19,408.3649	0.3905	0.4398	19,549.1901
Total	**7.4442**	**35.1841**	**70.5709**	**0.3464**	**34.1090**	**0.2838**	**34.3927**	**9.1830**	**0.2672**	**9.4502**	**0.0000**	**33,207.9097**	**33,207.9097**	**1.3875**	**2.4816**	**33,982.1198**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3869	76.4827	98.6552	0.1654		3.2358	3.2358		3.0438	3.0438	0.0000	14,224.7627	14,224.7627	3.3438	0.0000	14,308.3578
Total	**8.3869**	**76.4827**	**98.6552**	**0.1654**		**3.2358**	**3.2358**		**3.0438**	**3.0438**	**0.0000**	**14,224.7627**	**14,224.7627**	**3.3438**	**0.0000**	**14,308.3578**

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

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6714	31.5335	11.8974	0.1348	4.5899	0.1686	4.7585	1.3277	0.1612	1.4890	0.0000	13,799.5448	13,799.5448	0.9970	2.0418	14,432.9297
Worker	6.7728	3.6506	58.6735	0.2117	29.5190	0.1152	29.6342	7.8552	0.1060	7.9612	0.0000	19,408.3649	19,408.3649	0.3905	0.4398	19,549.1901
Total	**7.4442**	**35.1841**	**70.5709**	**0.3464**	**34.1090**	**0.2838**	**34.3927**	**9.1830**	**0.2672**	**9.4502**	**0.0000**	**33,207.9097**	**33,207.9097**	**1.3875**	**2.4816**	**33,982.1198**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3548	76.1898	98.2773	0.1647		3.2234	3.2234		3.0321	3.0321	0.0000	14,170.2786	14,170.2786	3.3310	0.0000	14,253.5535
Total	**8.3548**	**76.1898**	**98.2773**	**0.1647**		**3.2234**	**3.2234**		**3.0321**	**3.0321**	**0.0000**	**14,170.2786**	**14,170.2786**	**3.3310**	**0.0000**	**14,253.5535**

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

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6582	31.0623	11.9195	0.1312	4.5729	0.1668	4.7396	1.3228	0.1595	1.4824	0.0000	13,462.5155	13,462.5155	1.0111	1.9928	14,081.6466
Worker	6.5038	3.4009	56.2649	0.2059	29.4059	0.1068	29.5127	7.8251	0.0983	7.9234	0.0000	18,878.3016	18,878.3016	0.3613	0.4220	19,013.0765
Total	**7.1620**	**34.4632**	**68.1844**	**0.3371**	**33.9788**	**0.2736**	**34.2524**	**9.1480**	**0.2578**	**9.4058**	**0.0000**	**32,340.8171**	**32,340.8171**	**1.3724**	**2.4148**	**33,094.7231**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3548	76.1897	98.2772	0.1647		3.2234	3.2234		3.0321	3.0321	0.0000	14,170.2617	14,170.2617	3.3310	0.0000	14,253.5365
Total	**8.3548**	**76.1897**	**98.2772**	**0.1647**		**3.2234**	**3.2234**		**3.0321**	**3.0321**	**0.0000**	**14,170.2617**	**14,170.2617**	**3.3310**	**0.0000**	**14,253.5365**

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

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6582	31.0623	11.9195	0.1312	4.5729	0.1668	4.7396	1.3228	0.1595	1.4824	0.0000	13,462.5155	13,462.5155	1.0111	1.9928	14,081.6466
Worker	6.5038	3.4009	56.2649	0.2059	29.4059	0.1068	29.5127	7.8251	0.0983	7.9234	0.0000	18,878.3016	18,878.3016	0.3613	0.4220	19,013.0765
Total	**7.1620**	**34.4632**	**68.1844**	**0.3371**	**33.9788**	**0.2736**	**34.2524**	**9.1480**	**0.2578**	**9.4058**	**0.0000**	**32,340.8171**	**32,340.8171**	**1.3724**	**2.4148**	**33,094.7231**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3869	76.4828	98.6553	0.1654		3.2358	3.2358		3.0438	3.0438	0.0000	14,224.7796	14,224.7796	3.3438	0.0000	14,308.3748
Total	**8.3869**	**76.4828**	**98.6553**	**0.1654**		**3.2358**	**3.2358**		**3.0438**	**3.0438**	**0.0000**	**14,224.7796**	**14,224.7796**	**3.3438**	**0.0000**	**14,308.3748**

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

3.5 Building Construction - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6506	30.7123	12.0287	0.1285	4.5910	0.1655	4.7564	1.3281	0.1583	1.4864	0.0000	13,209.5441	13,209.5441	1.0326	1.9559	13,818.2043
Worker	6.2803	3.2108	54.5448	0.2022	29.5190	0.1001	29.6192	7.8552	0.0921	7.9474	0.0000	18,544.1837	18,544.1837	0.3380	0.4099	18,674.7810
Total	**6.9309**	**33.9230**	**66.5735**	**0.3307**	**34.1100**	**0.2656**	**34.3756**	**9.1833**	**0.2504**	**9.4338**	**0.0000**	**31,753.7277**	**31,753.7277**	**1.3706**	**2.3657**	**32,492.9854**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.3869	76.4827	98.6552	0.1654		3.2358	3.2358		3.0438	3.0438	0.0000	14,224.7627	14,224.7627	3.3438	0.0000	14,308.3578
Total	**8.3869**	**76.4827**	**98.6552**	**0.1654**		**3.2358**	**3.2358**		**3.0438**	**3.0438**	**0.0000**	**14,224.7627**	**14,224.7627**	**3.3438**	**0.0000**	**14,308.3578**

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

3.5 Building Construction - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6506	30.7123	12.0287	0.1285	4.5910	0.1655	4.7564	1.3281	0.1583	1.4864	0.0000	13,209.5441	13,209.5441	1.0326	1.9559	13,818.2043
Worker	6.2803	3.2108	54.5448	0.2022	29.5190	0.1001	29.6192	7.8552	0.0921	7.9474	0.0000	18,544.1837	18,544.1837	0.3380	0.4099	18,674.7810
Total	**6.9309**	**33.9230**	**66.5735**	**0.3307**	**34.1100**	**0.2656**	**34.3756**	**9.1833**	**0.2504**	**9.4338**	**0.0000**	**31,753.7277**	**31,753.7277**	**1.3706**	**2.3657**	**32,492.9854**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0296	48.6670	99.0989	0.1899		0.9086	0.9086		0.9086	0.9086	0.0000	16,122.5806	16,122.5806	0.6468	0.0000	16,138.7509
Total	**8.0296**	**48.6670**	**99.0989**	**0.1899**		**0.9086**	**0.9086**		**0.9086**	**0.9086**	**0.0000**	**16,122.5806**	**16,122.5806**	**0.6468**	**0.0000**	**16,138.7509**

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

3.5 Building Construction - 2030

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6426	30.3754	12.1052	0.1257	4.5914	0.1637	4.7551	1.3283	0.1566	1.4849	0.0000	12,948.5805	12,948.5805	1.0481	1.9179	13,546.3136
Worker	6.0673	3.0507	52.9554	0.1983	29.5190	0.0939	29.6129	7.8552	0.0864	7.9416	0.0000	18,184.5874	18,184.5874	0.3167	0.3989	18,311.3864
Total	**6.7099**	**33.4261**	**65.0606**	**0.3240**	**34.1105**	**0.2576**	**34.3680**	**9.1835**	**0.2429**	**9.4264**	**0.0000**	**31,133.1679**	**31,133.1679**	**1.3648**	**2.3168**	**31,857.7000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0296	48.6669	99.0987	0.1899		0.9086	0.9086		0.9086	0.9086	0.0000	16,122.5615	16,122.5615	0.6468	0.0000	16,138.7317
Total	**8.0296**	**48.6669**	**99.0987**	**0.1899**		**0.9086**	**0.9086**		**0.9086**	**0.9086**	**0.0000**	**16,122.5615**	**16,122.5615**	**0.6468**	**0.0000**	**16,138.7317**

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

3.5 Building Construction - 2030

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6426	30.3754	12.1052	0.1257	4.5914	0.1637	4.7551	1.3283	0.1566	1.4849	0.0000	12,948.5805	12,948.5805	1.0481	1.9179	13,546.3136
Worker	6.0673	3.0507	52.9554	0.1983	29.5190	0.0939	29.6129	7.8552	0.0864	7.9416	0.0000	18,184.5874	18,184.5874	0.3167	0.3989	18,311.3864
Total	**6.7099**	**33.4261**	**65.0606**	**0.3240**	**34.1105**	**0.2576**	**34.3680**	**9.1835**	**0.2429**	**9.4264**	**0.0000**	**31,133.1679**	**31,133.1679**	**1.3648**	**2.3168**	**31,857.7000**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0296	48.6670	99.0989	0.1899		0.9086	0.9086		0.9086	0.9086	0.0000	16,122.5806	16,122.5806	0.6468	0.0000	16,138.7509
Total	**8.0296**	**48.6670**	**99.0989**	**0.1899**		**0.9086**	**0.9086**		**0.9086**	**0.9086**	**0.0000**	**16,122.5806**	**16,122.5806**	**0.6468**	**0.0000**	**16,138.7509**

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

3.5 Building Construction - 2031

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6376	30.1254	12.1864	0.1232	4.5918	0.1627	4.7545	1.3284	0.1556	1.4841	0.0000	12,715.4088	12,715.4088	1.0610	1.8838	13,303.2969
Worker	5.8541	2.9141	51.5576	0.1948	29.5190	0.0881	29.6071	7.8552	0.0811	7.9363	0.0000	17,866.3352	17,866.3352	0.2978	0.3898	17,989.9343
Total	**6.4918**	**33.0394**	**63.7440**	**0.3181**	**34.1109**	**0.2508**	**34.3617**	**9.1837**	**0.2367**	**9.4204**	**0.0000**	**30,581.7440**	**30,581.7440**	**1.3588**	**2.2736**	**31,293.2312**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0296	48.6669	99.0987	0.1899		0.9086	0.9086		0.9086	0.9086	0.0000	16,122.5615	16,122.5615	0.6468	0.0000	16,138.7317
Total	**8.0296**	**48.6669**	**99.0987**	**0.1899**		**0.9086**	**0.9086**		**0.9086**	**0.9086**	**0.0000**	**16,122.5615**	**16,122.5615**	**0.6468**	**0.0000**	**16,138.7317**

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

3.5 Building Construction - 2031

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6376	30.1254	12.1864	0.1232	4.5918	0.1627	4.7545	1.3284	0.1556	1.4841	0.0000	12,715.4088	12,715.4088	1.0610	1.8838	13,303.2969
Worker	5.8541	2.9141	51.5576	0.1948	29.5190	0.0881	29.6071	7.8552	0.0811	7.9363	0.0000	17,866.3352	17,866.3352	0.2978	0.3898	17,989.9343
Total	**6.4918**	**33.0394**	**63.7440**	**0.3181**	**34.1109**	**0.2508**	**34.3617**	**9.1837**	**0.2367**	**9.4204**	**0.0000**	**30,581.7440**	**30,581.7440**	**1.3588**	**2.2736**	**31,293.2312**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0603	48.8535	99.4786	0.1906		0.9121	0.9121		0.9121	0.9121	0.0000	16,184.3530	16,184.3530	0.6493	0.0000	16,200.5852
Total	**8.0603**	**48.8535**	**99.4786**	**0.1906**		**0.9121**	**0.9121**		**0.9121**	**0.9121**	**0.0000**	**16,184.3530**	**16,184.3530**	**0.6493**	**0.0000**	**16,200.5852**

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

3.5 Building Construction - 2032

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6364	30.0117	12.3192	0.1215	4.6098	0.1622	4.7720	1.3336	0.1551	1.4888	0.0000	12,555.2305	12,555.2305	1.0769	1.8605	13,136.5812
Worker	5.6805	2.8145	50.5423	0.1925	29.6321	0.0832	29.7153	7.8853	0.0765	7.9618	0.0000	17,652.9924	17,652.9924	0.2823	0.3838	17,774.4348
Total	**6.3169**	**32.8262**	**62.8615**	**0.3140**	**34.2419**	**0.2454**	**34.4873**	**9.2190**	**0.2317**	**9.4506**	**0.0000**	**30,208.2229**	**30,208.2229**	**1.3592**	**2.2443**	**30,911.0160**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0603	48.8534	99.4784	0.1906		0.9121	0.9121		0.9121	0.9121	0.0000	16,184.3337	16,184.3337	0.6493	0.0000	16,200.5659
Total	**8.0603**	**48.8534**	**99.4784**	**0.1906**		**0.9121**	**0.9121**		**0.9121**	**0.9121**	**0.0000**	**16,184.3337**	**16,184.3337**	**0.6493**	**0.0000**	**16,200.5659**

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

3.5 Building Construction - 2032

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6364	30.0117	12.3192	0.1215	4.6098	0.1622	4.7720	1.3336	0.1551	1.4888	0.0000	12,555.2305	12,555.2305	1.0769	1.8605	13,136.5812
Worker	5.6805	2.8145	50.5423	0.1925	29.6321	0.0832	29.7153	7.8853	0.0765	7.9618	0.0000	17,652.9924	17,652.9924	0.2823	0.3838	17,774.4348
Total	**6.3169**	**32.8262**	**62.8615**	**0.3140**	**34.2419**	**0.2454**	**34.4873**	**9.2190**	**0.2317**	**9.4506**	**0.0000**	**30,208.2229**	**30,208.2229**	**1.3592**	**2.2443**	**30,911.0160**

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9988	48.4805	98.7192	0.1892		0.9051	0.9051		0.9051	0.9051	0.0000	16,060.8083	16,060.8083	0.6443	0.0000	16,076.9166
Total	**7.9988**	**48.4805**	**98.7192**	**0.1892**		**0.9051**	**0.9051**		**0.9051**	**0.9051**	**0.0000**	**16,060.8083**	**16,060.8083**	**0.6443**	**0.0000**	**16,076.9166**

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

3.5 Building Construction - 2033

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6296	29.5721	12.3107	0.1186	4.5749	0.1599	4.7348	1.3236	0.1529	1.4765	0.0000	12,268.2251	12,268.2251	1.0785	1.8184	12,837.0826
Worker	5.4621	2.7057	49.1152	0.1884	29.4059	0.0778	29.4837	7.8251	0.0716	7.8967	0.0000	17,272.9357	17,272.9357	0.2657	0.3750	17,391.3335
Total	**6.0916**	**32.2778**	**61.4259**	**0.3070**	**33.9808**	**0.2376**	**34.2184**	**9.1487**	**0.2245**	**9.3732**	**0.0000**	**29,541.1608**	**29,541.1608**	**1.3442**	**2.1935**	**30,228.4161**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9988	48.4805	98.7191	0.1892		0.9051	0.9051		0.9051	0.9051	0.0000	16,060.7892	16,060.7892	0.6443	0.0000	16,076.8975
Total	**7.9988**	**48.4805**	**98.7191**	**0.1892**		**0.9051**	**0.9051**		**0.9051**	**0.9051**	**0.0000**	**16,060.7892**	**16,060.7892**	**0.6443**	**0.0000**	**16,076.8975**

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

3.5 Building Construction - 2033

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6296	29.5721	12.3107	0.1186	4.5749	0.1599	4.7348	1.3236	0.1529	1.4765	0.0000	12,268.2251	12,268.2251	1.0785	1.8184	12,837.0826
Worker	5.4621	2.7057	49.1152	0.1884	29.4059	0.0778	29.4837	7.8251	0.0716	7.8967	0.0000	17,272.9357	17,272.9357	0.2657	0.3750	17,391.3335
Total	**6.0916**	**32.2778**	**61.4259**	**0.3070**	**33.9808**	**0.2376**	**34.2184**	**9.1487**	**0.2245**	**9.3732**	**0.0000**	**29,541.1608**	**29,541.1608**	**1.3442**	**2.1935**	**30,228.4161**

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9988	48.4805	98.7192	0.1892		0.9051	0.9051		0.9051	0.9051	0.0000	16,060.8083	16,060.8083	0.6443	0.0000	16,076.9166
Total	**7.9988**	**48.4805**	**98.7192**	**0.1892**		**0.9051**	**0.9051**		**0.9051**	**0.9051**	**0.0000**	**16,060.8083**	**16,060.8083**	**0.6443**	**0.0000**	**16,076.9166**

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

3.5 Building Construction - 2034

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6286	29.3905	12.3862	0.1168	4.5752	0.1590	4.7342	1.3237	0.1521	1.4758	0.0000	12,094.8458	12,094.8458	1.0873	1.7933	12,656.4225
Worker	5.3029	2.6347	48.1859	0.1860	29.4059	0.0734	29.4793	7.8251	0.0675	7.8927	0.0000	17,058.0244	17,058.0244	0.2528	0.3702	17,174.6761
Total	**5.9315**	**32.0252**	**60.5721**	**0.3028**	**33.9811**	**0.2324**	**34.2135**	**9.1488**	**0.2196**	**9.3684**	**0.0000**	**29,152.8702**	**29,152.8702**	**1.3401**	**2.1635**	**29,831.0986**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.9988	48.4805	98.7191	0.1892		0.9051	0.9051		0.9051	0.9051	0.0000	16,060.7892	16,060.7892	0.6443	0.0000	16,076.8975
Total	**7.9988**	**48.4805**	**98.7191**	**0.1892**		**0.9051**	**0.9051**		**0.9051**	**0.9051**	**0.0000**	**16,060.7892**	**16,060.7892**	**0.6443**	**0.0000**	**16,076.8975**

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

3.5 Building Construction - 2034

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6286	29.3905	12.3862	0.1168	4.5752	0.1590	4.7342	1.3237	0.1521	1.4758	0.0000	12,094.8458	12,094.8458	1.0873	1.7933	12,656.4225
Worker	5.3029	2.6347	48.1859	0.1860	29.4059	0.0734	29.4793	7.8251	0.0675	7.8927	0.0000	17,058.0244	17,058.0244	0.2528	0.3702	17,174.6761
Total	**5.9315**	**32.0252**	**60.5721**	**0.3028**	**33.9811**	**0.2324**	**34.2135**	**9.1488**	**0.2196**	**9.3684**	**0.0000**	**29,152.8702**	**29,152.8702**	**1.3401**	**2.1635**	**29,831.0986**

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4633	43.9239	98.8584	0.1899		0.5546	0.5546		0.5546	0.5546	0.0000	16,122.5806	16,122.5806	0.6005	0.0000	16,137.5930
Total	**7.4633**	**43.9239**	**98.8584**	**0.1899**		**0.5546**	**0.5546**		**0.5546**	**0.5546**	**0.0000**	**16,122.5806**	**16,122.5806**	**0.6005**	**0.0000**	**16,137.5930**

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

3.5 Building Construction - 2035

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6306	29.3173	12.4971	0.1156	4.5931	0.1588	4.7519	1.3289	0.1519	1.4808	0.0000	11,980.3033	11,980.3033	1.0981	1.7768	12,537.2328
Worker	5.1719	2.5905	47.5683	0.1847	29.5190	0.0698	29.5888	7.8552	0.0642	7.9194	0.0000	16,936.2313	16,936.2313	0.2425	0.3680	17,051.9550
Total	**5.8025**	**31.9078**	**60.0654**	**0.3003**	**34.1121**	**0.2286**	**34.3407**	**9.1841**	**0.2161**	**9.4002**	**0.0000**	**28,916.5346**	**28,916.5346**	**1.3406**	**2.1448**	**29,589.1878**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4633	43.9239	98.8582	0.1899		0.5546	0.5546		0.5546	0.5546	0.0000	16,122.5615	16,122.5615	0.6005	0.0000	16,137.5738
Total	**7.4633**	**43.9239**	**98.8582**	**0.1899**		**0.5546**	**0.5546**		**0.5546**	**0.5546**	**0.0000**	**16,122.5615**	**16,122.5615**	**0.6005**	**0.0000**	**16,137.5738**

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

3.5 Building Construction - 2035

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6306	29.3173	12.4971	0.1156	4.5931	0.1588	4.7519	1.3289	0.1519	1.4808	0.0000	11,980.3033	11,980.3033	1.0981	1.7768	12,537.2328
Worker	5.1719	2.5905	47.5683	0.1847	29.5190	0.0698	29.5888	7.8552	0.0642	7.9194	0.0000	16,936.2313	16,936.2313	0.2425	0.3680	17,051.9550
Total	**5.8025**	**31.9078**	**60.0654**	**0.3003**	**34.1121**	**0.2286**	**34.3407**	**9.1841**	**0.2161**	**9.4002**	**0.0000**	**28,916.5346**	**28,916.5346**	**1.3406**	**2.1448**	**29,589.1878**

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4919	44.0922	99.2371	0.1906		0.5567	0.5567		0.5567	0.5567	0.0000	16,184.3530	16,184.3530	0.6028	0.0000	16,199.4228
Total	**7.4919**	**44.0922**	**99.2371**	**0.1906**		**0.5567**	**0.5567**		**0.5567**	**0.5567**	**0.0000**	**16,184.3530**	**16,184.3530**	**0.6028**	**0.0000**	**16,199.4228**

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

3.5 Building Construction - 2036

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6330	29.4296	12.5450	0.1161	4.6107	0.1594	4.7701	1.3340	0.1525	1.4865	0.0000	12,026.2048	12,026.2048	1.1023	1.7836	12,585.2681
Worker	5.1918	2.6004	47.7506	0.1854	29.6321	0.0700	29.7022	7.8853	0.0644	7.9498	0.0000	17,001.1211	17,001.1211	0.2435	0.3694	17,117.2882
Total	**5.8247**	**32.0300**	**60.2956**	**0.3015**	**34.2428**	**0.2295**	**34.4723**	**9.2193**	**0.2169**	**9.4362**	**0.0000**	**29,027.3260**	**29,027.3260**	**1.3458**	**2.1530**	**29,702.5563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4919	44.0922	99.2370	0.1906		0.5567	0.5567		0.5567	0.5567	0.0000	16,184.3337	16,184.3337	0.6028	0.0000	16,199.4036
Total	**7.4919**	**44.0922**	**99.2370**	**0.1906**		**0.5567**	**0.5567**		**0.5567**	**0.5567**	**0.0000**	**16,184.3337**	**16,184.3337**	**0.6028**	**0.0000**	**16,199.4036**

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

3.5 Building Construction - 2036

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6330	29.4296	12.5450	0.1161	4.6107	0.1594	4.7701	1.3340	0.1525	1.4865	0.0000	12,026.2048	12,026.2048	1.1023	1.7836	12,585.2681
Worker	5.1918	2.6004	47.7506	0.1854	29.6321	0.0700	29.7022	7.8853	0.0644	7.9498	0.0000	17,001.1211	17,001.1211	0.2435	0.3694	17,117.2882
Total	**5.8247**	**32.0300**	**60.2956**	**0.3015**	**34.2428**	**0.2295**	**34.4723**	**9.2193**	**0.2169**	**9.4362**	**0.0000**	**29,027.3260**	**29,027.3260**	**1.3458**	**2.1530**	**29,702.5563**

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4633	43.9239	98.8584	0.1899		0.5546	0.5546		0.5546	0.5546	0.0000	16,122.5806	16,122.5806	0.6005	0.0000	16,137.5930
Total	**7.4633**	**43.9239**	**98.8584**	**0.1899**		**0.5546**	**0.5546**		**0.5546**	**0.5546**	**0.0000**	**16,122.5806**	**16,122.5806**	**0.6005**	**0.0000**	**16,137.5930**

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

3.5 Building Construction - 2037

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6306	29.3173	12.4971	0.1156	4.5931	0.1588	4.7519	1.3289	0.1519	1.4808	0.0000	11,980.3033	11,980.3033	1.0981	1.7768	12,537.2328
Worker	5.1719	2.5905	47.5683	0.1847	29.5190	0.0698	29.5888	7.8552	0.0642	7.9194	0.0000	16,936.2313	16,936.2313	0.2425	0.3680	17,051.9550
Total	**5.8025**	**31.9078**	**60.0654**	**0.3003**	**34.1121**	**0.2286**	**34.3407**	**9.1841**	**0.2161**	**9.4002**	**0.0000**	**28,916.5346**	**28,916.5346**	**1.3406**	**2.1448**	**29,589.1878**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.4633	43.9239	98.8582	0.1899		0.5546	0.5546		0.5546	0.5546	0.0000	16,122.5615	16,122.5615	0.6005	0.0000	16,137.5738
Total	**7.4633**	**43.9239**	**98.8582**	**0.1899**		**0.5546**	**0.5546**		**0.5546**	**0.5546**	**0.0000**	**16,122.5615**	**16,122.5615**	**0.6005**	**0.0000**	**16,137.5738**

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

3.5 Building Construction - 2037

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6306	29.3173	12.4971	0.1156	4.5931	0.1588	4.7519	1.3289	0.1519	1.4808	0.0000	11,980.3033	11,980.3033	1.0981	1.7768	12,537.2328
Worker	5.1719	2.5905	47.5683	0.1847	29.5190	0.0698	29.5888	7.8552	0.0642	7.9194	0.0000	16,936.2313	16,936.2313	0.2425	0.3680	17,051.9550
Total	**5.8025**	**31.9078**	**60.0654**	**0.3003**	**34.1121**	**0.2286**	**34.3407**	**9.1841**	**0.2161**	**9.4002**	**0.0000**	**28,916.5346**	**28,916.5346**	**1.3406**	**2.1448**	**29,589.1878**

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4583	8.5828	19.3172	0.0371		0.1084	0.1084		0.1084	0.1084	0.0000	3,150.3893	3,150.3893	0.1173	0.0000	3,153.3228
Total	**1.4583**	**8.5828**	**19.3172**	**0.0371**		**0.1084**	**0.1084**		**0.1084**	**0.1084**	**0.0000**	**3,150.3893**	**3,150.3893**	**0.1173**	**0.0000**	**3,153.3228**

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

3.5 Building Construction - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1232	5.7287	2.4420	0.0226	0.8975	0.0310	0.9285	0.2597	0.0297	0.2894	0.0000	2,340.9788	2,340.9788	0.2146	0.3472	2,449.8041
Worker	1.0106	0.5062	9.2950	0.0361	5.7681	0.0136	5.7817	1.5349	0.0125	1.5475	0.0000	3,309.3785	3,309.3785	0.0474	0.0719	3,331.9912
Total	**1.1338**	**6.2349**	**11.7369**	**0.0587**	**6.6656**	**0.0447**	**6.7103**	**1.7946**	**0.0422**	**1.8368**	**0.0000**	**5,650.3573**	**5,650.3573**	**0.2620**	**0.4191**	**5,781.7953**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4583	8.5828	19.3171	0.0371		0.1084	0.1084		0.1084	0.1084	0.0000	3,150.3856	3,150.3856	0.1173	0.0000	3,153.3190
Total	**1.4583**	**8.5828**	**19.3171**	**0.0371**		**0.1084**	**0.1084**		**0.1084**	**0.1084**	**0.0000**	**3,150.3856**	**3,150.3856**	**0.1173**	**0.0000**	**3,153.3190**

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

3.5 Building Construction - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1232	5.7287	2.4420	0.0226	0.8975	0.0310	0.9285	0.2597	0.0297	0.2894	0.0000	2,340.9788	2,340.9788	0.2146	0.3472	2,449.8041
Worker	1.0106	0.5062	9.2950	0.0361	5.7681	0.0136	5.7817	1.5349	0.0125	1.5475	0.0000	3,309.3785	3,309.3785	0.0474	0.0719	3,331.9912
Total	**1.1338**	**6.2349**	**11.7369**	**0.0587**	**6.6656**	**0.0447**	**6.7103**	**1.7946**	**0.0422**	**1.8368**	**0.0000**	**5,650.3573**	**5,650.3573**	**0.2620**	**0.4191**	**5,781.7953**

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.6284	24.0637	78.0731	0.1384		0.9248	0.9248		0.9248	0.9248	0.0000	11,893.1105	11,893.1105	0.4577	0.0000	11,904.5531
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.6284**	**24.0637**	**78.0731**	**0.1384**		**0.9248**	**0.9248**		**0.9248**	**0.9248**	**0.0000**	**11,893.1105**	**11,893.1105**	**0.4577**	**0.0000**	**11,904.5531**

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

3.6 Paving - 2038

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1021	0.0511	0.9391	3.6500e-003	0.5828	1.3800e-003	0.5841	0.1551	1.2700e-003	0.1563	0.0000	334.3518	334.3518	4.7900e-003	7.2600e-003	336.6364
Total	**0.1021**	**0.0511**	**0.9391**	**3.6500e-003**	**0.5828**	**1.3800e-003**	**0.5841**	**0.1551**	**1.2700e-003**	**0.1563**	**0.0000**	**334.3518**	**334.3518**	**4.7900e-003**	**7.2600e-003**	**336.6364**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.6284	24.0637	78.0730	0.1384		0.9248	0.9248		0.9248	0.9248	0.0000	11,893.0964	11,893.0964	0.4577	0.0000	11,904.5389
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.6284**	**24.0637**	**78.0730**	**0.1384**		**0.9248**	**0.9248**		**0.9248**	**0.9248**	**0.0000**	**11,893.0964**	**11,893.0964**	**0.4577**	**0.0000**	**11,904.5389**

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

3.6 Paving - 2038

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1021	0.0511	0.9391	3.6500e-003	0.5828	1.3800e-003	0.5841	0.1551	1.2700e-003	0.1563	0.0000	334.3518	334.3518	4.7900e-003	7.2600e-003	336.6364
Total	**0.1021**	**0.0511**	**0.9391**	**3.6500e-003**	**0.5828**	**1.3800e-003**	**0.5841**	**0.1551**	**1.2700e-003**	**0.1563**	**0.0000**	**334.3518**	**334.3518**	**4.7900e-003**	**7.2600e-003**	**336.6364**

3.6 Paving - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.6433	2.7501	8.9226	0.0158		0.1057	0.1057		0.1057	0.1057	0.0000	1,359.2126	1,359.2126	0.0523	0.0000	1,360.5204
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.6433**	**2.7501**	**8.9226**	**0.0158**		**0.1057**	**0.1057**		**0.1057**	**0.1057**	**0.0000**	**1,359.2126**	**1,359.2126**	**0.0523**	**0.0000**	**1,360.5204**

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

3.6 Paving - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0117	5.8400e-003	0.1073	4.2000e-004	0.0666	1.6000e-004	0.0668	0.0177	1.4000e-004	0.0179	0.0000	38.2116	38.2116	5.5000e-004	8.3000e-004	38.4727
Total	**0.0117**	**5.8400e-003**	**0.1073**	**4.2000e-004**	**0.0666**	**1.6000e-004**	**0.0668**	**0.0177**	**1.4000e-004**	**0.0179**	**0.0000**	**38.2116**	**38.2116**	**5.5000e-004**	**8.3000e-004**	**38.4727**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.6432	2.7501	8.9226	0.0158		0.1057	0.1057		0.1057	0.1057	0.0000	1,359.2110	1,359.2110	0.0523	0.0000	1,360.5187
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.6432**	**2.7501**	**8.9226**	**0.0158**		**0.1057**	**0.1057**		**0.1057**	**0.1057**	**0.0000**	**1,359.2110**	**1,359.2110**	**0.0523**	**0.0000**	**1,360.5187**

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

3.6 Paving - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0117	5.8400e-003	0.1073	4.2000e-004	0.0666	1.6000e-004	0.0668	0.0177	1.4000e-004	0.0179	0.0000	38.2116	38.2116	5.5000e-004	8.3000e-004	38.4727
Total	**0.0117**	**5.8400e-003**	**0.1073**	**4.2000e-004**	**0.0666**	**1.6000e-004**	**0.0668**	**0.0177**	**1.4000e-004**	**0.0179**	**0.0000**	**38.2116**	**38.2116**	**5.5000e-004**	**8.3000e-004**	**38.4727**

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	210.0352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6482	4.1667	9.8667	0.0163		0.0545	0.0545		0.0545	0.0545	0.0000	1,404.0342	1,404.0342	0.0519	0.0000	1,405.3313
Total	**210.6834**	**4.1667**	**9.8667**	**0.0163**		**0.0545**	**0.0545**		**0.0545**	**0.0545**	**0.0000**	**1,404.0342**	**1,404.0342**	**0.0519**	**0.0000**	**1,405.3313**

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

3.7 Architectural Coating - 2039

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.9275	0.4645	8.5301	0.0331	5.2934	0.0125	5.3060	1.4086	0.0115	1.4201	0.0000	3,037.0529	3,037.0529	0.0435	0.0660	3,057.8048
Total	**0.9275**	**0.4645**	**8.5301**	**0.0331**	**5.2934**	**0.0125**	**5.3060**	**1.4086**	**0.0115**	**1.4201**	**0.0000**	**3,037.0529**	**3,037.0529**	**0.0435**	**0.0660**	**3,057.8048**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	210.0352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6482	4.1667	9.8667	0.0163		0.0545	0.0545		0.0545	0.0545	0.0000	1,404.0326	1,404.0326	0.0519	0.0000	1,405.3296
Total	**210.6834**	**4.1667**	**9.8667**	**0.0163**		**0.0545**	**0.0545**		**0.0545**	**0.0545**	**0.0000**	**1,404.0326**	**1,404.0326**	**0.0519**	**0.0000**	**1,405.3296**

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

3.7 Architectural Coating - 2039

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.9275	0.4645	8.5301	0.0331	5.2934	0.0125	5.3060	1.4086	0.0115	1.4201	0.0000	3,037.0529	3,037.0529	0.0435	0.0660	3,057.8048
Total	**0.9275**	**0.4645**	**8.5301**	**0.0331**	**5.2934**	**0.0125**	**5.3060**	**1.4086**	**0.0115**	**1.4201**	**0.0000**	**3,037.0529**	**3,037.0529**	**0.0435**	**0.0660**	**3,057.8048**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	217.0873	181.5561	2,121.1051	4.1361	574.8275	1.9059	576.7334	153.6198	1.7788	155.3986	0.0000	381,633.9091	381,633.9091	26.3500	17.5954	387,536.0988
Unmitigated	217.0873	181.5561	2,121.1051	4.1361	574.8275	1.9059	576.7334	153.6198	1.7788	155.3986	0.0000	381,633.9091	381,633.9091	26.3500	17.5954	387,536.0988

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Condo/Townhouse	0.00	0.00	0.00		
Single Family Housing	678,134.34	678,134.34	677924.91	1,566,154,922	1,566,154,922
Total	678,134.34	678,134.34	677,924.91	1,566,154,922	1,566,154,922

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436
Condo/Townhouse	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

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

Single Family Housing	0.407207	0.082720	0.254324	0.166402	0.029435	0.008110	0.011734	0.001479	0.001216	0.000418	0.033069	0.000452	0.003436

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27,016.6267	27,016.6267	4.3708	0.5298	27,283.7731
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27,016.6267	27,016.6267	4.3708	0.5298	27,283.7731
NaturalGas Mitigated	6.6811	57.0933	24.2950	0.3644		4.6161	4.6161		4.6161	4.6161	0.0000	66,120.1905	66,120.1905	1.2673	1.2122	66,513.1097
NaturalGas Unmitigated	6.6811	57.0933	24.2950	0.3644		4.6161	4.6161		4.6161	4.6161	0.0000	66,120.1905	66,120.1905	1.2673	1.2122	66,513.1097

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.24264e+008	0.6701	5.7259	2.4366	0.0366		0.4630	0.4630		0.4630	0.4630	0.0000	6,631.2121	6,631.2121	0.1271	0.1216	6,670.6181
Condo/Townhouse	3.06567e+008	1.6531	14.1261	6.0111	0.0902		1.1421	1.1421		1.1421	1.1421	0.0000	16,359.5884	16,359.5884	0.3136	0.2999	16,456.8053
Single Family Housing	8.08214e+008	4.3580	37.2412	15.8473	0.2377		3.0110	3.0110		3.0110	3.0110	0.0000	43,129.3900	43,129.3900	0.8267	0.7907	43,385.6864
Total		**6.6811**	**57.0933**	**24.2950**	**0.3644**		**4.6161**	**4.6161**		**4.6161**	**4.6161**	**0.0000**	**66,120.1905**	**66,120.1905**	**1.2673**	**1.2122**	**66,513.1097**

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

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.24264e+008	0.6701	5.7259	2.4366	0.0366		0.4630	0.4630		0.4630	0.4630	0.0000	6,631.2121	6,631.2121	0.1271	0.1216	6,670.6181
Condo/Townhouse	3.06567e+008	1.6531	14.1261	6.0111	0.0902		1.1421	1.1421		1.1421	1.1421	0.0000	16,359.5884	16,359.5884	0.3136	0.2999	16,456.8053
Single Family Housing	8.08214e+008	4.3580	37.2412	15.8473	0.2377		3.0110	3.0110		3.0110	3.0110	0.0000	43,129.3900	43,129.3900	0.8267	0.7907	43,385.6864
Total		**6.6811**	**57.0933**	**24.2950**	**0.3644**		**4.6161**	**4.6161**		**4.6161**	**4.6161**	**0.0000**	**66,120.1905**	**66,120.1905**	**1.2673**	**1.2122**	**66,513.1097**

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.71996e+007	5,292.3221	0.8562	0.1038	5,344.6538
Condo/Townhouse	7.12213e+007	6,589.6619	1.0661	0.1292	6,654.8220
Single Family Housing	1.63576e+008	15,134.6426	2.4485	0.2968	15,284.2973
Total		**27,016.6267**	**4.3708**	**0.5298**	**27,283.7731**

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.71996e+007	5,292.3221	0.8562	0.1038	5,344.6538
Condo/Townhouse	7.12213e+007	6,589.6619	1.0661	0.1292	6,654.8220
Single Family Housing	1.63576e+008	15,134.6426	2.4485	0.2968	15,284.2973
Total		**27,016.6267**	**4.3708**	**0.5298**	**27,283.7731**

6.0 Area Detail

6.1 Mitigation Measures Area

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	477.9628	7.4226	575.2902	0.3469		29.8852	29.8852		29.8852	29.8852	2,471.7055	1,815.8793	4,287.5848	0.6047	0.2402	4,374.2761
Unmitigated	477.9628	7.4226	575.2902	0.3469		29.8852	29.8852		29.8852	29.8852	2,471.7055	1,815.8793	4,287.5848	0.6047	0.2402	4,374.2761

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	21.0035					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	262.1895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	183.6308	3.1239	202.8636	0.3272		27.8108	27.8108		27.8108	27.8108	2,471.7055	1,204.8427	3,676.5483	0.0231	0.2402	3,748.6994
Landscaping	11.1390	4.2988	372.4266	0.0198		2.0744	2.0744		2.0744	2.0744	0.0000	611.0365	611.0365	0.5816	0.0000	625.5767
Total	**477.9628**	**7.4226**	**575.2902**	**0.3469**		**29.8852**	**29.8852**		**29.8852**	**29.8852**	**2,471.7055**	**1,815.8793**	**4,287.5848**	**0.6047**	**0.2402**	**4,374.2761**

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

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	21.0035					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	262.1895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	183.6308	3.1239	202.8636	0.3272		27.8108	27.8108		27.8108	27.8108	2,471.7055	1,204.8427	3,676.5483	0.0231	0.2402	3,748.6994
Landscaping	11.1390	4.2988	372.4266	0.0198		2.0744	2.0744		2.0744	2.0744	0.0000	611.0365	611.0365	0.5816	0.0000	625.5767
Total	**477.9628**	**7.4226**	**575.2902**	**0.3469**		**29.8852**	**29.8852**		**29.8852**	**29.8852**	**2,471.7055**	**1,815.8793**	**4,287.5848**	**0.6047**	**0.2402**	**4,374.2761**

7.0 Water Detail

7.1 Mitigation Measures Water

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

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3,354.7902	107.3311	2.5709	6,804.1820
Unmitigated	3,354.7902	107.3311	2.5709	6,804.1820

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	958.937 / 604.547	980.0870	31.3563	0.7511	1,987.8114
Condo/Townhouse	958.937 / 604.547	980.0870	31.3563	0.7511	1,987.8114
Single Family Housing	1364.52 / 860.241	1,394.6162	44.6185	1.0687	2,828.5592
Total		**3,354.7902**	**107.3311**	**2.5709**	**6,804.1820**

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

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	958.937 / 604.547	980.0870	31.3563	0.7511	1,987.8114
Condo/Townhouse	958.937 / 604.547	980.0870	31.3563	0.7511	1,987.8114
Single Family Housing	1364.52 / 860.241	1,394.6162	44.6185	1.0687	2,828.5592
Total		**3,354.7902**	**107.3311**	**2.5709**	**6,804.1820**

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	8,109.0952	479.2338	0.0000	20,089.9400
Unmitigated	8,109.0952	479.2338	0.0000	20,089.9400

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	6770.28	1,374.3057	81.2191	0.0000	3,404.7841
Condo/Townhouse	6770.28	1,374.3057	81.2191	0.0000	3,404.7841
Single Family Housing	26407.5	5,360.4839	316.7955	0.0000	13,280.3719
Total		**8,109.0952**	**479.2338**	**0.0000**	**20,089.9400**

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

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	6770.28	1,374.3057	81.2191	0.0000	3,404.7841
Condo/Townhouse	6770.28	1,374.3057	81.2191	0.0000	3,404.7841
Single Family Housing	26407.5	5,360.4839	316.7955	0.0000	13,280.3719
Total		**8,109.0952**	**479.2338**	**0.0000**	**20,089.9400**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

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

11.0 Vegetation

Redwood City Focused General Plan Update Project

Appendix E: Noise Analysis Technical Appendices

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Chandler, AZ 85249

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Simi Valley, CA 93065

24-Hour Continuous Noise Measurement Datasheet

Project:	Redwood City EIR Noise	**Site Observations:**	24hr reading, no wind, sunny during the day, clear skies, 64° at 9:10 PM with highs in mid 70's next day. Moderate but constant traffic. New construction on Main St. roughly in front of Township Apts
Site Address/Location:	975 Veterans Blvd		
Date:	7/21/22-7/22/22		
Field Tech/Engineer:	Dennis Jordan		

General Location:

Sound Meter: Piccolo 2 **SN:** P0220030907

Settings: A-weighted, slow, 1-min, 24-hour duration

Meteorological Con.: 2 to 5 mph wind, eastern direction

Site ID: LT1

Site Topo: Flat

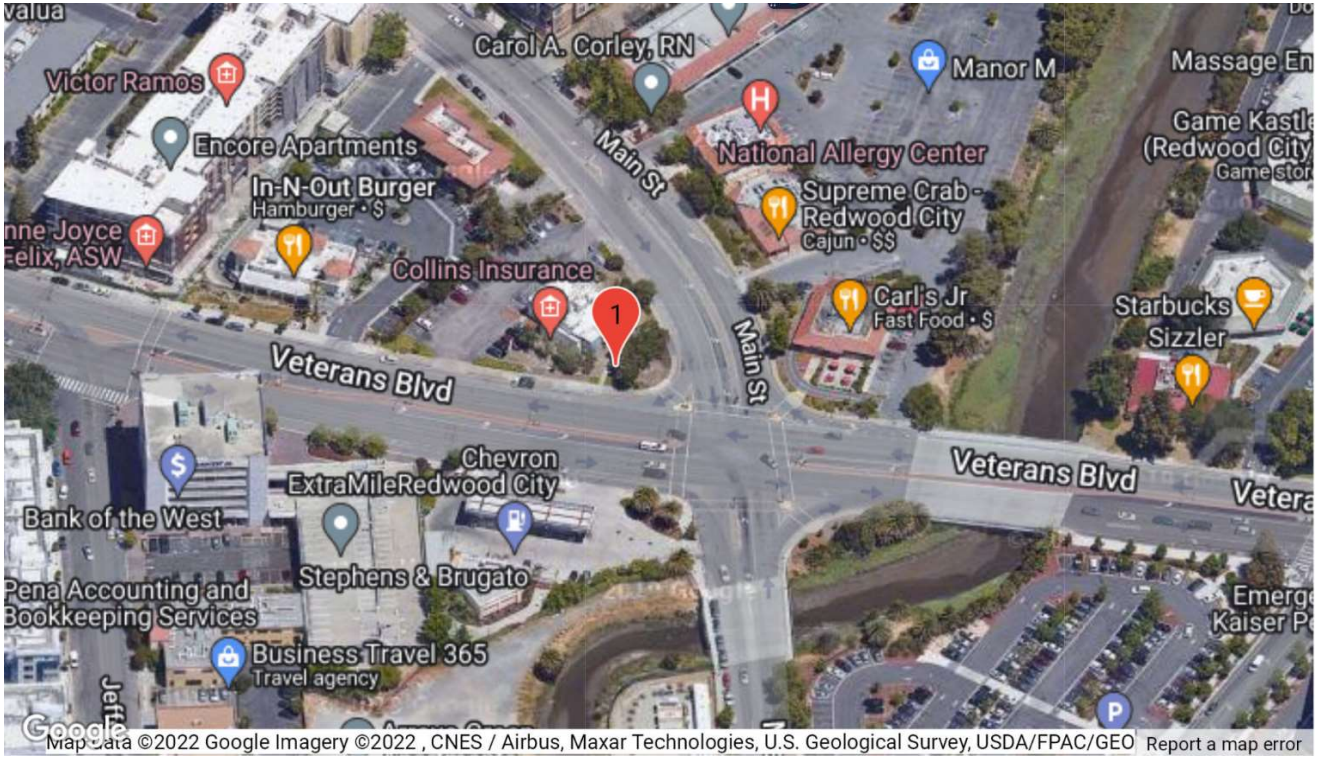
Ground Type: Hard

Noise Source(s) w/ Distance:

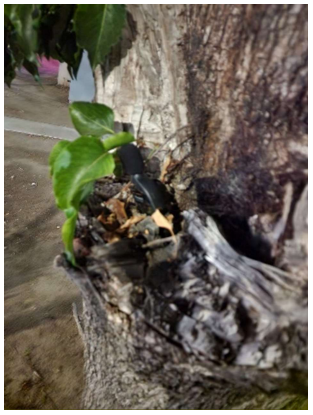
30' from Veterans Blvd

39' from Main St

Figure 1: LT-1 Monitoring Location







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Simi Valley, CA 93065

24-Hour Noise Measurement Datasheet - Cont.

Project: Redwood City EIR Noise **Day:** 1 of 1
Site Address/Location: 975 Veterans Blvd
Site ID: LT1

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
7/21/2022	9:00 PM	10:00 PM	66.7	90.5	45.6	75.4	72.1	68.4	63.4	59.6
7/21/2022	10:00 PM	11:00 PM	61.3	80.4	49.5	67.3	65.3	63.2	60.4	56.5
7/21/2022	11:00 PM	12:00 AM	62.6	86.2	48.7	69.5	66.5	65.3	60.2	56.3
7/22/2022	12:00 AM	1:00 AM	61.4	76.8	53.3	65.2	62.1	61.4	56.1	51.8
7/22/2022	1:00 AM	2:00 AM	55.1	76.0	47.2	60.9	59.8	58.6	52.0	48.6
7/22/2022	2:00 AM	3:00 AM	56.3	77.3	47.3	63.2	61.5	59.7	53.8	48.6
7/22/2022	3:00 AM	4:00 AM	57.1	72.9	47.2	63.9	62.0	61.2	53.8	48.6
7/22/2022	4:00 AM	5:00 AM	61.7	85.4	47.5	68.5	67.9	64.8	56.9	51.8
7/22/2022	5:00 AM	6:00 AM	62.9	83.8	49.1	69.0	67.5	65.3	60.4	56.3
7/22/2022	6:00 AM	7:00 AM	65.3	83.9	51.1	72.4	70.0	68.4	63.2	59.4
7/22/2022	7:00 AM	8:00 AM	66.9	85.5	51.8	72.2	70.7	70.0	66.1	62.6
7/22/2022	8:00 AM	9:00 AM	67.9	89.8	52.7	74.9	72.7	68.7	66.1	62.9
7/22/2022	9:00 AM	10:00 AM	66.8	86.8	53.4	72.8	71.0	69.3	65.6	61.2
7/22/2022	10:00 AM	11:00 AM	69.0	91.7	52.7	77.1	75.6	71.7	65.7	61.4
7/22/2022	11:00 AM	12:00 PM	68.3	92.2	54.4	76.4	72.6	70.4	66.5	63.1
7/22/2022	12:00 PM	1:00 PM	68.2	89.5	54.2	74.3	73.2	70.1	66.3	64.1
7/22/2022	1:00 PM	2:00 PM	67.8	93.7	52.2	74.4	69.2	68.4	66.0	62.6
7/22/2022	2:00 PM	3:00 PM	67.8	88.8	53.9	75.4	70.9	69.3	65.7	62.9
7/22/2022	3:00 PM	4:00 PM	68.1	92.5	54.7	73.4	69.8	68.8	66.0	63.4
7/22/2022	4:00 PM	5:00 PM	67.1	84.6	54.2	72.0	70.4	70.1	66.1	62.7
7/22/2022	5:00 PM	6:00 PM	70.9	100.0	52.6	79.4	71.8	69.4	65.6	62.5
7/22/2022	6:00 PM	7:00 PM	65.5	83.4	53.0	70.9	69.2	68.2	64.2	62.0
7/22/2022	7:00 PM	8:00 PM	65.4	86.8	52.0	71.5	70.8	67.7	63.8	60.9
7/22/2022	8:00 PM	9:00 PM	66.7	90.8	51.6	73.6	72.0	68.9	63.6	60.1

CNEL: 70.1

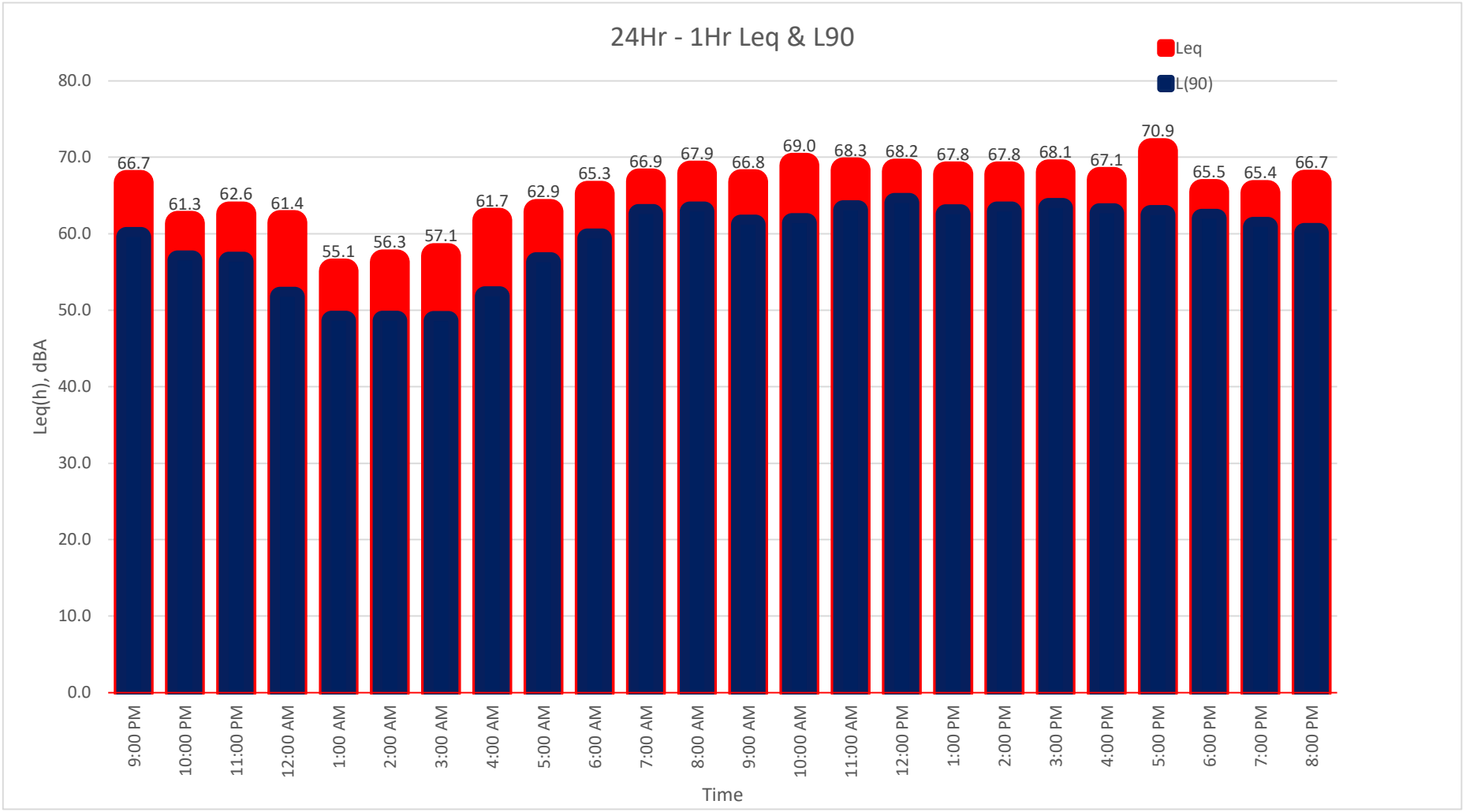
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24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Redwood City EIR Noise **Day:** 1 of 1
Site Address/Location: 975 Veterans Blvd
Site ID: LT1



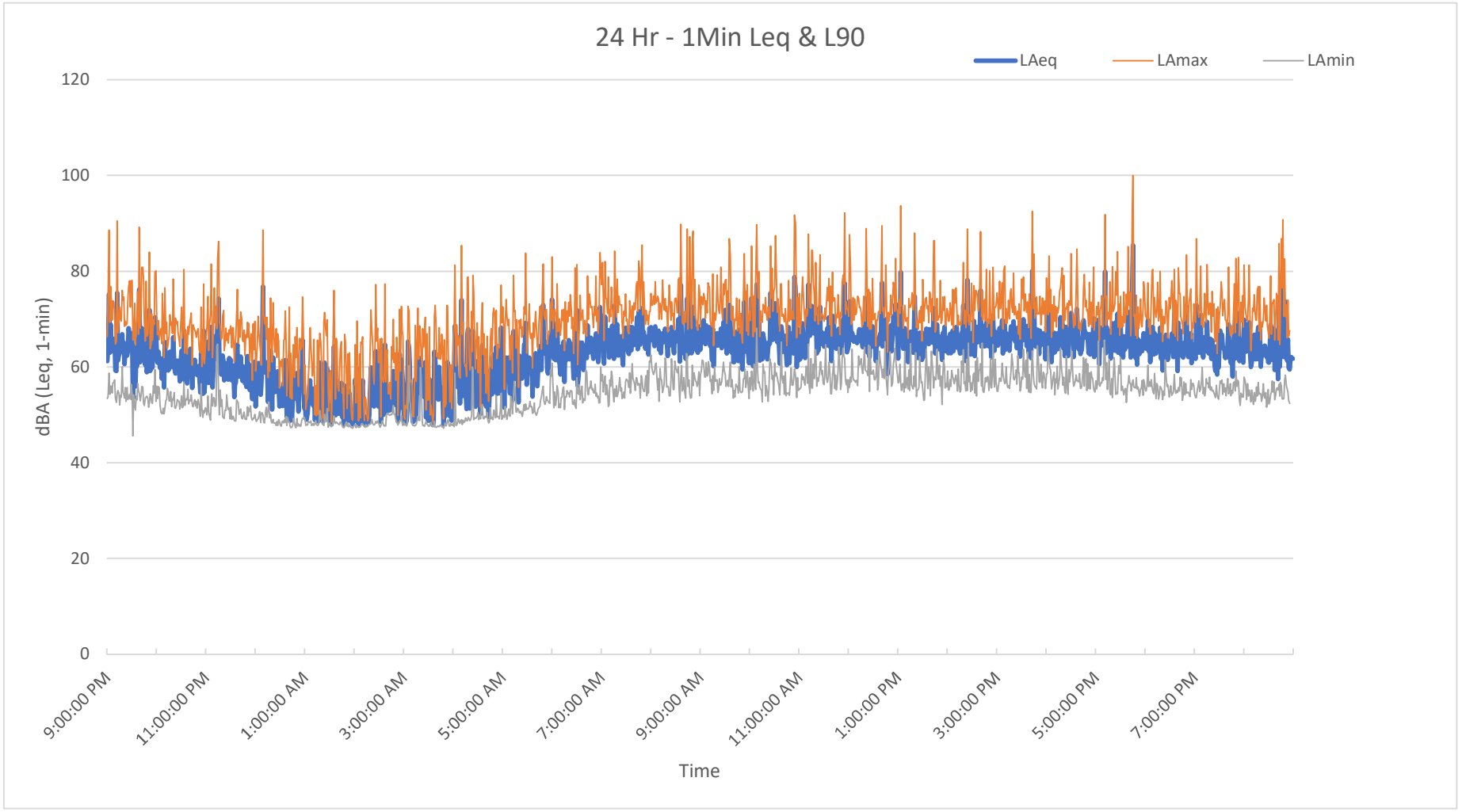
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24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Redwood City EIR Noise **Day:** 1 of 1
Site Address/Location: 975 Veterans Blvd
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24-Hour Continuous Noise Measurement Datasheet

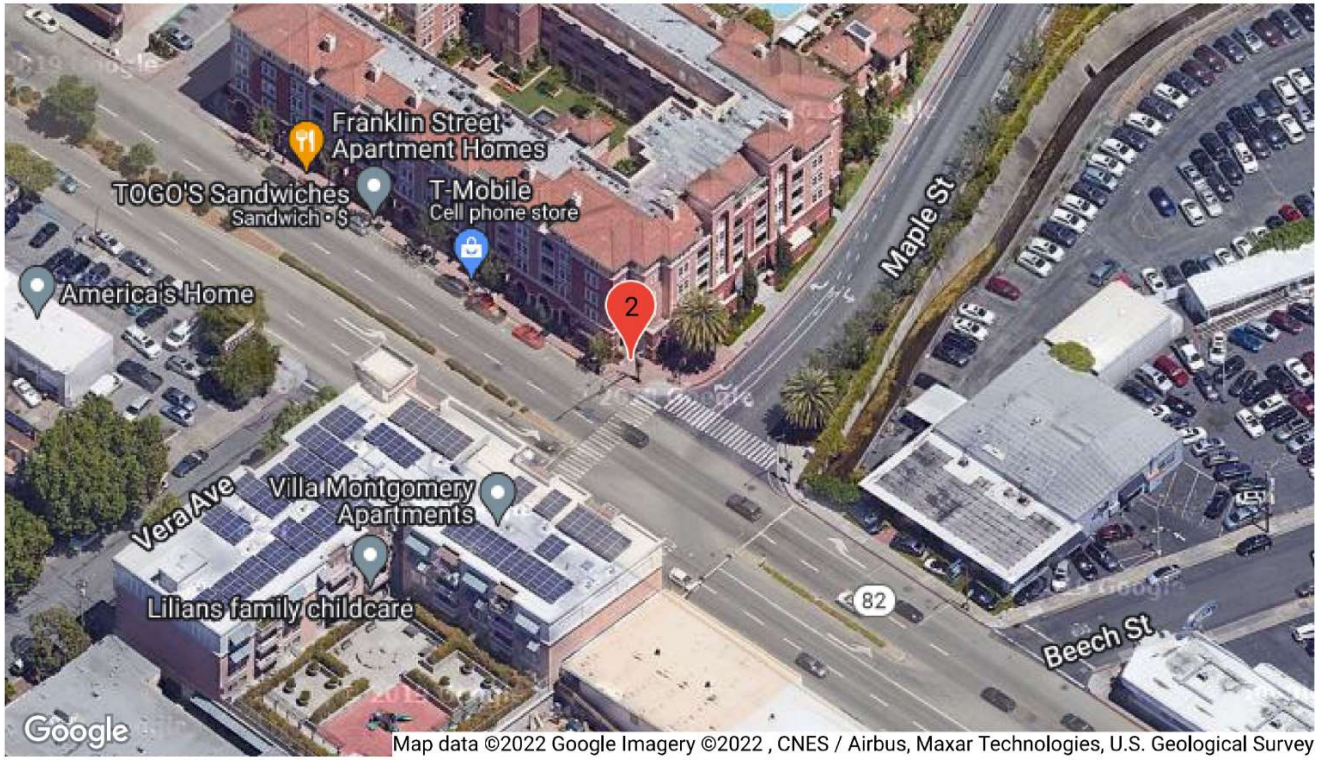
Project:	Redwood City EIR Noise	**Site Observations:**	24 hr reading, winds 2-3 mph, sunny during the day, clear skies, 64 at 9:45 PM, with highs in the mid 70s the next day. Moderate but constant traffic.
Site Address/Location:	1553 El Camino Real		
Date:	7/21/22-7/22/22		
Field Tech/Engineer:	Dennis Jordan		

General Location:

Sound Meter:	Piccolo 2 **SN:** PO221031803	**Site Topo:**	Flat
Settings:	A-weighted, slow, 1-min, 24-hour duration	**Ground Type:**	Hard
Meteorological Con.:	2 to 3 mph wind		
Site ID:	LT2		

Noise Source(s) w/ Distance:
20' from El Camino Real
20' from Maple St

Figure 1: LT-1 Monitoring Location







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24-Hour Noise Measurement Datasheet - Cont.

Project: Redwood City EIR Noise **Day:** 1 of 1
Site Address/Location: 1553 El Camino Real
Site ID: LT2

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
7/21/2022	10:00 PM	11:00 PM	67.7	83.3	45.9	71.2	71.1	70.2	67.0	64.5
7/21/2022	11:00 PM	12:00 AM	68.1	89.3	45.4	74.5	71.6	70.9	66.2	62.2
7/22/2022	12:00 AM	1:00 AM	63.8	83.0	43.8	67.3	66.7	65.8	62.9	57.6
7/22/2022	1:00 AM	2:00 AM	65.2	78.6	46.1	70.6	67.6	67.0	62.0	54.2
7/22/2022	2:00 AM	3:00 AM	61.6	80.8	43.6	66.4	66.2	65.6	60.6	53.1
7/22/2022	3:00 AM	4:00 AM	61.4	81.1	43.4	68.9	66.3	65.1	59.0	46.2
7/22/2022	4:00 AM	5:00 AM	64.4	85.2	43.8	70.7	67.8	67.5	63.1	58.0
7/22/2022	5:00 AM	6:00 AM	69.2	90.0	45.6	75.3	73.0	70.9	67.3	63.0
7/22/2022	6:00 AM	7:00 AM	70.5	84.8	49.7	73.1	72.7	72.5	70.3	67.3
7/22/2022	7:00 AM	8:00 AM	74.1	90.3	58.0	77.9	76.7	76.4	73.6	70.9
7/22/2022	8:00 AM	9:00 AM	73.6	92.1	59.2	77.6	76.4	75.0	73.3	70.7
7/22/2022	9:00 AM	10:00 AM	72.4	88.3	57.9	75.8	75.3	74.7	71.8	69.7
7/22/2022	10:00 AM	11:00 AM	72.3	94.0	58.5	75.4	74.6	74.3	71.4	69.3
7/22/2022	11:00 AM	12:00 PM	71.3	83.1	57.5	74.2	73.6	73.2	71.0	68.9
7/22/2022	12:00 PM	1:00 PM	71.6	91.6	60.5	74.5	73.7	73.1	71.2	68.7
7/22/2022	1:00 PM	2:00 PM	70.6	84.7	57.6	74.5	72.8	72.4	70.2	67.6
7/22/2022	2:00 PM	3:00 PM	71.7	94.5	56.0	77.4	73.6	72.6	70.7	67.6
7/22/2022	3:00 PM	4:00 PM	71.8	98.2	52.3	75.8	72.9	72.4	70.6	67.4
7/22/2022	4:00 PM	5:00 PM	71.0	93.3	53.5	75.2	73.0	72.0	70.1	67.4
7/22/2022	5:00 PM	6:00 PM	71.1	92.0	54.0	75.2	74.3	73.1	70.7	67.1
7/22/2022	6:00 PM	7:00 PM	72.9	98.6	53.8	79.6	77.0	74.3	71.0	67.7
7/22/2022	7:00 PM	8:00 PM	72.8	96.4	52.5	81.2	80.1	73.4	70.6	67.8
7/22/2022	8:00 PM	9:00 PM	70.5	89.3	52.2	74.5	74.4	73.8	69.6	66.3
7/22/2022	9:00 PM	10:00 PM	68.3	83.2	48.1	71.4	70.9	70.1	67.9	65.5

CNEL: 74.9

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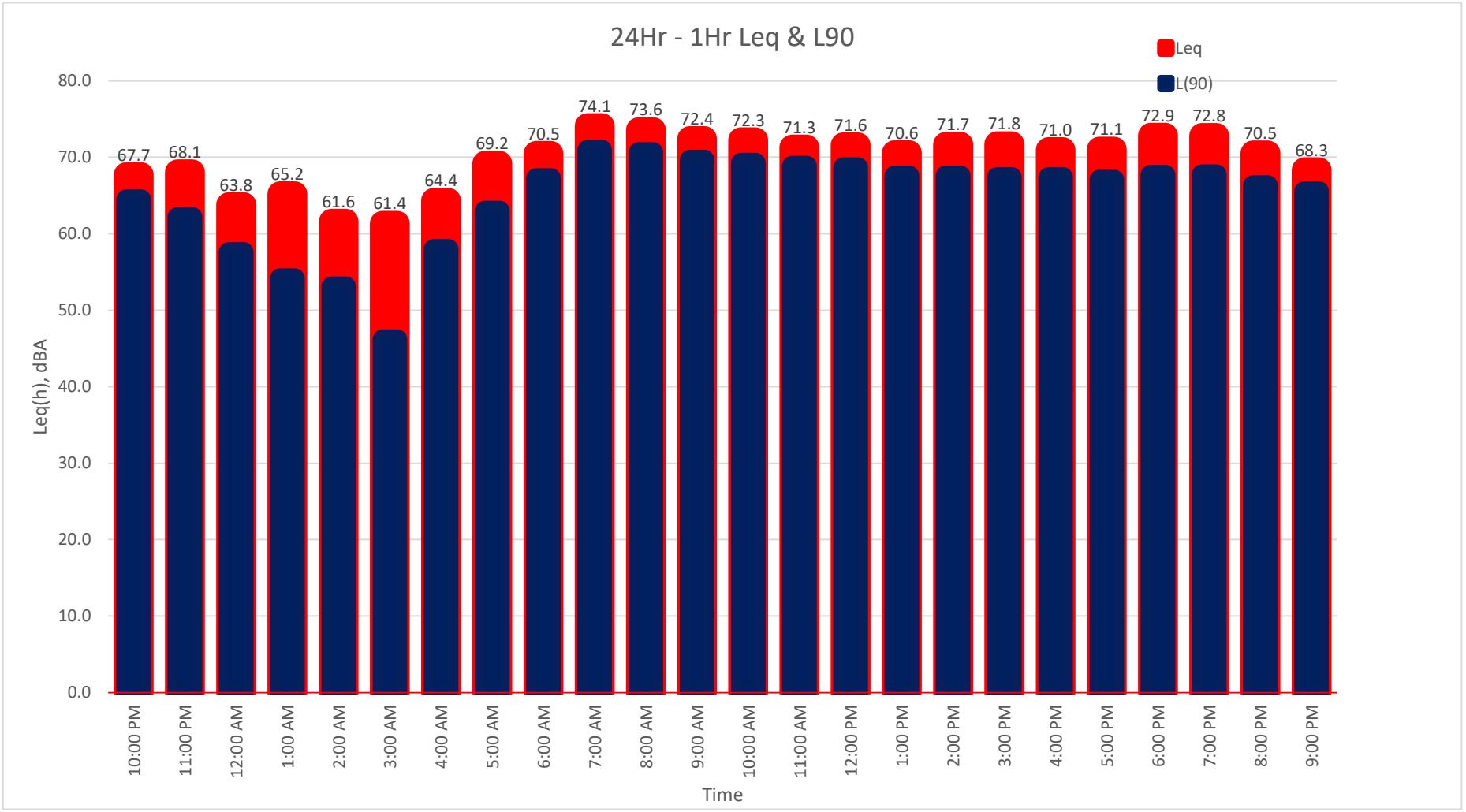
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24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Redwood City EIR Noise **Day:** 1 of 1

Site Address/Location: 1553 El Camino Real

Site ID: LT2



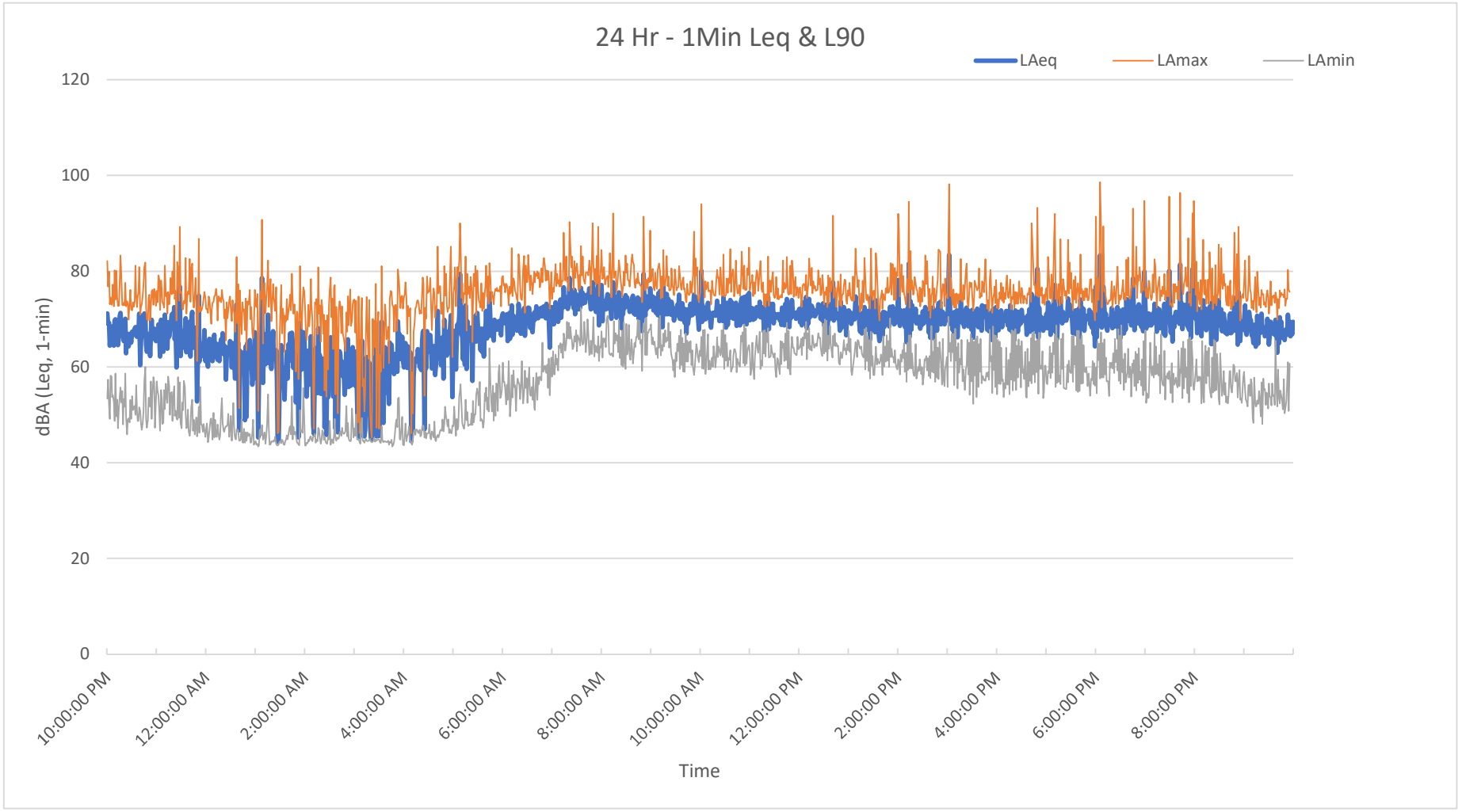
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24-Hour Continuous Noise Measurement Datasheet - Cont.

Project: Redwood City EIR Noise **Day:** 1 of 1
Site Address/Location: 1553 El Camino Real
Site ID: LT2



10-Minute Continuous Noise Measurement Datasheet

Project Name:	Redwood City EIR Noise
Project: #/Name:	0314-2022-001
Site Address/Location:	3015 E Bayshore Rd
Date:	07/22/2022
Field Tech/Engineer:	Dennis Jordan / Claire Pincock

Site Observations:

10 min reading, 71°, sunny and clear skies, winds 10-15 mph, light traffic on Bayshore.

Sound Meter:	XL2, NTI	**SN:**	A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 10-minute interval		
Site Id:	ST-1		



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10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Redwood City EIR Noise

Site Address/Location: 3015 E Bayshore Rd

Site Id: ST-1

Figure 1: ST-1 60ft from roadway and 100 ft from wall of Hwy 101

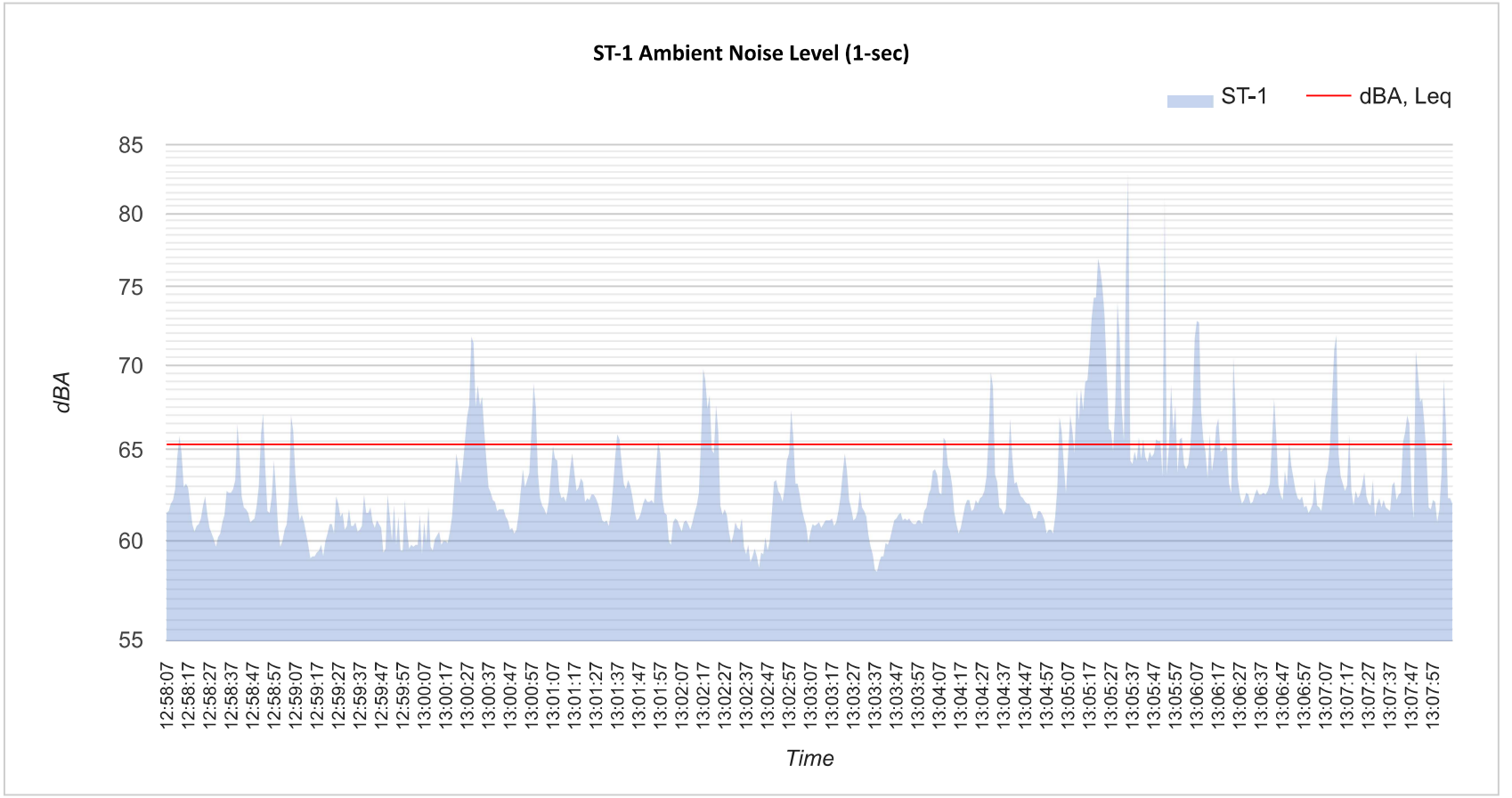


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-1	12:58 PM	1:08 PM	65.3	82.9	58.5	72.7	67.5	64.2	62.3	60.2

10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Redwood City EIR Noise	**Site Topo:**	Single story Mobil Home Park (Ha	**Noise Source(s) w/ Distance:**	
Site Address/Location:	3015 E Bayshore Rd	**Meteorological Cond.:**	71°, winds 5-10 mph, clear and sunny	Road Noise / 60ft from E. Bayshore Rd and 100 ft from wall of Hw	
Site Id:	ST-1	**Ground Type:**	Buildings and Asphalt		



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10-Minute Continuous Noise Measurement Datasheet

Project Name:	Redwood City EIR Noise	**Site Observations:**	
Project: #/Name:	0314-2022-001	72°, winds 5-10 mph, sunny and clear skies, Moderate traffic and moderate foot traffic but constant.	
Site Address/Location:	2000 Broadway		
Date:	07/22/2022		
Field Tech/Engineer:	Dennis Jordan / Claire Pincock		
Sound Meter:	XL2, NTI	**SN:** A2A-05967-E0	
Settings:	A-weighted, slow, 1-sec, 10-minute interval		
Site Id:	ST-2		



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10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Redwood City EIR Noise

Site Address/Location: 2000 Broadway

Site Id: ST-2

Figure 1: ST-2 14ft from Main St, 18 ft from building entrance

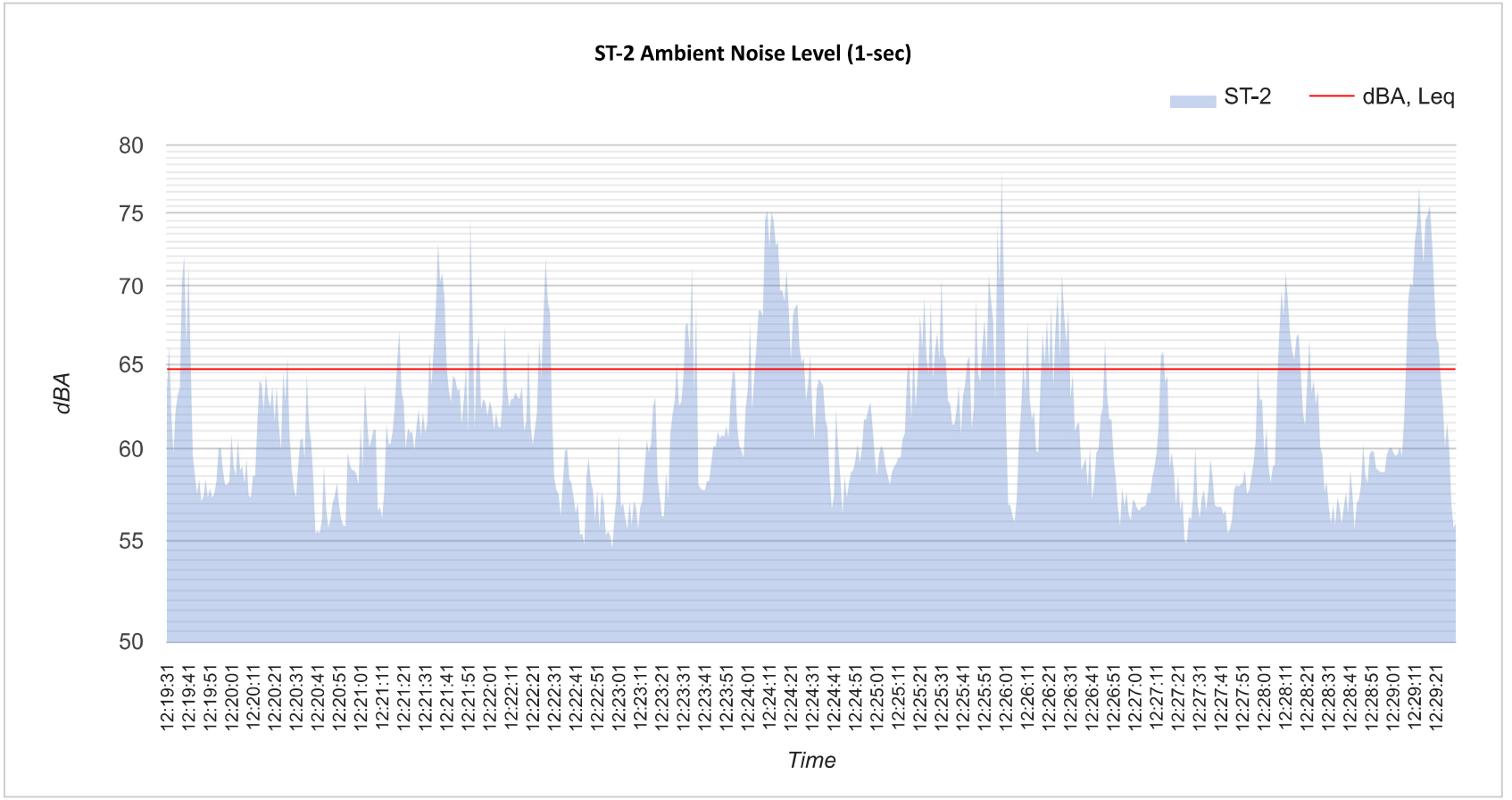


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-2	12:19 PM	12:29 PM	64.7	76.5	54.8	73.8	69	64.1	60.8	56.8

10-Minute Continuous Noise Measurement Datasheet - Cont.

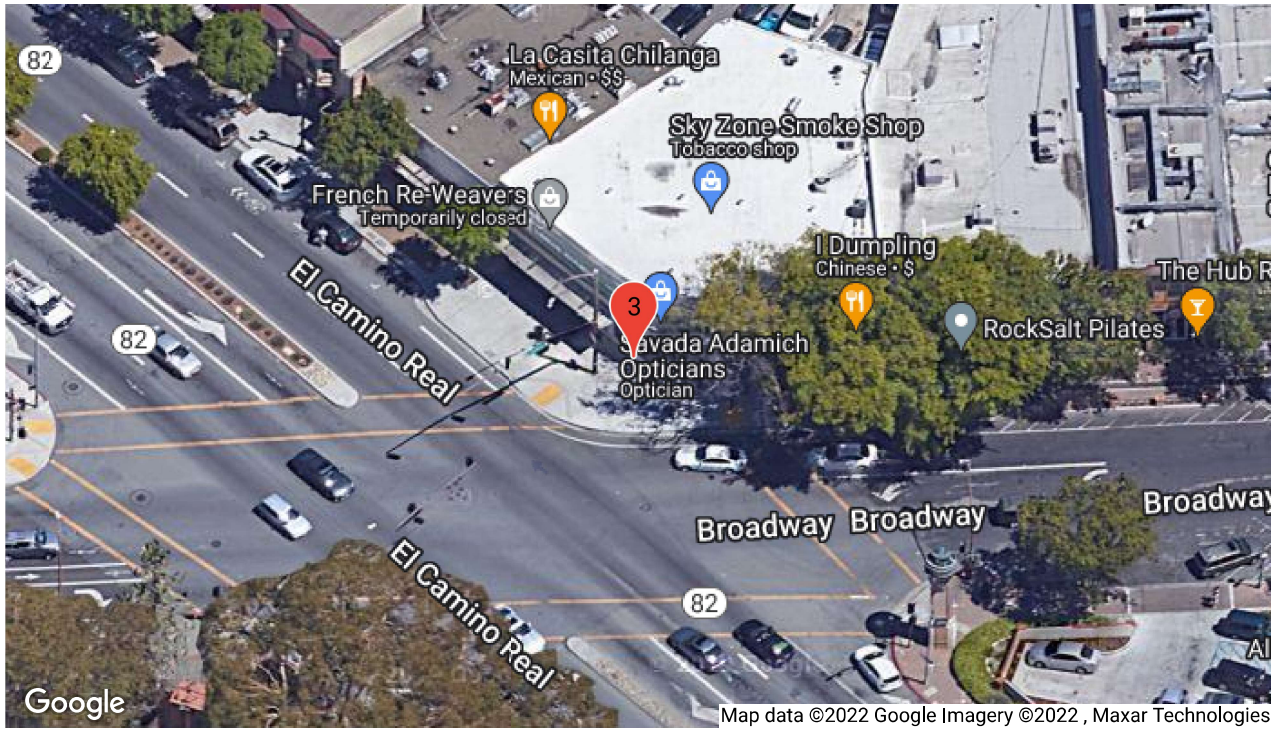
Project Name:	Redwood City EIR Noise	**Site Topo:**	Buildings and Businesses, averag	**Noise Source(s) w/ Distance:**	
Site Address/Location:	2000 Broadway	**Meteorological Cond.:**	72°, winds 5-10 mph, sunny and clear	Road Noise / 14 ft from roadway and constant foot traffic	
Site Id:	ST-2	**Ground Type:**	Buildings and Asphalt		



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10-Minute Continuous Noise Measurement Datasheet

Project Name:	Redwood City EIR Noise	**Site Observations:**	
Project: #/Name:	0314-2022-001	74°, sunny and clear skies, winds 5-10 mph, heavy traffic with light foot traffic	
Site Address/Location:	2666 Broadway		
Date:	07/22/2022		
Field Tech/Engineer:	Dennis Jordan / Claire Pincock		
Sound Meter:	XL2, NTI	**SN:** A2A-05967-E0	
Settings:	A-weighted, slow, 1-sec, 10-minute interval		
Site Id:	ST-3		



MD ACOUSTICS

10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Redwood City EIR Noise

Site Address/Location: 2666 Broadway

Site Id: ST-3

Figure 1: ST-3 20 ft from Broadway and El Camino Real

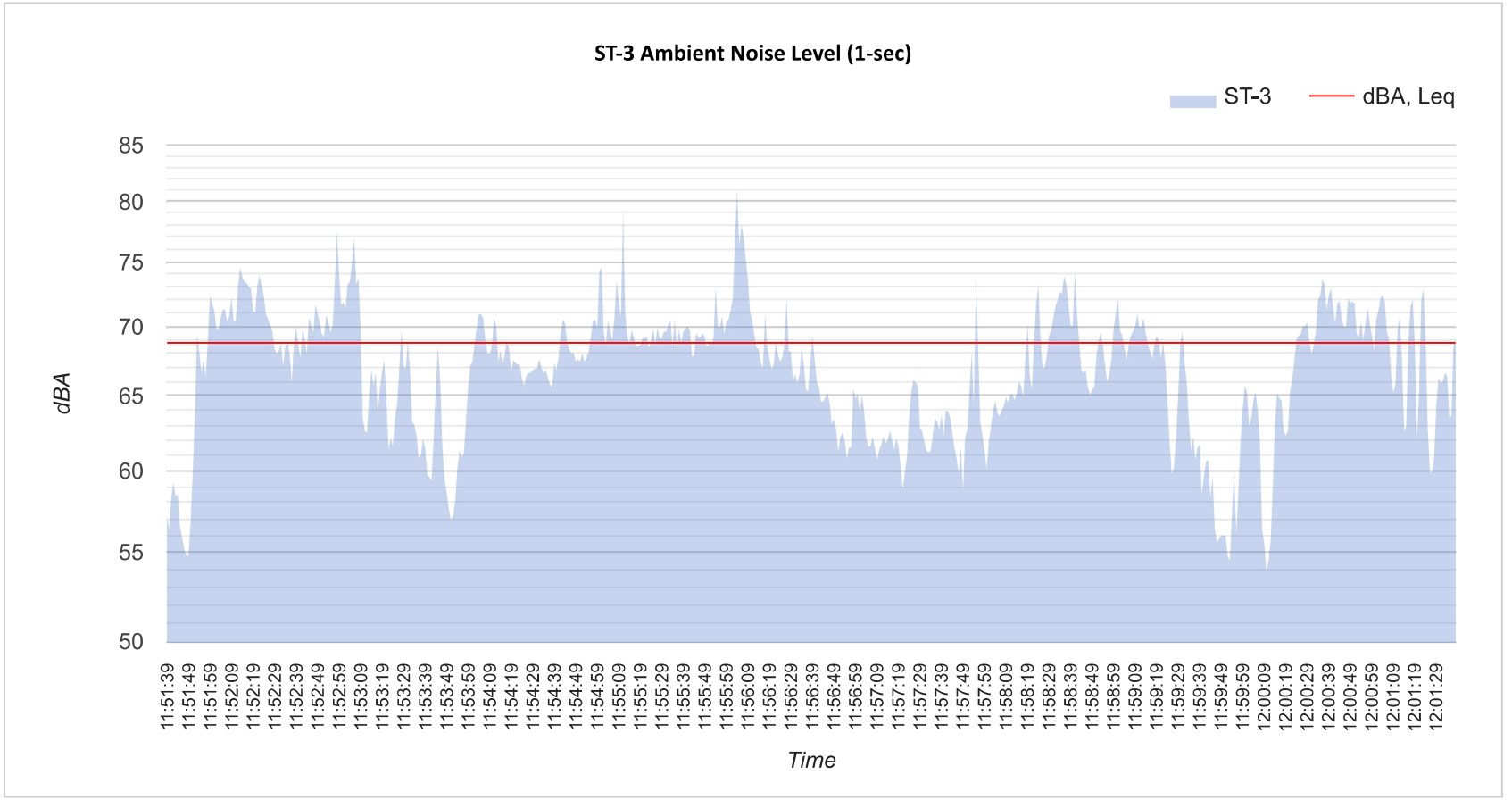


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-3	11:51 AM	12:01 PM	68.8	79.8	54.7	74.2	72.1	69.9	67.6	60.8

10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Redwood City EIR Noise	**Site Topo:**	Buildings 1 to 2 stories tall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	2666 Broadway	**Meteorological Cond.:**	74°, winds 5-10 mph, clear and sunny	Road Noise / 20 ft from corner of Broadway and El Camino Real	
Site Id:	ST-3	**Ground Type:**	Buildings and Asphalt		



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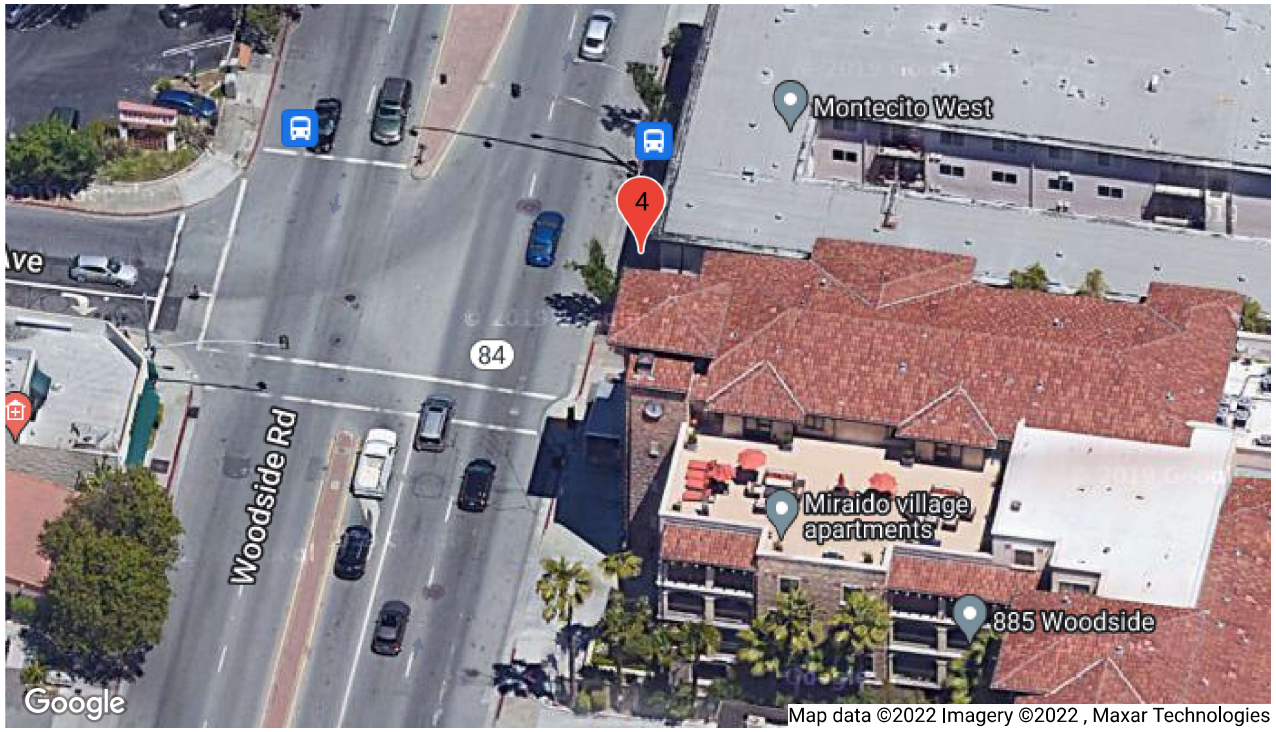
10-Minute Continuous Noise Measurement Datasheet

Project Name:	Redwood City EIR Noise
Project: #/Name:	0314-2022-001
Site Address/Location:	875 Woodside Rd / 885 Woodside R
Date:	07/22/2022
Field Tech/Engineer:	Dennis Jordan / Claire Pincock

Site Observations:

72°, winds 5-10 mph, sunny and clear, heavy traffic and light foot traffic. Meter set between buildings, 10ft from Woodside Rd, 81ft from address 875 and 30ft from address 885 front entrances.

Sound Meter:	XL2, NTI	**SN:**	A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 10-minute interval		
Site Id:	ST-4		



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10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Redwood City EIR Noise

Site Address/Location: 875 Woodside Rd / 885 Woodside R

Site Id: ST-4

Figure 1: ST-4 Meter set between addresses 875 and 885 Woodside Rd

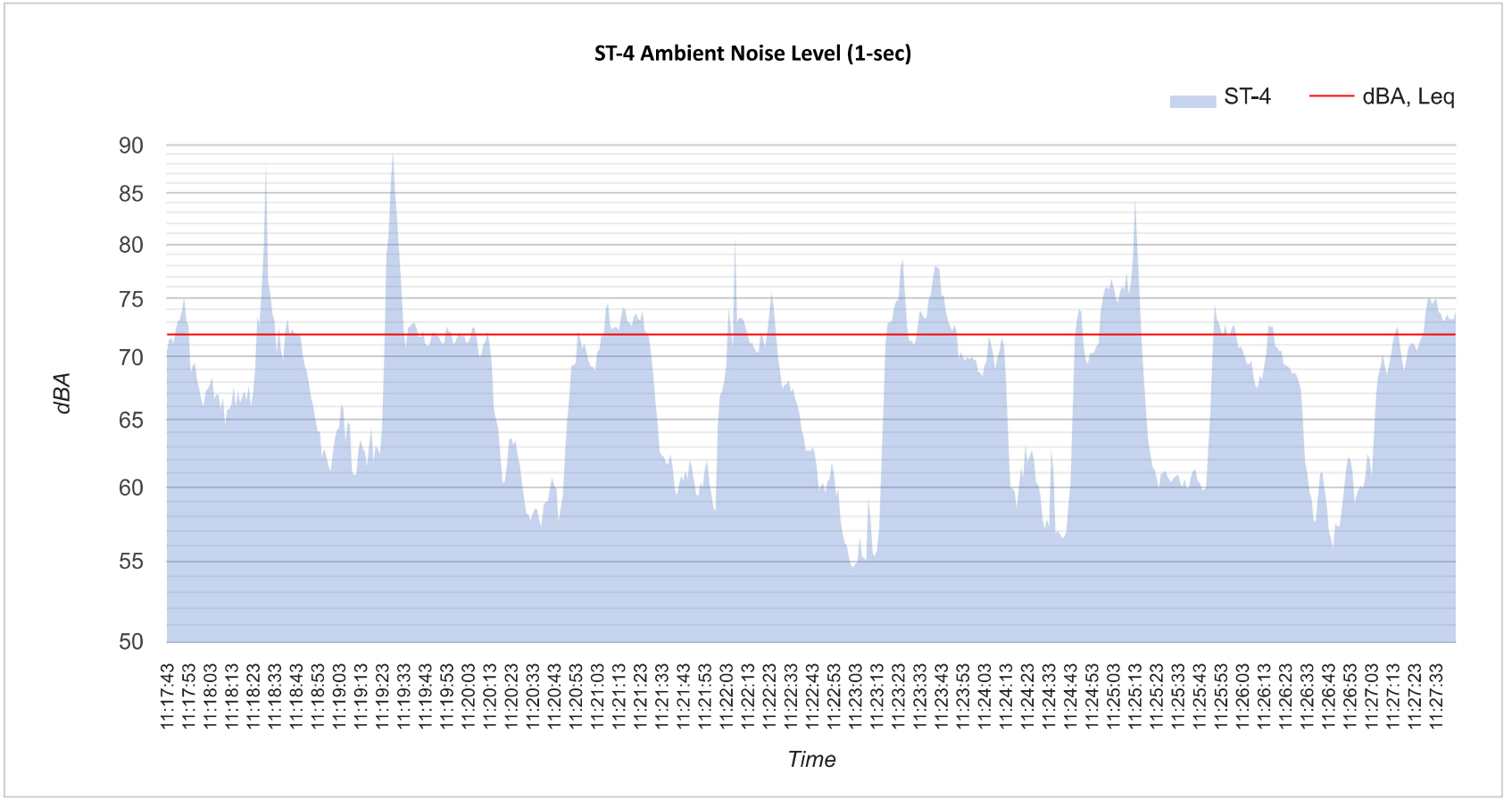


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-4	11:17 AM	11:27 AM	71.9	88.2	54.7	78.7	74.8	72.1	69	59.4

10-Minute Continuous Noise Measurement Datasheet - Cont.

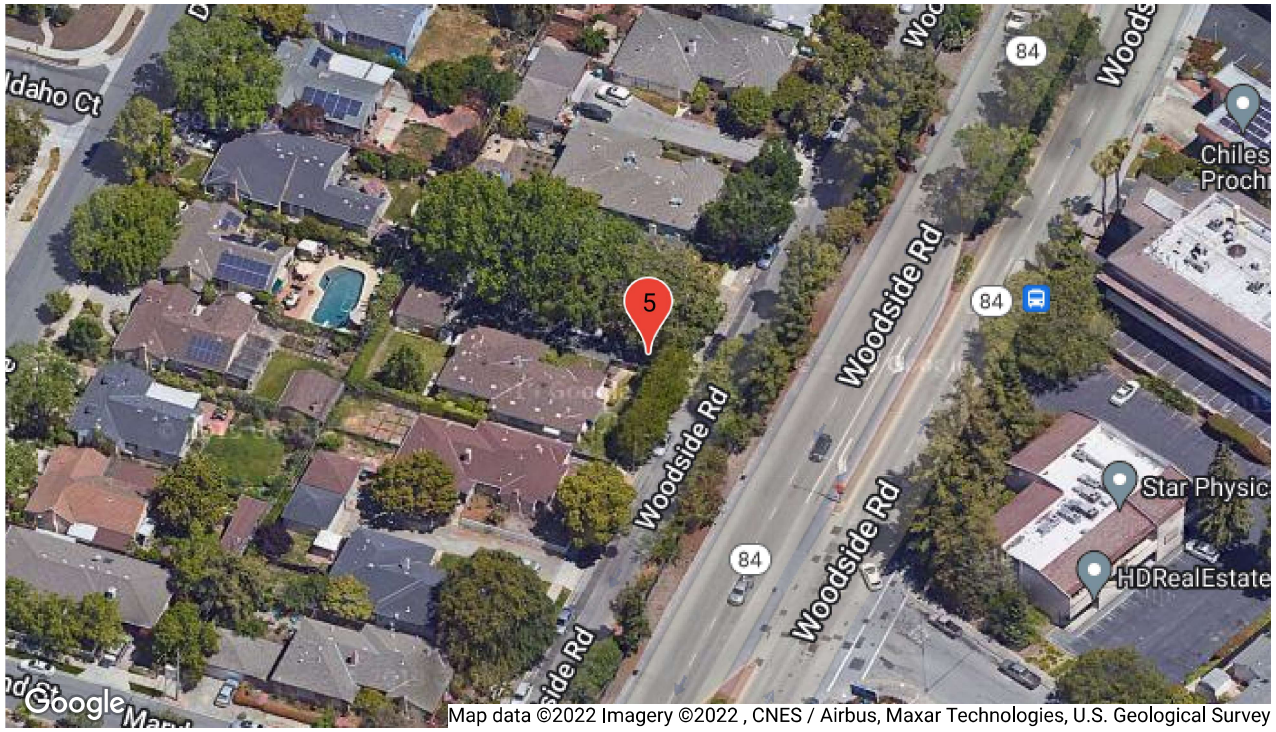
Project Name:	Redwood City EIR Noise	**Site Topo:**	Buildings 1 to 4 stories tall	**Noise Source(s) w/ Distance:**	
Site Address/Location:	875 Woodside Rd / 885 Woodside R	**Meteorological Cond.:**	72°, winds 5-10 mph, sunny and clear	Road Noise / 10 ft from Woodside Rd and Union Ave	
Site Id:	ST-4	**Ground Type:**	Buildings and Asphalt		



10-Minute Continuous Noise Measurement Datasheet

Project Name:	Redwood City EIR Noise	**Site Observations:**
Project: #/Name:	0314-2022-001	71°, wind 5-10 mph, sunny and clear, light traffic on Woodside and moderate but constant traffic on Hwy 84
Site Address/Location:	1750 & 1758 Woodside Rd	
Date:	07/22/2022	
Field Tech/Engineer:	Dennis Jordan / Claire Pincock	

Sound Meter:	XL2, NTI	**SN:**	A2A-05967-E0
Settings:	A-weighted, slow, 1-sec, 10-minute interval		
Site Id:	ST-5		



MD ACOUSTICS

10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Redwood City EIR Noise

Site Address/Location: 1750 & 1758 Woodside Rd

Site Id: ST-5

Figure 1: ST-5 on driveway between addresses 1750 and 1758 Woodside Rd.

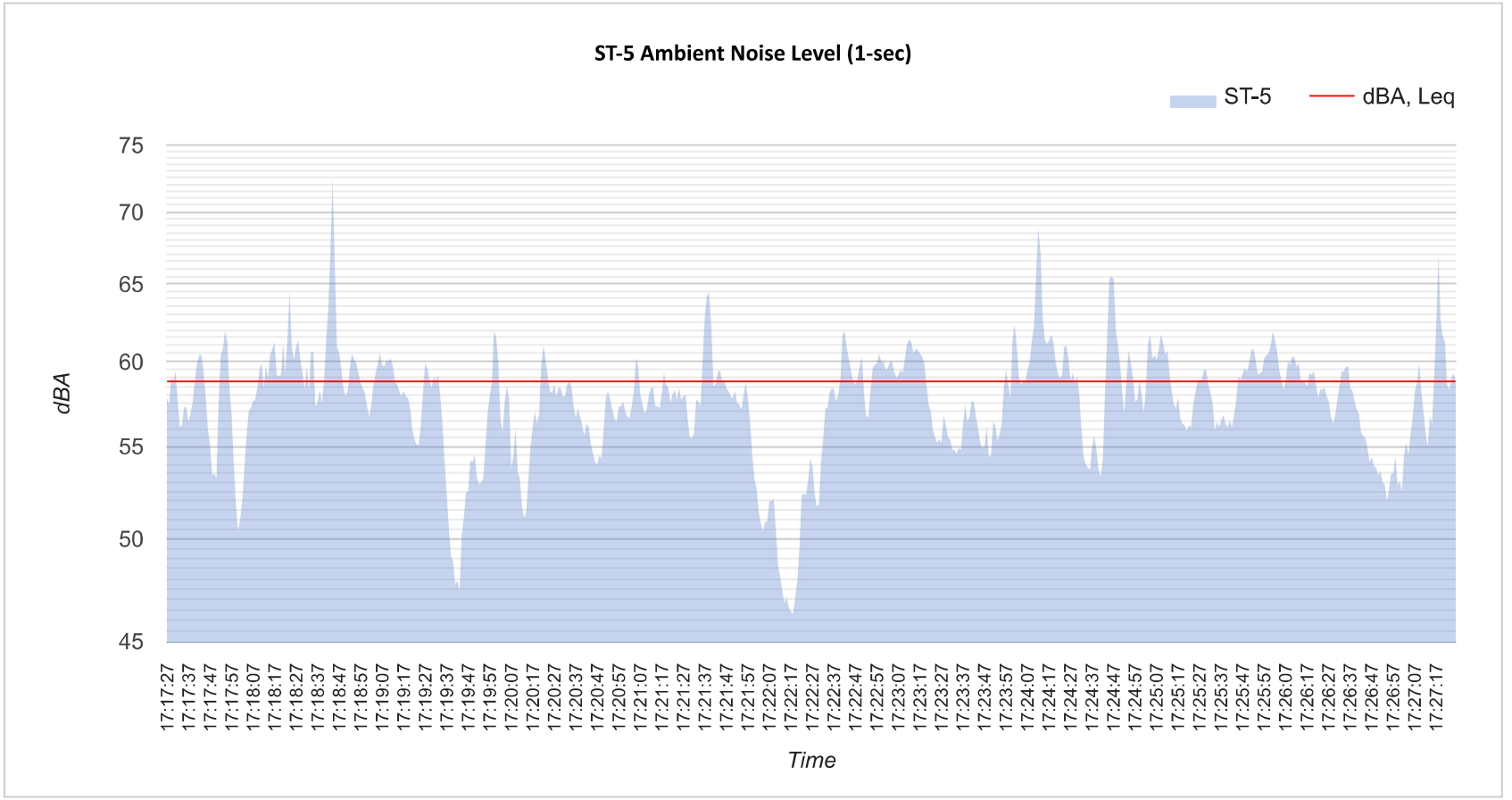


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-5	5:17 PM	5:27 PM	58.8	71.0	46.3	64.2	61.1	59.5	58	53.3

10-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Redwood City EIR Noise	**Site Topo:**	Housing single story	**Noise Source(s) w/ Distance:**	
Site Address/Location:	1750 & 1758 Woodside Rd	**Meteorological Cond.:**	80°, wind 10-15 mph, sunny and clear	Road Noise / 30ft from c/ of Woodside, 61ft from Hwy 84	
Site Id:	ST-5	**Ground Type:**	Buildings and Asphalt		



Redwood City EIR Noise
Emission calculation road - 001 - Outdoor SP

Road	ADT Veh/24h	
US Hwy 101 - Woodside Rd (SR-84) to Mars	236160	
US Hwy 101 - Whipple Ave to Woodside Rd	228900	
Veterans - Whipple Ave to Brewster	49200	
Veterans - Brewster to Jefferson	39370	
Veterans - Jefferson to Main	12530	
Veterans - Main St to Maple St	11200	
Veterans - Maple St to Chestnut St	9210	
Veterans - Chestnut St to Woodside Rd (S	9030	
Winslow St - Whipple Ave to Hopkins Ave	2540	
Winslow St - Hopkins Ave to Brewster Ave	220	
Winslow St - Brewster Ave to Arguello St	720	
El Camino Real - Whipple Ave to Hopkins	24720	
El Camino Real - Hopkins to Brewster	22240	
El Camino Real - Brewster to Broadway	21680	
El Camino Real - Broadway to James Ave	20030	
El Camino Real - James to Jefferson Ave	22540	
El Camino Real - Jefferson Ave to Maple	41310	
El Camino Real - Maple to Cedar	41920	
El Camino Real - Cedar to Roosevelt Ave	41960	
El Camino Real - Roosevelt Ave to Pine	42300	
El Camino Real - Pine to Main	45360	
El Camino Real - Main to Woodside Rd (SR	45370	
El Camino Real - Woodside Rd (SR-84) to	55610	
El Camino Real - Charter to Center	55590	
El Camino Real - Center to Northumberlan	50240	
El Camino Real - Northumberland to Oakwo	50240	
El Camino Real - Oakwood to Selby Ln	47700	
Middlefield Rd - Main St to Chestnut St	7310	
Middlefield Rd - Chestnut St to Woodside	7830	
Whipple Ave - Veterans Blvd to Industria	35610	
Whipple Ave - Lenolt to Arguello	27940	

Redwood City EIR Noise
Emission calculation road - 001 - Outdoor SP

Road	ADT Veh/24h	
Whipple Ave - Arguello to Stafford	22950	
Whipple Ave - Stafford to El Camino Real	27350	
Brewster Ave - Veterans Blvd to Arguello	830	
Broadway - El Camino Real to Perry	7100	
Broadway - Perry to Arguello St	8060	
Broadway - Arguello St to Winslow	8060	
Broadway - Winslow to Jefferson	1830	
Broadway - Jefferson to Main	7710	
Broadway - Main to Spring	10170	
Broadway - Spring to Maple St	8110	
Broadway - Maple St to Beech	9110	
Broadway - Beech to Chestnut St	11690	
Broadway - Chestnut St to Woodside Rd (S	13320	
Maple St - Veterans Blvd to Broadway	1050	
Maple St - Broadway to Middlefield Rd	1050	
Chestnut St - Veterans Blvd to Broadway	180	
Chestnut St - Broadway to Middlefield Rd	1880	
Chestnut St - Middlefield to Main St	140	
Main St - Veterans Blvd to Middlefield	5210	
Main St - Middlefield to El Camino Real	2770	
Woodside Rd (SR-84) - US Hwy 101 to Broa	27420	
Woodside Rd (SR-84) - Broadway to Bay Rd	50710	
Woodside Rd (SR-84) - Bay Rd to Spring S	50710	
Woodside Rd (SR-84) - Spring St to Middl	40420	
Woodside Rd (SR-84) - Middlefield Rd to	43020	
Woodside Rd (SR-84) - El Camino Real to	38140	
Woodside Rd (SR-84) - Hess to Hudson St	40510	
Woodside Rd (SR-84) - Hudson St to Gordo	40800	
Woodside Rd (SR-84) - Gordon/Orchard to	34700	
Woodside Rd (SR-84) - Kentfield to Massa	29270	

Redwood City EIR Noise
Emission calculation road - 001 - Outdoor SP

Road	ADT Veh/24h	
Woodside Rd (SR-84) - Massachusetts Ave	26510	
Woodside Rd (SR-84) - Sequoia to Alameda	23150	
Whipple Ave - Industrial to Lenolt	27990	
Redwood Shores Pkwy - Twin Dolphin Dr to	24325	
Redwood Shores Pkwy - Shoreline Dr to Tw	23432	
Redwood Shores Pkwy - Bridge Pkwy to Sho	12604	
Brewster Ave - Main St to Veterans Blvd	9658	

Redwood City EIR Noise
Emission calculation road - 002 - Outdoor SP

Road	ADT Veh/24h	
US Hwy 101 - Woodside Rd (SR-84) to Mars	263574	
US Hwy 101 - Whipple Ave to Woodside Rd	263138	
Veterans - Whipple Ave to Brewster	46639	
Veterans - Brewster to Jefferson	38563	
Veterans - Jefferson to Main	19338	
Veterans - Main St to Maple St	24585	
Veterans - Maple St to Chestnut St	25035	
Veterans - Chestnut St to Woodside Rd (S	24505	
Winslow St - Whipple Ave to Hopkins Ave	1746	
Winslow St - Hopkins Ave to Brewster Ave	1547	
Winslow St - Brewster Ave to Arguello St	1062	
El Camino Real - Whipple Ave to Hopkins	41024	
El Camino Real - Hopkins to Brewster	28266	
El Camino Real - Brewster to Broadway	25114	
El Camino Real - Broadway to James Ave	22093	
El Camino Real - James to Jefferson Ave	23452	
El Camino Real - Jefferson Ave to Maple	51835	
El Camino Real - Maple to Cedar	53550	
El Camino Real - Cedar to Roosevelt Ave	53545	
El Camino Real - Roosevelt Ave to Pine	54291	
El Camino Real - Pine to Main	52713	
El Camino Real - Main to Woodside Rd (SR	55879	
El Camino Real - Woodside Rd (SR-84) to	72120	
El Camino Real - Charter to Center	72169	
El Camino Real - Center to Northumberlan	66515	
El Camino Real - Northumberland to Oakwo	66153	
El Camino Real - Oakwood to Selby Ln	63084	
Middlefield Rd - Main St to Chestnut St	11932	
Middlefield Rd - Chestnut St to Woodside	12986	
Whipple Ave - Veterans Blvd to Industria	38167	
Whipple Ave - Lenolt to Arguello	32856	

Redwood City EIR Noise
Emission calculation road - 002 - Outdoor SP

Road	ADT Veh/24h	
Whipple Ave - Arguello to Stafford	34215	
Whipple Ave - Stafford to El Camino Real	35970	
Brewster Ave - Veterans Blvd to Arguello	826	
Broadway - El Camino Real to Perry	13046	
Broadway - Perry to Arguello St	13048	
Broadway - Arguello St to Winslow	12275	
Broadway - Winslow to Jefferson	3085	
Broadway - Jefferson to Main	15629	
Broadway - Main to Spring	18749	
Broadway - Spring to Maple St	15423	
Broadway - Maple St to Beech	15706	
Broadway - Beech to Chestnut St	19547	
Broadway - Chestnut St to Woodside Rd (S	21330	
Maple St - Veterans Blvd to Broadway	703	
Maple St - Broadway to Middlefield Rd	64	
Chestnut St - Veterans Blvd to Broadway	572	
Chestnut St - Broadway to Middlefield Rd	2366	
Chestnut St - Middlefield to Main St	305	
Main St - Veterans Blvd to Middlefield	9398	
Main St - Middlefield to El Camino Real	3283	
Woodside Rd (SR-84) - US Hwy 101 to Broa	43616	
Woodside Rd (SR-84) - Broadway to Bay Rd	61236	
Woodside Rd (SR-84) - Bay Rd to Spring S	59778	
Woodside Rd (SR-84) - Spring St to Middl	49802	
Woodside Rd (SR-84) - Middlefield Rd to	52552	
Woodside Rd (SR-84) - El Camino Real to	41231	
Woodside Rd (SR-84) - Hess to Hudson St	44378	
Woodside Rd (SR-84) - Hudson St to Gordo	44633	
Woodside Rd (SR-84) - Gordon/Orchard to	38584	
Woodside Rd (SR-84) - Kentfield to Massa	41099	

Road	ADT Veh/24h	
Woodside Rd (SR-84) - Massachusetts Ave	35999	
Woodside Rd (SR-84) - Sequoia to Alameda	28335	
Whipple Ave - Industrial to Lenolt	36084	
Redwood Shores Pkwy - Twin Dolphin Dr to	32606	
Redwood Shores Pkwy - Shoreline Dr to Tw	31210	
Redwood Shores Pkwy - Bridge Pkwy to Sho	13499	
Brewster Ave - Main St to Veterans Blvd	8696	

Redwood City EIR Noise
Emission calculation road - 003 - Outdoor SP

Road	ADT Veh/24h	
US Hwy 101 - Woodside Rd (SR-84) to Mars	265982	
US Hwy 101 - Whipple Ave to Woodside Rd	266750	
Veterans - Whipple Ave to Brewster	51902	
Veterans - Brewster to Jefferson	37470	
Veterans - Jefferson to Main	25663	
Veterans - Main St to Maple St	30054	
Veterans - Maple St to Chestnut St	29631	
Veterans - Chestnut St to Woodside Rd (S	28792	
Winslow St - Whipple Ave to Hopkins Ave	2276	
Winslow St - Hopkins Ave to Brewster Ave	2693	
Winslow St - Brewster Ave to Arguello St	1815	
El Camino Real - Whipple Ave to Hopkins	44145	
El Camino Real - Hopkins to Brewster	29725	
El Camino Real - Brewster to Broadway	26592	
El Camino Real - Broadway to James Ave	22847	
El Camino Real - James to Jefferson Ave	24190	
El Camino Real - Jefferson Ave to Maple	54202	
El Camino Real - Maple to Cedar	56691	
El Camino Real - Cedar to Roosevelt Ave	56691	
El Camino Real - Roosevelt Ave to Pine	57483	
El Camino Real - Pine to Main	54602	
El Camino Real - Main to Woodside Rd (SR	59390	
El Camino Real - Woodside Rd (SR-84) to	74693	
El Camino Real - Charter to Center	74756	
El Camino Real - Center to Northumberlan	68611	
El Camino Real - Northumberland to Oakwo	68611	
El Camino Real - Oakwood to Selby Ln	65188	
Middlefield Rd - Main St to Chestnut St	13382	
Middlefield Rd - Chestnut St to Woodside	14355	
Whipple Ave - Veterans Blvd to Industria	40159	
Whipple Ave - Lenolt to Arguello	38749	

Redwood City EIR Noise
Emission calculation road - 003 - Outdoor SP

Road	ADT Veh/24h	
Whipple Ave - Arguello to Stafford	35298	
Whipple Ave - Stafford to El Camino Real	36745	
Brewster Ave - Veterans Blvd to Arguello	1671	
Broadway - El Camino Real to Perry	14048	
Broadway - Perry to Arguello St	14069	
Broadway - Arguello St to Winslow	13250	
Broadway - Winslow to Jefferson	3253	
Broadway - Jefferson to Main	16884	
Broadway - Main to Spring	20047	
Broadway - Spring to Maple St	17063	
Broadway - Maple St to Beech	17162	
Broadway - Beech to Chestnut St	21305	
Broadway - Chestnut St to Woodside Rd (S	22386	
Maple St - Veterans Blvd to Broadway	859	
Maple St - Broadway to Middlefield Rd	95	
Chestnut St - Veterans Blvd to Broadway	910	
Chestnut St - Broadway to Middlefield Rd	2241	
Chestnut St - Middlefield to Main St	416	
Main St - Veterans Blvd to Middlefield	10398	
Main St - Middlefield to El Camino Real	3616	
Woodside Rd (SR-84) - US Hwy 101 to Broa	46737	
Woodside Rd (SR-84) - Broadway to Bay Rd	63397	
Woodside Rd (SR-84) - Bay Rd to Spring S	61397	
Woodside Rd (SR-84) - Spring St to Middl	51654	
Woodside Rd (SR-84) - Middlefield Rd to	54606	
Woodside Rd (SR-84) - El Camino Real to	43504	
Woodside Rd (SR-84) - Hess to Hudson St	46944	
Woodside Rd (SR-84) - Hudson St to Gordo	47156	
Woodside Rd (SR-84) - Gordon/Orchard to	40949	
Woodside Rd (SR-84) - Kentfield to Massa	43679	

Road	ADT Veh/24h	
Woodside Rd (SR-84) - Massachusetts Ave	37731	
Woodside Rd (SR-84) - Sequoia to Alameda	29857	
Whipple Ave - Industrial to Lenolt	38749	
Redwood Shores Pkwy - Twin Dolphin Dr to	33460	
Redwood Shores Pkwy - Shoreline Dr to Tw	32007	
Redwood Shores Pkwy - Bridge Pkwy to Sho	14341	
Brewster Ave - Main St to Veterans Blvd	15590	

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Middlefield Rd to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	43,015
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,302

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.3	69.4	67.6	61.6	70.2	70.8
MEDIUM TRUCKS	63.8	62.3	56.0	54.4	62.9	63.1
HEAVY TRUCKS	66.6	65.2	56.2	57.4	65.8	65.9
VEHICULAR NOISE	73.1	71.4	68.2	63.5	72.1	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	90	283	896	2832
LDN	81	255	807	2551

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Bridge Pkwy to Shoreline Dr
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,604
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,260

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.0	62.1	60.4	54.3	62.9	63.5
MEDIUM TRUCKS	49.5	47.9	41.6	40.0	48.5	48.7
HEAVY TRUCKS	55.8	54.4	45.3	46.6	55.0	55.1
VEHICULAR NOISE	64.8	62.9	60.5	55.1	63.7	**64.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	42	132	419
LDN	12	37	117	370

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Bay Rd to Spring St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	50,709
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	64
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,071

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	38.5	- -
MEDIUM TRUCKS=	4.00	38.4	- -
HEAVY TRUCKS =	8.01	38.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.3	70.4	68.7	62.6	71.2	71.9
MEDIUM TRUCKS	64.9	63.4	57.1	55.5	64.0	64.2
HEAVY TRUCKS	67.7	66.3	57.2	58.5	66.8	67.0
VEHICULAR NOISE	74.2	72.4	69.3	64.6	73.2	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	115	363	1147	3627
LDN	103	327	1033	3268

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Shoreline Dr to Twin Dolphin Dr
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,432
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	82
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,343

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	28.8	- -
MEDIUM TRUCKS=	4.00	28.6	- -
HEAVY TRUCKS =	8.01	28.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.4	66.5	64.8	58.7	67.3	67.9
MEDIUM TRUCKS	53.9	52.4	46.0	44.5	52.9	53.2
HEAVY TRUCKS	60.2	58.8	49.8	51.0	59.4	59.5
VEHICULAR NOISE	69.2	67.4	65.0	59.5	68.1	**68.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	37	116	366	1158
LDN	32	102	324	1024

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Twin Dolphin Dr to US Hwy 101 Ramps (Shoreway Rd)
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,325
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,432

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.6	67.7	65.9	59.9	68.5	69.1
MEDIUM TRUCKS	54.1	52.6	46.3	44.7	53.2	53.4
HEAVY TRUCKS	60.1	58.6	49.6	50.8	59.2	59.3
VEHICULAR NOISE	70.1	68.3	66.1	60.5	69.1	**69.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	46	145	458	1450
LDN	40	128	404	1277

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY US Hwy 101
SEGMENT Whipple Ave to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	236,162
SPEED =	60
PK HR % =	10
NEAR LANE/FAR LANE DIST =	100
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	23,616

RECEIVER INPUT DATA

RECEIVER DISTANCE =		100
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		100
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.955
MEDIUM TRUCKS	0.848	0.049	0.103	0.026
HEAVY TRUCKS	0.865	0.027	0.108	0.019

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	86.7	- -
MEDIUM TRUCKS=	4.00	86.6	- -
HEAVY TRUCKS =	8.01	86.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	82.2	80.3	78.5	72.5	81.1	81.7
MEDIUM TRUCKS	73.2	71.7	65.3	63.8	72.2	72.5
HEAVY TRUCKS	75.5	74.1	65.0	66.3	74.6	74.8
VEHICULAR NOISE	83.5	81.7	78.9	73.8	82.4	**82.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	1951	6169	19509	61693
LDN	1741	5506	17411	55058

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY US Hwy 101
SEGMENT Woodside Rd (SR-84) to Marsh Rd
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	228,896
SPEED =	60
PK HR % =	10
NEAR LANE/FAR LANE DIST =	100
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	22,890

RECEIVER INPUT DATA

RECEIVER DISTANCE =		100
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		100
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	8	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.955
MEDIUM TRUCKS	0.848	0.049	0.103	0.026
HEAVY TRUCKS	0.865	0.027	0.108	0.019

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	86.7	- -
MEDIUM TRUCKS=	4.00	86.6	- -
HEAVY TRUCKS =	8.01	86.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	82.0	80.1	78.4	72.3	80.9	81.6
MEDIUM TRUCKS	73.0	71.5	65.2	63.6	72.1	72.3
HEAVY TRUCKS	75.4	73.9	64.9	66.1	74.5	74.6
VEHICULAR NOISE	83.3	81.5	78.8	73.7	82.3	**82.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1891	5979	18909	59795
LDN	1688	5336	16875	53364

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Whipple Ave to Brewster
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	49,200
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,920

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.3	66.4	64.6	58.5	67.2	67.8
MEDIUM TRUCKS	54.7	53.2	46.9	45.3	53.8	54.0
HEAVY TRUCKS	61.6	60.2	51.1	52.4	60.7	60.9
VEHICULAR NOISE	69.3	67.5	64.9	59.6	68.2	**68.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	37	118	373	1178
LDN	33	105	331	1048

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Brewster to Jefferson
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	39,368
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,937

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.3	65.4	63.6	57.6	66.2	66.8
MEDIUM TRUCKS	53.8	52.3	45.9	44.4	52.8	53.1
HEAVY TRUCKS	60.6	59.2	50.2	51.4	59.8	59.9
VEHICULAR NOISE	68.3	66.5	63.9	58.7	67.2	**67.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	30	94	298	943
LDN	27	84	265	838

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Jefferson to Main
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,527
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,253

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.3	60.4	58.7	52.6	61.2	61.8
MEDIUM TRUCKS	48.8	47.3	40.9	39.4	47.9	48.1
HEAVY TRUCKS	55.7	54.2	45.2	46.4	54.8	54.9
VEHICULAR NOISE	63.3	61.5	58.9	53.7	62.3	**62.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	9	30	95	300
LDN	8	27	84	267

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Main St to Maple St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,196
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	56
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,120

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.5	- -
MEDIUM TRUCKS=	4.00	41.4	- -
HEAVY TRUCKS =	8.01	41.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.4	59.5	57.7	51.6	60.3	60.9
MEDIUM TRUCKS	47.8	46.3	40.0	38.4	46.9	47.1
HEAVY TRUCKS	54.7	53.3	44.2	45.5	53.8	54.0
VEHICULAR NOISE	62.4	60.6	58.0	52.7	61.3	**61.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	24	76	240
LDN	7	21	68	214

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Maple St to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	9,208
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	57
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	921

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.2	- -
MEDIUM TRUCKS=	4.00	41.1	- -
HEAVY TRUCKS =	8.01	41.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.5	58.6	56.9	50.8	59.4	60.0
MEDIUM TRUCKS	47.0	45.5	39.2	37.6	46.1	46.3
HEAVY TRUCKS	53.9	52.5	43.4	44.7	53.0	53.2
VEHICULAR NOISE	61.5	59.7	57.1	51.9	60.5	**61.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	6	20	63	199
LDN	6	18	56	177

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	9,031
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	28
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	903

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.1	- -
MEDIUM TRUCKS=	4.00	48.0	- -
HEAVY TRUCKS =	8.01	48.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.8	57.9	56.1	50.1	58.7	59.3
MEDIUM TRUCKS	46.3	44.8	38.4	36.9	45.3	45.5
HEAVY TRUCKS	53.1	51.7	42.7	43.9	52.3	52.4
VEHICULAR NOISE	60.8	59.0	56.4	51.2	59.7	**60.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	17	53	167
LDN	5	15	47	149

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Whipple Ave to Hopkins Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,535
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	254

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.2	52.3	50.6	44.5	53.1	53.7
MEDIUM TRUCKS	40.7	39.2	32.8	31.3	39.8	40.0
HEAVY TRUCKS	47.6	46.1	37.1	38.4	46.7	46.8
VEHICULAR NOISE	55.2	53.4	50.8	45.6	54.2	**54.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	5	15	47
LDN	1	4	13	41

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Hopkins Ave to Brewster Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	217
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	22

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	43.6	41.7	39.9	33.8	42.5	43.1
MEDIUM TRUCKS	30.0	28.5	22.2	20.6	29.1	29.3
HEAVY TRUCKS	36.9	35.5	26.4	27.7	36.1	36.2
VEHICULAR NOISE	44.6	42.8	40.2	35.0	43.5	**44.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	4
LDN	0	0	1	4

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Brewster Ave to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	717
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	72

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	48.7	46.8	45.0	39.0	47.6	48.2
MEDIUM TRUCKS	35.2	33.7	27.3	25.8	34.2	34.5
HEAVY TRUCKS	42.0	40.6	31.6	32.8	41.2	41.3
VEHICULAR NOISE	49.7	47.9	45.3	40.1	48.6	**49.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	13
LDN	0	1	4	12

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Whipple Ave to Hopkins Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,717
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,472

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.7	66.8	65.0	59.0	67.6	68.2
MEDIUM TRUCKS	61.3	59.8	53.4	51.9	60.3	60.6
HEAVY TRUCKS	64.1	62.6	53.6	54.9	63.2	63.3
VEHICULAR NOISE	70.5	68.8	65.6	61.0	69.5	**70.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	50	157	496	1570
LDN	45	141	447	1414

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Hopkins to Brewster
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,235
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,224

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.3	66.4	64.6	58.5	67.2	67.8
MEDIUM TRUCKS	60.8	59.3	53.0	51.4	59.9	60.1
HEAVY TRUCKS	63.6	62.2	53.1	54.4	62.7	62.9
VEHICULAR NOISE	70.1	68.3	65.2	60.5	69.1	**69.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	45	141	447	1412
LDN	40	127	402	1272

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Brewster to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	21,677
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,168

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.3	66.4	64.6	58.5	67.2	67.8
MEDIUM TRUCKS	60.8	59.3	53.0	51.4	59.9	60.1
HEAVY TRUCKS	63.6	62.2	53.2	54.4	62.8	62.9
VEHICULAR NOISE	70.1	68.4	65.2	60.5	69.1	**69.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	45	142	448	1416
LDN	40	128	403	1276

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Broadway to James Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	20,026
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	60
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,003

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	40.1	- -
MEDIUM TRUCKS=	4.00	40.0	- -
HEAVY TRUCKS =	8.01	40.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.1	66.2	64.5	58.4	67.0	67.6
MEDIUM TRUCKS	60.7	59.2	52.8	51.3	59.8	60.0
HEAVY TRUCKS	63.5	62.1	53.0	54.3	62.6	62.8
VEHICULAR NOISE	70.0	68.2	65.0	60.4	68.9	**69.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	44	138	435	1376
LDN	39	124	392	1240

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT James to Jefferson Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,543
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,254

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.2	62.3	60.5	54.4	63.1	63.7
MEDIUM TRUCKS	58.7	57.2	50.8	49.3	57.7	57.9
HEAVY TRUCKS	62.4	61.0	51.9	53.2	61.5	61.6
VEHICULAR NOISE	67.1	65.4	61.5	57.6	66.1	**66.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	22	70	221	698
LDN	20	64	202	638

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Jefferson Ave to Maple
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,313
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,131

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.9	69.0	67.3	61.2	69.8	70.4
MEDIUM TRUCKS	63.5	62.0	55.6	54.1	62.6	62.8
HEAVY TRUCKS	66.3	64.9	55.8	57.1	65.4	65.6
VEHICULAR NOISE	72.8	71.0	67.8	63.2	71.7	**72.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	83	262	830	2624
LDN	75	236	747	2363

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Maple to Cedar
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,923
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,192

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.1	69.2	67.4	61.3	70.0	70.6
MEDIUM TRUCKS	63.6	62.1	55.8	54.2	62.7	62.9
HEAVY TRUCKS	66.4	65.0	56.0	57.2	65.6	65.7
VEHICULAR NOISE	72.9	71.2	68.0	63.3	71.9	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	85	270	854	2699
LDN	77	243	769	2431

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Cedar to Roosevelt Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,963
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,196

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.0	69.1	67.3	61.3	69.9	70.5
MEDIUM TRUCKS	63.6	62.1	55.7	54.2	62.6	62.9
HEAVY TRUCKS	66.4	64.9	55.9	57.2	65.5	65.6
VEHICULAR NOISE	72.8	71.1	67.9	63.3	71.8	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	84	266	843	2665
LDN	76	240	759	2400

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Roosevelt Ave to Pine
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	42,303
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,230

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.0	69.1	67.4	61.3	69.9	70.6
MEDIUM TRUCKS	63.6	62.1	55.7	54.2	62.7	62.9
HEAVY TRUCKS	66.4	65.0	55.9	57.2	65.5	65.7
VEHICULAR NOISE	72.9	71.1	67.9	63.3	71.8	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	85	269	850	2686
LDN	77	242	765	2420

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Pine to Main
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	45,362
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	56
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,536

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.5	- -
MEDIUM TRUCKS=	4.00	41.4	- -
HEAVY TRUCKS =	8.01	41.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.5	69.6	67.9	61.8	70.4	71.0
MEDIUM TRUCKS	64.1	62.6	56.2	54.7	63.2	63.4
HEAVY TRUCKS	66.9	65.5	56.4	57.7	66.0	66.2
VEHICULAR NOISE	73.4	71.6	68.4	63.8	72.3	**72.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	95	301	952	3011
LDN	86	271	858	2712

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Main to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	45,371
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,537

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.2	69.3	67.5	61.5	70.1	70.7
MEDIUM TRUCKS	63.8	62.3	55.9	54.4	62.8	63.1
HEAVY TRUCKS	66.6	65.1	56.1	57.4	65.7	65.8
VEHICULAR NOISE	73.0	71.3	68.1	63.5	72.0	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	88	279	884	2794
LDN	80	252	796	2517

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Woodside Rd (SR-84) to Charter
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	55,614
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,561

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.1	71.2	69.4	63.3	72.0	72.6
MEDIUM TRUCKS	65.6	64.1	57.8	56.2	64.7	64.9
HEAVY TRUCKS	68.4	67.0	58.0	59.2	67.6	67.7
VEHICULAR NOISE	74.9	73.2	70.0	65.3	73.9	**74.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	135	428	1353	4278
LDN	122	385	1219	3854

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Charter to Center
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	55,590
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,559

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.1	71.2	69.4	63.3	72.0	72.6
MEDIUM TRUCKS	65.6	64.1	57.8	56.2	64.7	64.9
HEAVY TRUCKS	68.4	67.0	58.0	59.2	67.6	67.7
VEHICULAR NOISE	74.9	73.2	70.0	65.3	73.9	**74.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	135	428	1352	4277
LDN	122	385	1218	3852

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Center to Northumberland
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	50,242
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,024

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.6	70.7	69.0	62.9	71.5	72.1
MEDIUM TRUCKS	65.2	63.7	57.3	55.8	64.2	64.5
HEAVY TRUCKS	68.0	66.6	57.5	58.8	67.1	67.2
VEHICULAR NOISE	74.5	72.7	69.5	64.9	73.4	**73.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	122	387	1222	3865
LDN	110	348	1101	3482

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Northumberland to Oakwood
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	50,242
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	57
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,024

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.2	- -
MEDIUM TRUCKS=	4.00	41.1	- -
HEAVY TRUCKS =	8.01	41.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.0	70.1	68.4	62.3	70.9	71.5
MEDIUM TRUCKS	64.6	63.1	56.7	55.2	63.6	63.9
HEAVY TRUCKS	67.4	65.9	56.9	58.2	66.5	66.6
VEHICULAR NOISE	73.8	72.1	68.9	64.3	72.8	**73.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	106	336	1063	3362
LDN	96	303	958	3029

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Oakwood to Selby Ln
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	47,698
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	65
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,770

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	38.1	- -
MEDIUM TRUCKS=	4.00	38.0	- -
HEAVY TRUCKS =	8.01	38.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.6
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.8	64.0
HEAVY TRUCKS	67.5	66.1	57.0	58.3	66.6	66.8
VEHICULAR NOISE	74.0	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	345	1091	3450
LDN	98	311	983	3107

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Middlefield Rd
SEGMENT Main St to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	7,315
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	731

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.8	56.9	55.1	49.1	57.7	58.3
MEDIUM TRUCKS	45.3	43.8	37.4	35.8	44.3	44.5
HEAVY TRUCKS	52.1	50.7	41.7	42.9	51.3	51.4
VEHICULAR NOISE	59.8	58.0	55.4	50.2	58.7	**59.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	4	13	42	133
LDN	4	12	37	118

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Middlefield Rd
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	7,831
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	783

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.1	57.2	55.4	49.4	58.0	58.6
MEDIUM TRUCKS	45.6	44.1	37.7	36.1	44.6	44.8
HEAVY TRUCKS	52.4	51.0	42.0	43.2	51.6	51.7
VEHICULAR NOISE	60.1	58.3	55.7	50.5	59.0	**59.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	4	14	45	142
LDN	4	13	40	127

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Veterans Blvd to Industrial Way
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	35,615
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,561

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.3	64.4	62.6	56.6	65.2	65.8
MEDIUM TRUCKS	52.8	51.3	44.9	43.4	51.8	52.1
HEAVY TRUCKS	59.7	58.2	49.2	50.4	58.8	58.9
VEHICULAR NOISE	67.3	65.5	62.9	57.7	66.3	**66.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	24	75	238	753
LDN	21	67	212	669

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Industrial to Lenolt
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,993
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	29
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,799

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.9	- -
MEDIUM TRUCKS=	4.00	47.9	- -
HEAVY TRUCKS =	8.01	47.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.7	62.8	61.0	55.0	63.6	64.2
MEDIUM TRUCKS	51.2	49.7	43.3	41.8	50.2	50.5
HEAVY TRUCKS	58.1	56.6	47.6	48.8	57.2	57.3
VEHICULAR NOISE	65.7	63.9	61.3	56.1	64.7	**65.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	16	52	165	521
LDN	15	46	146	463

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Lenolt to Arguello
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,944
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,294

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.9	62.0	60.2	54.1	62.8	63.4
MEDIUM TRUCKS	50.3	48.8	42.5	40.9	49.4	49.6
HEAVY TRUCKS	57.2	55.8	46.7	48.0	56.3	56.5
VEHICULAR NOISE	64.9	63.1	60.5	55.2	63.8	**64.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	14	43	135	428
LDN	12	38	120	381

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Arguello to Stafford
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,945
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,295

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.3	62.4	60.6	54.6	63.2	63.8
MEDIUM TRUCKS	50.8	49.3	42.9	41.3	49.8	50.0
HEAVY TRUCKS	57.6	56.2	47.2	48.4	56.8	56.9
VEHICULAR NOISE	65.3	63.5	60.9	55.7	64.2	**64.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	15	47	149	471
LDN	13	42	133	419

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Stafford to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,347
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,735

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.9	64.0	62.2	56.2	64.8	65.4
MEDIUM TRUCKS	52.4	50.9	44.5	42.9	51.4	51.6
HEAVY TRUCKS	59.2	57.8	48.8	50.0	58.4	58.5
VEHICULAR NOISE	66.9	65.1	62.5	57.3	65.8	**66.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	22	68	215	681
LDN	19	61	191	605

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Brewster Ave
SEGMENT Main St to Veterans Blvd
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	
SPEED =	
PK HR % =	10
NEAR LANE/FAR LANE DIST =	
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	0

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	50.1	- -
MEDIUM TRUCKS=	4.00	50.0	- -
HEAVY TRUCKS =	8.01	50.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
MEDIUM TRUCKS	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
HEAVY TRUCKS	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
VEHICULAR NOISE	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	**#NUM!**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	#NUM!	#NUM!	#NUM!	#NUM!
LDN	#NUM!	#NUM!	#NUM!	#NUM!

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Brewster Ave
SEGMENT Veterans Blvd to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	827
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	22
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	83

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.9	- -
MEDIUM TRUCKS=	4.00	48.8	- -
HEAVY TRUCKS =	8.01	48.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	51.6	49.7	47.9	41.9	50.5	51.1
MEDIUM TRUCKS	37.0	35.5	29.2	27.6	36.1	36.3
HEAVY TRUCKS	43.4	42.0	32.9	34.2	42.5	42.7
VEHICULAR NOISE	52.4	50.5	48.1	42.7	51.3	**51.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	2	8	24
LDN	1	2	7	21

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT El Camino Real to Perry
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	7,096
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	11
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	710

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.8	- -
MEDIUM TRUCKS=	4.00	49.7	- -
HEAVY TRUCKS =	8.01	49.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.6	56.7	54.9	48.9	57.5	58.1
MEDIUM TRUCKS	45.1	43.6	37.2	35.7	44.1	44.3
HEAVY TRUCKS	51.9	50.5	41.5	42.7	51.1	51.2
VEHICULAR NOISE	59.6	57.8	55.2	50.0	58.5	**59.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	4	13	40	127
LDN	4	11	36	113

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Perry to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	8,061
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	23
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	806

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.8	- -
MEDIUM TRUCKS=	4.00	48.7	- -
HEAVY TRUCKS =	8.01	48.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.2	57.3	55.6	49.5	58.1	58.7
MEDIUM TRUCKS	45.7	44.2	37.8	36.3	44.8	45.0
HEAVY TRUCKS	52.6	51.2	42.1	43.4	51.7	51.8
VEHICULAR NOISE	60.2	58.4	55.8	50.6	59.2	**59.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	15	47	147
LDN	4	13	41	131

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Arguello St to Winslow
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	8,061
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	806

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.2	57.3	55.5	49.5	58.1	58.7
MEDIUM TRUCKS	45.7	44.2	37.8	36.3	44.7	45.0
HEAVY TRUCKS	52.5	51.1	42.1	43.3	51.7	51.8
VEHICULAR NOISE	60.2	58.4	55.8	50.6	59.2	**59.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	15	46	146
LDN	4	13	41	130

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Winslow to Jefferson
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,825
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	183

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.8	50.9	49.1	43.0	51.7	52.3
MEDIUM TRUCKS	39.2	37.7	31.4	29.8	38.3	38.5
HEAVY TRUCKS	46.1	44.7	35.6	36.9	45.2	45.4
VEHICULAR NOISE	53.8	52.0	49.3	44.1	52.7	**53.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	3	10	33
LDN	1	3	9	29

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Jefferson to Main
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	7,712
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	771

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.0	57.1	55.3	49.2	57.9	58.5
MEDIUM TRUCKS	45.4	43.9	37.6	36.0	44.5	44.7
HEAVY TRUCKS	52.3	50.9	41.8	43.1	51.4	51.6
VEHICULAR NOISE	60.0	58.2	55.5	50.3	58.9	**59.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	4	14	44	138
LDN	4	12	39	123

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Main to Spring
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	10,171
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,017

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.2	58.3	56.5	50.4	59.1	59.7
MEDIUM TRUCKS	46.6	45.1	38.8	37.2	45.7	45.9
HEAVY TRUCKS	53.5	52.1	43.0	44.3	52.6	52.8
VEHICULAR NOISE	61.2	59.4	56.8	51.5	60.1	**60.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	6	18	58	182
LDN	5	16	51	162

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Spring to Maple St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	8,114
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	811

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.6	57.7	56.0	49.9	58.5	59.1
MEDIUM TRUCKS	46.1	44.6	38.2	36.7	45.2	45.4
HEAVY TRUCKS	53.0	51.6	42.5	43.8	52.1	52.2
VEHICULAR NOISE	60.6	58.8	56.2	51.0	59.6	**60.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	16	51	162
LDN	5	14	45	144

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Maple St to Beech
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	9,111
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	911

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.8	58.0	56.2	50.1	58.8	59.4
MEDIUM TRUCKS	46.3	44.8	38.5	36.9	45.4	45.6
HEAVY TRUCKS	53.2	51.8	42.7	44.0	52.3	52.5
VEHICULAR NOISE	60.9	59.1	56.4	51.2	59.8	**60.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	17	54	170
LDN	5	15	48	151

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Beech to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,692
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,169

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.9	59.0	57.3	51.2	59.8	60.4
MEDIUM TRUCKS	47.4	45.9	39.5	38.0	46.5	46.7
HEAVY TRUCKS	54.3	52.9	43.8	45.1	53.4	53.5
VEHICULAR NOISE	61.9	60.1	57.5	52.3	60.9	**61.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	22	69	218
LDN	6	19	61	194

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,320
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	22
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,332

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.9	- -
MEDIUM TRUCKS=	4.00	48.8	- -
HEAVY TRUCKS =	8.01	48.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.4	59.5	57.7	51.7	60.3	60.9
MEDIUM TRUCKS	47.9	46.4	40.0	38.5	46.9	47.2
HEAVY TRUCKS	54.7	53.3	44.3	45.5	53.9	54.0
VEHICULAR NOISE	62.4	60.6	58.0	52.8	61.4	**61.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	24	77	243
LDN	7	22	68	216

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Maple St
SEGMENT Veterans Blvd to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,054
SPEED =	20
PK HR % =	10
NEAR LANE/FAR LANE DIST =	10
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	105

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.8	- -
MEDIUM TRUCKS=	4.00	49.8	- -
HEAVY TRUCKS =	8.01	49.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	47.5	45.6	43.8	37.8	46.4	47.0
MEDIUM TRUCKS	35.3	33.8	27.4	25.9	34.3	34.6
HEAVY TRUCKS	42.8	41.3	32.3	33.5	41.9	42.0
VEHICULAR NOISE	49.0	47.2	44.2	39.4	47.9	**48.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	3	11
LDN	0	1	3	10

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Veterans Blvd to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	177
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	18

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	43.0	41.1	39.4	33.3	41.9	42.5
MEDIUM TRUCKS	29.5	28.0	21.6	20.1	28.6	28.8
HEAVY TRUCKS	36.4	34.9	25.9	27.2	35.5	35.6
VEHICULAR NOISE	44.0	42.2	39.6	34.4	43.0	**43.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	4
LDN	0	0	1	3

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Broadway to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,875
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	188

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.9	51.0	49.3	43.2	51.8	52.4
MEDIUM TRUCKS	39.4	37.9	31.5	30.0	38.4	38.7
HEAVY TRUCKS	46.3	44.8	35.8	37.1	45.4	45.5
VEHICULAR NOISE	53.9	52.1	49.5	44.3	52.9	**53.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	3	11	34
LDN	1	3	10	31

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Middlefield to Main St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	145
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	14

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	41.8	39.9	38.1	32.1	40.7	41.3
MEDIUM TRUCKS	28.3	26.8	20.4	18.9	27.3	27.5
HEAVY TRUCKS	35.1	33.7	24.7	25.9	34.3	34.4
VEHICULAR NOISE	42.8	41.0	38.4	33.2	41.7	**42.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	1	3
LDN	0	0	1	2

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Brewster Ave to Veterans Blvd
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	-
SPEED =	-
PK HR % =	10
NEAR LANE/FAR LANE DIST =	
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	#VALUE!

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	50.1	- -
MEDIUM TRUCKS=	4.00	50.0	- -
HEAVY TRUCKS =	8.01	50.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
MEDIUM TRUCKS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
HEAVY TRUCKS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
VEHICULAR NOISE	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	**#VALUE!**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	#VALUE!	#VALUE!	#VALUE!	#VALUE!
LDN	#VALUE!	#VALUE!	#VALUE!	#VALUE!

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Veterans Blvd to Middlefield
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	5,214
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	21
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	521

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.0	- -
MEDIUM TRUCKS=	4.00	48.9	- -
HEAVY TRUCKS =	8.01	49.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	57.3	55.4	53.7	47.6	56.2	56.8
MEDIUM TRUCKS	43.8	42.3	35.9	34.4	42.8	43.1
HEAVY TRUCKS	50.7	49.2	40.2	41.5	49.8	49.9
VEHICULAR NOISE	58.3	56.5	53.9	48.7	57.3	**57.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	3	9	30	95
LDN	3	8	27	84

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Middlefield to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,766
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	277

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.6	52.7	50.9	44.8	53.5	54.1
MEDIUM TRUCKS	41.0	39.5	33.2	31.6	40.1	40.3
HEAVY TRUCKS	47.9	46.5	37.4	38.7	47.0	47.2
VEHICULAR NOISE	55.6	53.8	51.2	45.9	54.5	**55.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	5	16	50
LDN	1	4	14	45

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT US Hwy 101 to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	27,423
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,742

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.8	67.9	66.2	60.1	68.7	69.3
MEDIUM TRUCKS	62.4	60.9	54.5	53.0	61.5	61.7
HEAVY TRUCKS	65.2	63.8	54.7	56.0	64.3	64.5
VEHICULAR NOISE	71.7	69.9	66.7	62.1	70.6	**71.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	64	203	642	2030
LDN	58	183	578	1829

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Broadway to Bay Rd
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	50,710
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	69
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,071

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	36.3	- -
MEDIUM TRUCKS=	4.00	36.2	- -
HEAVY TRUCKS =	8.01	36.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.6	70.7	68.9	62.9	71.5	72.1
MEDIUM TRUCKS	65.2	63.7	57.3	55.8	64.2	64.5
HEAVY TRUCKS	68.0	66.5	57.5	58.7	67.1	67.2
VEHICULAR NOISE	74.4	72.7	69.5	64.9	73.4	**73.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	122	385	1217	3849
LDN	110	347	1097	3468

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Spring St to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	40,417
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,042

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.0	69.1	67.3	61.3	69.9	70.5
MEDIUM TRUCKS	63.6	62.1	55.7	54.2	62.6	62.9
HEAVY TRUCKS	66.4	64.9	55.9	57.1	65.5	65.6
VEHICULAR NOISE	72.8	71.1	67.9	63.3	71.8	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	84	266	841	2661
LDN	76	240	758	2397

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Hess to Hudson St
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	40,507
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,051

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.9	69.0	67.2	61.1	69.8	70.4
MEDIUM TRUCKS	63.4	61.9	55.6	54.0	62.5	62.7
HEAVY TRUCKS	66.2	64.8	55.7	57.0	65.4	65.5
VEHICULAR NOISE	72.7	70.9	67.8	63.1	71.7	**72.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	81	257	813	2572
LDN	73	232	733	2317

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Hudson St to Gordon/Orchard
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	40,797
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,080

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.0	69.1	67.3	61.3	69.9	70.5
MEDIUM TRUCKS	63.6	62.1	55.7	54.2	62.6	62.9
HEAVY TRUCKS	66.4	64.9	55.9	57.2	65.5	65.6
VEHICULAR NOISE	72.8	71.1	67.9	63.3	71.8	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	84	267	843	2665
LDN	76	240	759	2401

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Gordon/Orchard to Kentfield
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	34,704
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,470

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.2	68.3	66.5	60.5	69.1	69.7
MEDIUM TRUCKS	62.8	61.3	54.9	53.3	61.8	62.0
HEAVY TRUCKS	65.5	64.1	55.1	56.3	64.7	64.8
VEHICULAR NOISE	72.0	70.3	67.1	62.4	71.0	**71.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	70	220	697	2204
LDN	63	199	628	1985

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Kentfield to Massachusetts Ave
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	29,274
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,927

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.3	69.4	67.6	61.6	70.2	70.8
MEDIUM TRUCKS	63.1	61.6	55.2	53.7	62.1	62.4
HEAVY TRUCKS	65.5	64.1	55.0	56.3	64.6	64.8
VEHICULAR NOISE	72.8	71.0	68.1	63.2	71.7	**72.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	83	264	834	2637
LDN	75	236	747	2363

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Massachusetts Ave to Sequoia
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,508
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	75
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,651

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	33.2	- -
MEDIUM TRUCKS=	4.00	33.1	- -
HEAVY TRUCKS =	8.01	33.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.8	69.9	68.2	62.1	70.7	71.4
MEDIUM TRUCKS	63.7	62.2	55.8	54.2	62.7	62.9
HEAVY TRUCKS	66.1	64.6	55.6	56.9	65.2	65.3
VEHICULAR NOISE	73.4	71.6	68.6	63.8	72.3	**72.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	95	301	952	3011
LDN	85	270	853	2698

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Sequoia to Alameda Dr
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,146
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,315

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.4	66.6	60.5	69.2	69.8
MEDIUM TRUCKS	62.1	60.6	54.2	52.6	61.1	61.3
HEAVY TRUCKS	64.5	63.0	54.0	55.3	63.6	63.7
VEHICULAR NOISE	71.8	70.0	67.1	62.2	70.7	**71.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	66	209	659	2085
LDN	59	187	591	1869

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT El Camino Real to Hess
LOCATION: City of Redwood City, CA SCENARIO: Existing

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,136
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,814

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.7	68.9	67.1	61.0	69.7	70.3
MEDIUM TRUCKS	63.3	61.8	55.5	53.9	62.4	62.6
HEAVY TRUCKS	66.1	64.7	55.6	56.9	65.2	65.4
VEHICULAR NOISE	72.6	70.8	67.7	63.0	71.6	**72.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	79	251	794	2511
LDN	72	226	715	2262

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Sequoia to Alameda Dr
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	28,335
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,833

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.1	69.2	67.5	61.4	70.0	70.6
MEDIUM TRUCKS	62.9	61.4	55.1	53.5	62.0	62.2
HEAVY TRUCKS	65.3	63.9	54.9	56.1	64.5	64.6
VEHICULAR NOISE	72.6	70.9	67.9	63.1	71.6	**72.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	81	255	807	2553
LDN	72	229	723	2287

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Shoreline Dr to Twin Dolphin Dr
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	31,210
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	82
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,121

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	28.8	- -
MEDIUM TRUCKS=	4.00	28.6	- -
HEAVY TRUCKS =	8.01	28.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.7	67.8	66.0	60.0	68.6	69.2
MEDIUM TRUCKS	55.1	53.6	47.3	45.7	54.2	54.4
HEAVY TRUCKS	61.5	60.0	51.0	52.3	60.6	60.7
VEHICULAR NOISE	70.4	68.6	66.2	60.8	69.4	**69.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	49	154	488	1543
LDN	43	136	432	1365

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Twin Dolphin Dr to US Hwy 101 Ramps (Shoreway Rd)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	32,606
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,261

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.8	68.9	67.2	61.1	69.7	70.4
MEDIUM TRUCKS	55.4	53.9	47.5	46.0	54.5	54.7
HEAVY TRUCKS	61.3	59.9	50.9	52.1	60.5	60.6
VEHICULAR NOISE	71.4	69.6	67.3	61.8	70.3	**70.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	61	194	615	1943
LDN	54	171	542	1712

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY US Hwy 101
SEGMENT Whipple Ave to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	263,574
SPEED =	60
PK HR % =	10
NEAR LANE/FAR LANE DIST =	100
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	26,357

RECEIVER INPUT DATA

RECEIVER DISTANCE =		100
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		100
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.955
MEDIUM TRUCKS	0.848	0.049	0.103	0.026
HEAVY TRUCKS	0.865	0.027	0.108	0.019

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	86.7	- -
MEDIUM TRUCKS=	4.00	86.6	- -
HEAVY TRUCKS =	8.01	86.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	82.7	80.8	79.0	72.9	81.6	82.2
MEDIUM TRUCKS	73.7	72.1	65.8	64.2	72.7	72.9
HEAVY TRUCKS	76.0	74.5	65.5	66.8	75.1	75.2
VEHICULAR NOISE	83.9	82.1	79.4	74.3	82.9	**83.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2177	6885	21773	68854
LDN	1943	6145	19432	61449

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY US Hwy 101
SEGMENT Woodside Rd (SR-84) to Marsh Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	263,138
SPEED =	60
PK HR % =	10
NEAR LANE/FAR LANE DIST =	100
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	26,314

RECEIVER INPUT DATA

RECEIVER DISTANCE =		100
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		100
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	8	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.955
MEDIUM TRUCKS	0.848	0.049	0.103	0.026
HEAVY TRUCKS	0.865	0.027	0.108	0.019

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	86.7	- -
MEDIUM TRUCKS=	4.00	86.6	- -
HEAVY TRUCKS =	8.01	86.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	82.7	80.8	79.0	72.9	81.6	82.2
MEDIUM TRUCKS	73.6	72.1	65.8	64.2	72.7	72.9
HEAVY TRUCKS	76.0	74.5	65.5	66.8	75.1	75.2
VEHICULAR NOISE	83.9	82.1	79.4	74.3	82.9	**83.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	2174	6874	21737	68740
LDN	1940	6135	19400	61348

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Whipple Ave to Brewster
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	46,639
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,664

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.0	66.1	64.4	58.3	66.9	67.5
MEDIUM TRUCKS	54.5	53.0	46.6	45.1	53.6	53.8
HEAVY TRUCKS	61.4	59.9	50.9	52.2	60.5	60.6
VEHICULAR NOISE	69.0	67.2	64.6	59.4	68.0	**68.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	35	112	353	1117
LDN	31	99	314	993

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Bridge Pkwy to Shoreline Dr
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,499
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,350

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.3	62.4	60.6	54.6	63.2	63.8
MEDIUM TRUCKS	49.8	48.2	41.9	40.3	48.8	49.0
HEAVY TRUCKS	56.1	54.7	45.6	46.9	55.3	55.4
VEHICULAR NOISE	65.1	63.2	60.8	55.4	64.0	**64.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	14	45	142	448
LDN	13	40	125	397

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Kentfield to Massachusetts Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,099
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,110

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.7	70.8	69.1	63.0	71.6	72.3
MEDIUM TRUCKS	64.6	63.0	56.7	55.1	63.6	63.8
HEAVY TRUCKS	67.0	65.5	56.5	57.8	66.1	66.2
VEHICULAR NOISE	74.3	72.5	69.5	64.7	73.2	**73.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	117	370	1171	3703
LDN	105	332	1049	3318

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Brewster to Jefferson
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,563
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,856

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.2	65.3	63.5	57.5	66.1	66.7
MEDIUM TRUCKS	53.7	52.2	45.8	44.3	52.7	53.0
HEAVY TRUCKS	60.5	59.1	50.1	51.3	59.7	59.8
VEHICULAR NOISE	68.2	66.4	63.8	58.6	67.2	**67.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	29	92	292	924
LDN	26	82	260	821

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Jefferson to Main
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,338
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,934

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.2	62.3	60.5	54.5	63.1	63.7
MEDIUM TRUCKS	50.7	49.2	42.8	41.3	49.7	50.0
HEAVY TRUCKS	57.5	56.1	47.1	48.3	56.7	56.8
VEHICULAR NOISE	65.2	63.4	60.8	55.6	64.2	**64.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	15	46	146	463
LDN	13	41	130	412

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Main St to Maple St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,585
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	56
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,458

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.5	- -
MEDIUM TRUCKS=	4.00	41.4	- -
HEAVY TRUCKS =	8.01	41.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.8	62.9	61.1	55.1	63.7	64.3
MEDIUM TRUCKS	51.3	49.7	43.4	41.8	50.3	50.5
HEAVY TRUCKS	58.1	56.7	47.7	48.9	57.3	57.4
VEHICULAR NOISE	65.8	64.0	61.4	56.2	64.7	**65.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	17	53	167	528
LDN	15	47	148	469

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Maple St to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	25,035
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	57
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,504

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.2	- -
MEDIUM TRUCKS=	4.00	41.1	- -
HEAVY TRUCKS =	8.01	41.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.9	63.0	61.2	55.2	63.8	64.4
MEDIUM TRUCKS	51.4	49.9	43.5	42.0	50.4	50.6
HEAVY TRUCKS	58.2	56.8	47.8	49.0	57.4	57.5
VEHICULAR NOISE	65.9	64.1	61.5	56.3	64.8	**65.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	17	54	171	542
LDN	15	48	152	482

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,505
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	28
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,450

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.1	- -
MEDIUM TRUCKS=	4.00	48.0	- -
HEAVY TRUCKS =	8.01	48.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.1	62.2	60.5	54.4	63.0	63.6
MEDIUM TRUCKS	50.6	49.1	42.7	41.2	49.6	49.9
HEAVY TRUCKS	57.5	56.0	47.0	48.3	56.6	56.7
VEHICULAR NOISE	65.1	63.3	60.7	55.5	64.1	**64.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	14	45	144	454
LDN	13	40	128	404

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Whipple Ave to Hopkins Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,746
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	175

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.6	50.7	48.9	42.9	51.5	52.1
MEDIUM TRUCKS	39.1	37.6	31.2	29.7	38.1	38.4
HEAVY TRUCKS	46.0	44.5	35.5	36.7	45.1	45.2
VEHICULAR NOISE	53.6	51.8	49.2	44.0	52.6	**53.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	3	10	32
LDN	1	3	9	29

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Hopkins Ave to Brewster Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,547
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	155

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.1	50.2	48.4	42.4	51.0	51.6
MEDIUM TRUCKS	38.6	37.1	30.7	29.2	37.6	37.8
HEAVY TRUCKS	45.4	44.0	35.0	36.2	44.6	44.7
VEHICULAR NOISE	53.1	51.3	48.7	43.5	52.0	**52.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	3	9	28
LDN	1	3	8	25

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Brewster Ave to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,062
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	106

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	50.4	48.5	46.7	40.7	49.3	49.9
MEDIUM TRUCKS	36.9	35.4	29.0	27.5	35.9	36.2
HEAVY TRUCKS	43.7	42.3	33.3	34.5	42.9	43.0
VEHICULAR NOISE	51.4	49.6	47.0	41.8	50.4	**50.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	2	6	19
LDN	1	2	5	17

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Whipple Ave to Hopkins Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,024
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,102

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.9	69.0	67.2	61.2	69.8	70.4
MEDIUM TRUCKS	63.5	62.0	55.6	54.1	62.5	62.8
HEAVY TRUCKS	66.3	64.8	55.8	57.1	65.4	65.5
VEHICULAR NOISE	72.7	71.0	67.8	63.2	71.7	**72.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	82	261	824	2605
LDN	74	235	742	2347

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Hopkins to Brewster
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	28,266
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,827

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.3	67.4	65.6	59.6	68.2	68.8
MEDIUM TRUCKS	61.9	60.4	54.0	52.5	60.9	61.1
HEAVY TRUCKS	64.6	63.2	54.2	55.4	63.8	63.9
VEHICULAR NOISE	71.1	69.4	66.2	61.6	70.1	**70.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	57	180	568	1795
LDN	51	162	511	1617

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Brewster to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	25,114
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,511

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.9	67.0	65.2	59.2	67.8	68.4
MEDIUM TRUCKS	61.5	60.0	53.6	52.1	60.5	60.8
HEAVY TRUCKS	64.3	62.8	53.8	55.0	63.4	63.5
VEHICULAR NOISE	70.7	69.0	65.8	61.2	69.7	**70.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	52	164	519	1641
LDN	47	148	467	1478

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Broadway to James Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,093
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	60
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,209

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	40.1	- -
MEDIUM TRUCKS=	4.00	40.0	- -
HEAVY TRUCKS =	8.01	40.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.6	66.7	64.9	58.8	67.5	68.1
MEDIUM TRUCKS	61.1	59.6	53.3	51.7	60.2	60.4
HEAVY TRUCKS	63.9	62.5	53.5	54.7	63.1	63.2
VEHICULAR NOISE	70.4	68.7	65.5	60.8	69.4	**69.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	48	152	480	1518
LDN	43	137	432	1368

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT James to Jefferson Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	23,452
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,345

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.3	62.4	60.7	54.6	63.2	63.8
MEDIUM TRUCKS	58.8	57.3	51.0	49.4	57.9	58.1
HEAVY TRUCKS	62.5	61.1	52.1	53.3	61.7	61.8
VEHICULAR NOISE	67.2	65.5	61.6	57.7	66.2	**66.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	23	73	230	726
LDN	21	66	210	664

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Jefferson Ave to Maple
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	51,835
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,183

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.9	70.0	68.3	62.2	70.8	71.4
MEDIUM TRUCKS	64.5	63.0	56.6	55.1	63.5	63.8
HEAVY TRUCKS	67.3	65.9	56.8	58.1	66.4	66.6
VEHICULAR NOISE	73.8	72.0	68.8	64.2	72.7	**73.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	104	329	1041	3292
LDN	94	297	938	2965

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Maple to Cedar
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	53,550
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,355

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.6
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.7	64.0
HEAVY TRUCKS	67.5	66.1	57.0	58.3	66.6	66.8
VEHICULAR NOISE	74.0	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	345	1090	3448
LDN	98	311	982	3106

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Cedar to Roosevelt Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	53,545
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,355

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.4	62.3	71.0	71.6
MEDIUM TRUCKS	64.6	63.1	56.8	55.2	63.7	63.9
HEAVY TRUCKS	67.4	66.0	57.0	58.2	66.6	66.7
VEHICULAR NOISE	73.9	72.2	69.0	64.3	72.9	**73.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	108	340	1075	3400
LDN	97	306	969	3063

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Roosevelt Ave to Pine
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	54,291
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,429

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.6
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.7	64.0
HEAVY TRUCKS	67.5	66.1	57.0	58.3	66.6	66.8
VEHICULAR NOISE	74.0	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	109	345	1090	3448
LDN	98	311	982	3106

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Pine to Main
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	52,713
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	56
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,271

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.5	- -
MEDIUM TRUCKS=	4.00	41.4	- -
HEAVY TRUCKS =	8.01	41.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.2	70.3	68.5	62.5	71.1	71.7
MEDIUM TRUCKS	64.8	63.3	56.9	55.4	63.8	64.0
HEAVY TRUCKS	67.5	66.1	57.1	58.3	66.7	66.8
VEHICULAR NOISE	74.0	72.3	69.1	64.5	73.0	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	111	350	1106	3498
LDN	100	315	997	3151

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Main to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	55,879
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,588

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.6
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.7	64.0
HEAVY TRUCKS	67.5	66.0	57.0	58.3	66.6	66.7
VEHICULAR NOISE	73.9	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	344	1088	3442
LDN	98	310	980	3100

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Woodside Rd (SR-84) to Charter
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	72,120
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	7,212

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.2	72.3	70.5	64.5	73.1	73.7
MEDIUM TRUCKS	66.8	65.3	58.9	57.4	65.8	66.1
HEAVY TRUCKS	69.5	68.1	59.1	60.3	68.7	68.8
VEHICULAR NOISE	76.0	74.3	71.1	66.5	75.0	**75.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	175	555	1755	5548
LDN	158	500	1580	4998

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Charter to Center
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	72,169
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	7,217

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.2	72.3	70.5	64.5	73.1	73.7
MEDIUM TRUCKS	66.8	65.3	58.9	57.4	65.8	66.1
HEAVY TRUCKS	69.5	68.1	59.1	60.3	68.7	68.8
VEHICULAR NOISE	76.0	74.3	71.1	66.5	75.0	**75.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	176	555	1756	5552
LDN	158	500	1582	5001

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Center to Northumberland
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	66,515
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,651

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.8	71.9	70.2	64.1	72.7	73.3
MEDIUM TRUCKS	66.4	64.9	58.6	57.0	65.5	65.7
HEAVY TRUCKS	69.2	67.8	58.7	60.0	68.3	68.5
VEHICULAR NOISE	75.7	73.9	70.7	66.1	74.6	**75.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	162	512	1618	5117
LDN	146	461	1458	4609

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Northumberland to Oakwood
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	66,513
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	57
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,651

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.2	- -
MEDIUM TRUCKS=	4.00	41.1	- -
HEAVY TRUCKS =	8.01	41.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.2	71.3	69.6	63.5	72.1	72.7
MEDIUM TRUCKS	65.8	64.3	57.9	56.4	64.9	65.1
HEAVY TRUCKS	68.6	67.2	58.1	59.4	67.7	67.9
VEHICULAR NOISE	75.1	73.3	70.1	65.5	74.0	**74.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	141	445	1407	4451
LDN	127	401	1268	4009

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Oakwood to Selby Ln
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	63,084
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	65
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,308

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	38.1	- -
MEDIUM TRUCKS=	4.00	38.0	- -
HEAVY TRUCKS =	8.01	38.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.3	71.4	69.7	63.6	72.2	72.9
MEDIUM TRUCKS	65.9	64.4	58.1	56.5	65.0	65.2
HEAVY TRUCKS	68.7	67.3	58.2	59.5	67.8	68.0
VEHICULAR NOISE	75.2	73.4	70.2	65.6	74.1	**74.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	144	456	1443	4562
LDN	130	411	1300	4110

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Middlefield Rd
SEGMENT Main St to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	11,932
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,193

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.9	59.0	57.2	51.2	59.8	60.4
MEDIUM TRUCKS	47.4	45.9	39.5	38.0	46.4	46.7
HEAVY TRUCKS	54.2	52.8	43.8	45.0	53.4	53.5
VEHICULAR NOISE	61.9	60.1	57.5	52.3	60.9	**61.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	22	69	217
LDN	6	19	61	193

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Middlefield Rd
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,986
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,299

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.3	59.4	57.6	51.6	60.2	60.8
MEDIUM TRUCKS	47.8	46.2	39.9	38.3	46.8	47.0
HEAVY TRUCKS	54.6	53.2	44.2	45.4	53.8	53.9
VEHICULAR NOISE	62.3	60.5	57.9	52.7	61.2	**61.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	24	75	236
LDN	7	21	66	210

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Veterans Blvd to Industrial Way
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,167
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,817

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.6	64.7	62.9	56.9	65.5	66.1
MEDIUM TRUCKS	53.1	51.6	45.2	43.7	52.1	52.4
HEAVY TRUCKS	60.0	58.5	49.5	50.7	59.1	59.2
VEHICULAR NOISE	67.6	65.8	63.2	58.0	66.6	**67.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	26	81	255	807
LDN	23	72	227	717

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Industrial to Lenolt
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	36,084
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	29
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,608

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.9	- -
MEDIUM TRUCKS=	4.00	47.9	- -
HEAVY TRUCKS =	8.01	47.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.8	63.9	62.1	56.1	64.7	65.3
MEDIUM TRUCKS	52.3	50.8	44.4	42.9	51.3	51.6
HEAVY TRUCKS	59.2	57.7	48.7	49.9	58.3	58.4
VEHICULAR NOISE	66.8	65.0	62.4	57.2	65.8	**66.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	21	67	212	671
LDN	19	60	189	597

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Lenolt to Arguello
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	32,856
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,286

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.4	63.5	61.8	55.7	64.3	64.9
MEDIUM TRUCKS	51.9	50.4	44.0	42.5	50.9	51.2
HEAVY TRUCKS	58.8	57.3	48.3	49.6	57.9	58.0
VEHICULAR NOISE	66.4	64.6	62.0	56.8	65.4	**65.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	19	61	194	613
LDN	17	55	172	545

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Arguello to Stafford
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	34,215
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,421

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.0	64.1	62.3	56.3	64.9	65.5
MEDIUM TRUCKS	52.5	51.0	44.6	43.1	51.5	51.8
HEAVY TRUCKS	59.4	57.9	48.9	50.1	58.5	58.6
VEHICULAR NOISE	67.0	65.2	62.6	57.4	66.0	**66.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	22	70	222	703
LDN	20	63	198	625

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Stafford to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	35,970
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,597

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.1	65.2	63.4	57.3	66.0	66.6
MEDIUM TRUCKS	53.6	52.0	45.7	44.1	52.6	52.8
HEAVY TRUCKS	60.4	59.0	49.9	51.2	59.6	59.7
VEHICULAR NOISE	68.1	66.3	63.7	58.5	67.0	**67.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	28	90	283	895
LDN	25	80	252	796

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Hopkins Ave
SEGMENT Winslow St to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	-
SPEED =	-
PK HR % =	10
NEAR LANE/FAR LANE DIST =	
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	#VALUE!

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	50.1	- -
MEDIUM TRUCKS=	4.00	50.0	- -
HEAVY TRUCKS =	8.01	50.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
MEDIUM TRUCKS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
HEAVY TRUCKS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
VEHICULAR NOISE	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	**#VALUE!**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	#VALUE!	#VALUE!	#VALUE!	#VALUE!
LDN	#VALUE!	#VALUE!	#VALUE!	#VALUE!

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Brewster Ave
SEGMENT Main St to Veterans Blvd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	
SPEED =	
PK HR % =	10
NEAR LANE/FAR LANE DIST =	
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	0

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	50.1	- -
MEDIUM TRUCKS=	4.00	50.0	- -
HEAVY TRUCKS =	8.01	50.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
MEDIUM TRUCKS	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
HEAVY TRUCKS	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
VEHICULAR NOISE	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	**#NUM!**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	#NUM!	#NUM!	#NUM!	#NUM!
LDN	#NUM!	#NUM!	#NUM!	#NUM!

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Brewster Ave
SEGMENT Veterans Blvd to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	826
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	22
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	83

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.9	- -
MEDIUM TRUCKS=	4.00	48.8	- -
HEAVY TRUCKS =	8.01	48.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	51.6	49.7	47.9	41.9	50.5	51.1
MEDIUM TRUCKS	37.0	35.5	29.2	27.6	36.1	36.3
HEAVY TRUCKS	43.4	42.0	32.9	34.2	42.5	42.7
VEHICULAR NOISE	52.3	50.5	48.1	42.7	51.3	**51.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	2	8	24
LDN	1	2	7	21

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT El Camino Real to Perry
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,046
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	11
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,305

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.8	- -
MEDIUM TRUCKS=	4.00	49.7	- -
HEAVY TRUCKS =	8.01	49.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.2	59.3	57.6	51.5	60.1	60.7
MEDIUM TRUCKS	47.7	46.2	39.8	38.3	46.8	47.0
HEAVY TRUCKS	54.6	53.2	44.1	45.4	53.7	53.8
VEHICULAR NOISE	62.2	60.4	57.8	52.6	61.2	**61.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	23	74	234
LDN	7	21	66	208

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Perry to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,048
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	23
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,305

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.8	- -
MEDIUM TRUCKS=	4.00	48.7	- -
HEAVY TRUCKS =	8.01	48.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.3	59.4	57.7	51.6	60.2	60.8
MEDIUM TRUCKS	47.8	46.3	39.9	38.4	46.9	47.1
HEAVY TRUCKS	54.7	53.2	44.2	45.5	53.8	53.9
VEHICULAR NOISE	62.3	60.5	57.9	52.7	61.3	**61.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	24	75	239
LDN	7	21	67	212

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Arguello St to Winslow
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,275
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,227

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.0	59.1	57.4	51.3	59.9	60.5
MEDIUM TRUCKS	47.5	46.0	39.6	38.1	46.6	46.8
HEAVY TRUCKS	54.4	52.9	43.9	45.2	53.5	53.6
VEHICULAR NOISE	62.0	60.2	57.6	52.4	61.0	**61.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	7	22	71	223
LDN	6	20	63	198

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Winslow to Jefferson
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	3,085
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	308

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	55.0	53.1	51.4	45.3	53.9	54.5
MEDIUM TRUCKS	41.5	40.0	33.6	32.1	40.6	40.8
HEAVY TRUCKS	48.4	47.0	37.9	39.2	47.5	47.6
VEHICULAR NOISE	56.0	54.2	51.6	46.4	55.0	**55.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	6	18	56
LDN	2	5	16	50

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Jefferson to Main
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,629
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,563

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.0	60.1	58.4	52.3	60.9	61.5
MEDIUM TRUCKS	48.5	47.0	40.6	39.1	47.5	47.8
HEAVY TRUCKS	55.4	53.9	44.9	46.2	54.5	54.6
VEHICULAR NOISE	63.0	61.2	58.6	53.4	62.0	**62.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	9	28	89	280
LDN	8	25	79	249

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Main to Spring
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,749
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,875

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.8	60.9	59.1	53.1	61.7	62.3
MEDIUM TRUCKS	49.3	47.8	41.4	39.9	48.3	48.6
HEAVY TRUCKS	56.2	54.7	45.7	46.9	55.3	55.4
VEHICULAR NOISE	63.8	62.0	59.4	54.2	62.8	**63.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	11	34	106	336
LDN	9	30	95	299

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Spring to Maple St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,423
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,542

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.4	60.5	58.8	52.7	61.3	61.9
MEDIUM TRUCKS	48.9	47.4	41.0	39.5	48.0	48.2
HEAVY TRUCKS	55.8	54.3	45.3	46.6	54.9	55.0
VEHICULAR NOISE	63.4	61.6	59.0	53.8	62.4	**62.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	10	31	97	307
LDN	9	27	86	273

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Maple St to Beech
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,706
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,571

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.2	60.3	58.5	52.5	61.1	61.7
MEDIUM TRUCKS	48.7	47.2	40.8	39.3	47.7	48.0
HEAVY TRUCKS	55.6	54.1	45.1	46.3	54.7	54.8
VEHICULAR NOISE	63.2	61.4	58.8	53.6	62.2	**62.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	9	29	93	293
LDN	8	26	82	261

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Beech to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	19,547
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,955

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.2	61.3	59.5	53.4	62.1	62.7
MEDIUM TRUCKS	49.6	48.1	41.8	40.2	48.7	48.9
HEAVY TRUCKS	56.5	55.1	46.0	47.3	55.7	55.8
VEHICULAR NOISE	64.2	62.4	59.8	54.6	63.1	**63.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	12	36	115	365
LDN	10	32	103	324

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	21,330
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	22
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,133

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.9	- -
MEDIUM TRUCKS=	4.00	48.8	- -
HEAVY TRUCKS =	8.01	48.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.4	61.5	59.8	53.7	62.3	63.0
MEDIUM TRUCKS	49.9	48.4	42.1	40.5	49.0	49.2
HEAVY TRUCKS	56.8	55.4	46.3	47.6	55.9	56.1
VEHICULAR NOISE	64.5	62.7	60.0	54.8	63.4	**63.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	12	39	123	389
LDN	11	35	109	346

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Maple St
SEGMENT Veterans Blvd to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	703
SPEED =	20
PK HR % =	10
NEAR LANE/FAR LANE DIST =	10
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	70

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.8	- -
MEDIUM TRUCKS=	4.00	49.8	- -
HEAVY TRUCKS =	8.01	49.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	45.7	43.8	42.1	36.0	44.7	45.3
MEDIUM TRUCKS	33.5	32.0	25.6	24.1	32.6	32.8
HEAVY TRUCKS	41.0	39.6	30.5	31.8	40.1	40.3
VEHICULAR NOISE	47.2	45.4	42.5	37.6	46.2	**46.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	2	7
LDN	0	1	2	7

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Maple St
SEGMENT Broadway to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	64
SPEED =	20
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	35.3	33.4	31.7	25.6	34.2	34.8
MEDIUM TRUCKS	23.1	21.6	15.2	13.7	22.1	22.4
HEAVY TRUCKS	30.6	29.1	20.1	21.4	29.7	29.8
VEHICULAR NOISE	36.8	35.0	32.0	27.2	35.7	**36.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Veterans Blvd to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	572
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	57

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	48.1	46.2	44.4	38.4	47.0	47.6
MEDIUM TRUCKS	34.6	33.1	26.7	25.2	33.6	33.9
HEAVY TRUCKS	41.5	40.0	31.0	32.2	40.6	40.7
VEHICULAR NOISE	49.1	47.3	44.7	39.5	48.1	**48.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	4	11
LDN	0	1	3	10

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Broadway to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,366
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	237

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.9	52.0	50.3	44.2	52.8	53.4
MEDIUM TRUCKS	40.4	38.9	32.5	31.0	39.5	39.7
HEAVY TRUCKS	47.3	45.8	36.8	38.1	46.4	46.5
VEHICULAR NOISE	54.9	53.1	50.5	45.3	53.9	**54.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	4	14	43
LDN	1	4	12	39

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Middlefield to Main St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	305
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	31

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	45.0	43.1	41.4	35.3	43.9	44.5
MEDIUM TRUCKS	31.5	30.0	23.6	22.1	30.6	30.8
HEAVY TRUCKS	38.4	36.9	27.9	29.2	37.5	37.6
VEHICULAR NOISE	46.0	44.2	41.6	36.4	45.0	**45.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	2	6
LDN	0	0	2	5

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Brewster Ave to Veterans Blvd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	-
SPEED =	-
PK HR % =	10
NEAR LANE/FAR LANE DIST =	
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	#VALUE!

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	50.1	- -
MEDIUM TRUCKS=	4.00	50.0	- -
HEAVY TRUCKS =	8.01	50.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
MEDIUM TRUCKS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
HEAVY TRUCKS	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
VEHICULAR NOISE	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	**#VALUE!**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	#VALUE!	#VALUE!	#VALUE!	#VALUE!
LDN	#VALUE!	#VALUE!	#VALUE!	#VALUE!

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Veterans Blvd to Middlefield
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	9,398
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	21
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	940

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.0	- -
MEDIUM TRUCKS=	4.00	48.9	- -
HEAVY TRUCKS =	8.01	49.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.9	58.0	56.2	50.2	58.8	59.4
MEDIUM TRUCKS	46.4	44.9	38.5	36.9	45.4	45.6
HEAVY TRUCKS	53.2	51.8	42.8	44.0	52.4	52.5
VEHICULAR NOISE	60.9	59.1	56.5	51.3	59.8	**60.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	5	17	54	171
LDN	5	15	48	152

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Middlefield to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	3,283
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	328

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	55.3	53.4	51.6	45.6	54.2	54.8
MEDIUM TRUCKS	41.8	40.3	33.9	32.4	40.8	41.1
HEAVY TRUCKS	48.6	47.2	38.2	39.4	47.8	47.9
VEHICULAR NOISE	56.3	54.5	51.9	46.7	55.3	**55.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	6	19	60
LDN	2	5	17	53

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT US Hwy 101 to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	43,616
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,362

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.8	69.9	68.2	62.1	70.7	71.3
MEDIUM TRUCKS	64.4	62.9	56.6	55.0	63.5	63.7
HEAVY TRUCKS	67.2	65.8	56.7	58.0	66.3	66.5
VEHICULAR NOISE	73.7	71.9	68.7	64.1	72.6	**73.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	102	323	1021	3229
LDN	92	291	920	2908

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Broadway to Bay Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	61,236
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	69
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,124

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	36.3	- -
MEDIUM TRUCKS=	4.00	36.2	- -
HEAVY TRUCKS =	8.01	36.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.4	71.5	69.8	63.7	72.3	72.9
MEDIUM TRUCKS	66.0	64.5	58.1	56.6	65.0	65.3
HEAVY TRUCKS	68.8	67.4	58.3	59.6	67.9	68.0
VEHICULAR NOISE	75.3	73.5	70.3	65.7	74.2	**74.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	147	465	1470	4648
LDN	132	419	1324	4187

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Bay Rd to Spring St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	59,778
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	64
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,978

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	38.5	- -
MEDIUM TRUCKS=	4.00	38.4	- -
HEAVY TRUCKS =	8.01	38.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.1	71.2	69.4	63.3	72.0	72.6
MEDIUM TRUCKS	65.6	64.1	57.8	56.2	64.7	64.9
HEAVY TRUCKS	68.4	67.0	58.0	59.2	67.6	67.7
VEHICULAR NOISE	74.9	73.2	70.0	65.3	73.9	**74.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	135	428	1352	4276
LDN	122	385	1218	3852

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Spring St to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	49,802
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,980

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.9	70.0	68.2	62.2	70.8	71.4
MEDIUM TRUCKS	64.5	63.0	56.6	55.1	63.5	63.8
HEAVY TRUCKS	67.3	65.8	56.8	58.1	66.4	66.5
VEHICULAR NOISE	73.7	72.0	68.8	64.2	72.7	**73.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	104	328	1037	3279
LDN	93	295	934	2954

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Middlefield Rd to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	52,552
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,255

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.7
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.8	64.0
HEAVY TRUCKS	67.5	66.1	57.0	58.3	66.6	66.8
VEHICULAR NOISE	74.0	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	346	1094	3460
LDN	99	312	986	3117

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT El Camino Real to Hess
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	41,231
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,123

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.1	69.2	67.4	61.4	70.0	70.6
MEDIUM TRUCKS	63.7	62.2	55.8	54.2	62.7	62.9
HEAVY TRUCKS	66.4	65.0	56.0	57.2	65.6	65.7
VEHICULAR NOISE	72.9	71.2	68.0	63.4	71.9	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	86	271	858	2715
LDN	77	245	773	2445

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Hess to Hudson St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	44,378
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,438

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.3	69.4	67.6	61.5	70.2	70.8
MEDIUM TRUCKS	63.8	62.3	56.0	54.4	62.9	63.1
HEAVY TRUCKS	66.6	65.2	56.1	57.4	65.7	65.9
VEHICULAR NOISE	73.1	71.3	68.2	63.5	72.1	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	89	282	891	2818
LDN	80	254	803	2539

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Hudson St to Gordon/Orchard
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	44,633
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,463

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.4	69.5	67.7	61.7	70.3	70.9
MEDIUM TRUCKS	64.0	62.5	56.1	54.6	63.0	63.3
HEAVY TRUCKS	66.8	65.3	56.3	57.5	65.9	66.0
VEHICULAR NOISE	73.2	71.5	68.3	63.7	72.2	**72.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	92	292	922	2916
LDN	83	263	831	2627

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Gordon/Orchard to Kentfield
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,584
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,858

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.6	68.7	67.0	60.9	69.5	70.2
MEDIUM TRUCKS	63.2	61.7	55.3	53.8	62.3	62.5
HEAVY TRUCKS	66.0	64.6	55.5	56.8	65.1	65.3
VEHICULAR NOISE	72.5	70.7	67.5	62.9	71.4	**71.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	77	245	775	2450
LDN	70	221	698	2207

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Massachusetts Ave to Sequoia
LOCATION: City of Redwood City, CA SCENARIO: Cumulative

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	35,999
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	75
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,600

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	33.2	- -
MEDIUM TRUCKS=	4.00	33.1	- -
HEAVY TRUCKS =	8.01	33.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.2	71.3	69.5	63.5	72.1	72.7
MEDIUM TRUCKS	65.0	63.5	57.1	55.6	64.0	64.3
HEAVY TRUCKS	67.4	66.0	56.9	58.2	66.5	66.7
VEHICULAR NOISE	74.7	72.9	70.0	65.1	73.7	**74.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	129	409	1293	4089
LDN	116	366	1159	3664

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Sequoia to Alameda Dr
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	29,857
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,986

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.4	69.5	67.7	61.6	70.3	70.9
MEDIUM TRUCKS	63.2	61.7	55.3	53.8	62.2	62.4
HEAVY TRUCKS	65.6	64.1	55.1	56.4	64.7	64.8
VEHICULAR NOISE	72.9	71.1	68.2	63.3	71.8	**72.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	85	269	851	2690
LDN	76	241	762	2410

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	28,792
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	28
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,879

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.1	- -
MEDIUM TRUCKS=	4.00	48.0	- -
HEAVY TRUCKS =	8.01	48.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.8	62.9	61.2	55.1	63.7	64.3
MEDIUM TRUCKS	51.3	49.8	43.4	41.9	50.3	50.6
HEAVY TRUCKS	58.2	56.7	47.7	49.0	57.3	57.4
VEHICULAR NOISE	65.8	64.0	61.4	56.2	64.8	**65.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	17	53	169	534
LDN	15	47	150	475

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Whipple Ave to Hopkins Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,276
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	228

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.8	51.9	50.1	44.0	52.7	53.3
MEDIUM TRUCKS	40.2	38.7	32.4	30.8	39.3	39.5
HEAVY TRUCKS	47.1	45.7	36.6	37.9	46.3	46.4
VEHICULAR NOISE	54.8	53.0	50.4	45.2	53.7	**54.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	4	13	42
LDN	1	4	12	37

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Hopkins Ave to Brewster Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,693
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	269

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.5	52.6	50.8	44.8	53.4	54.0
MEDIUM TRUCKS	41.0	39.5	33.1	31.6	40.0	40.3
HEAVY TRUCKS	47.8	46.4	37.4	38.6	47.0	47.1
VEHICULAR NOISE	55.5	53.7	51.1	45.9	54.4	**55.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	5	16	50
LDN	1	4	14	44

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Winslow St
SEGMENT Brewster Ave to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,815
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	182

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	52.7	50.8	49.1	43.0	51.6	52.2
MEDIUM TRUCKS	39.2	37.7	31.3	29.8	38.3	38.5
HEAVY TRUCKS	46.1	44.6	35.6	36.9	45.2	45.3
VEHICULAR NOISE	53.7	51.9	49.3	44.1	52.7	**53.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	3	10	33
LDN	1	3	9	29

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Whipple Ave to Hopkins Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	44,145
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,415

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.2	69.3	67.6	61.5	70.1	70.7
MEDIUM TRUCKS	63.8	62.3	55.9	54.4	62.8	63.1
HEAVY TRUCKS	66.6	65.2	56.1	57.4	65.7	65.9
VEHICULAR NOISE	73.1	71.3	68.1	63.5	72.0	**72.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	89	280	887	2803
LDN	80	253	799	2525

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Hopkins to Brewster
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	29,725
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,972

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.5	67.6	65.8	59.8	68.4	69.0
MEDIUM TRUCKS	62.1	60.6	54.2	52.7	61.1	61.4
HEAVY TRUCKS	64.9	63.4	54.4	55.7	64.0	64.1
VEHICULAR NOISE	71.3	69.6	66.4	61.8	70.3	**70.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	60	189	597	1888
LDN	54	170	538	1700

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Brewster to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	26,592
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,659

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.2	67.3	65.5	59.4	68.1	68.7
MEDIUM TRUCKS	61.7	60.2	53.9	52.3	60.8	61.0
HEAVY TRUCKS	64.5	63.1	54.0	55.3	63.6	63.8
VEHICULAR NOISE	71.0	69.2	66.1	61.4	70.0	**70.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	55	174	549	1737
LDN	49	157	495	1565

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Broadway to James Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,847
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	60
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,285

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	40.1	- -
MEDIUM TRUCKS=	4.00	40.0	- -
HEAVY TRUCKS =	8.01	40.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.7	66.8	65.0	59.0	67.6	68.2
MEDIUM TRUCKS	61.3	59.8	53.4	51.9	60.3	60.6
HEAVY TRUCKS	64.1	62.6	53.6	54.9	63.2	63.3
VEHICULAR NOISE	70.5	68.8	65.6	61.0	69.5	**70.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	50	157	496	1570
LDN	45	141	447	1414

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT James to Jefferson Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	24,190
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,419

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.5	62.6	60.8	54.7	63.4	64.0
MEDIUM TRUCKS	59.0	57.5	51.1	49.6	58.0	58.2
HEAVY TRUCKS	62.7	61.3	52.2	53.5	61.8	62.0
VEHICULAR NOISE	67.4	65.7	61.8	57.9	66.4	**66.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	24	75	237	749
LDN	22	68	216	685

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Jefferson Ave to Maple
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	54,202
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,420

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.6
MEDIUM TRUCKS	64.7	63.2	56.8	55.3	63.7	64.0
HEAVY TRUCKS	67.5	66.0	57.0	58.3	66.6	66.7
VEHICULAR NOISE	73.9	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	109	344	1088	3442
LDN	98	310	980	3101

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Maple to Cedar
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	56,691
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,669

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.4	70.5	68.7	62.7	71.3	71.9
MEDIUM TRUCKS	64.9	63.4	57.1	55.5	64.0	64.2
HEAVY TRUCKS	67.7	66.3	57.3	58.5	66.9	67.0
VEHICULAR NOISE	74.2	72.5	69.3	64.6	73.2	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	115	365	1154	3650
LDN	104	329	1040	3288

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Shoreline Dr to Twin Dolphin Dr
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	32,007
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	82
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,201

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	28.8	- -
MEDIUM TRUCKS=	4.00	28.6	- -
HEAVY TRUCKS =	8.01	28.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.8	67.9	66.1	60.1	68.7	69.3
MEDIUM TRUCKS	55.2	53.7	47.4	45.8	54.3	54.5
HEAVY TRUCKS	61.6	60.2	51.1	52.4	60.7	60.9
VEHICULAR NOISE	70.5	68.7	66.3	60.9	69.5	**70.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	50	158	500	1582
LDN	44	140	443	1399

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Twin Dolphin Dr to US Hwy 101 Ramps (Shoreway Rd)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	33,460
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,346

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.0	69.1	67.3	61.2	69.9	70.5
MEDIUM TRUCKS	55.5	54.0	47.6	46.1	54.6	54.8
HEAVY TRUCKS	61.4	60.0	51.0	52.2	60.6	60.7
VEHICULAR NOISE	71.5	69.7	67.4	61.9	70.5	**71.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	63	199	631	1994
LDN	56	176	556	1757

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY US Hwy 101
SEGMENT Whipple Ave to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	265,982
SPEED =	60
PK HR % =	10
NEAR LANE/FAR LANE DIST =	100
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	26,598

RECEIVER INPUT DATA

RECEIVER DISTANCE =		100
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		100
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.955
MEDIUM TRUCKS	0.848	0.049	0.103	0.026
HEAVY TRUCKS	0.865	0.027	0.108	0.019

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	86.7	- -
MEDIUM TRUCKS=	4.00	86.6	- -
HEAVY TRUCKS =	8.01	86.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	82.7	80.8	79.0	73.0	81.6	82.2
MEDIUM TRUCKS	73.7	72.2	65.8	64.3	72.7	73.0
HEAVY TRUCKS	76.0	74.6	65.6	66.8	75.2	75.3
VEHICULAR NOISE	84.0	82.2	79.4	74.4	82.9	**83.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	2197	6948	21972	69483
LDN	1961	6201	19609	62010

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY US Hwy 101
SEGMENT Woodside Rd (SR-84) to Marsh Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	266,750
SPEED =	60
PK HR % =	10
NEAR LANE/FAR LANE DIST =	100
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	26,675

RECEIVER INPUT DATA

RECEIVER DISTANCE =		100
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		100
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	8	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.955
MEDIUM TRUCKS	0.848	0.049	0.103	0.026
HEAVY TRUCKS	0.865	0.027	0.108	0.019

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	86.7	- -
MEDIUM TRUCKS=	4.00	86.6	- -
HEAVY TRUCKS =	8.01	86.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	82.7	80.8	79.0	73.0	81.6	82.2
MEDIUM TRUCKS	73.7	72.2	65.8	64.3	72.8	73.0
HEAVY TRUCKS	76.0	74.6	65.6	66.8	75.2	75.3
VEHICULAR NOISE	84.0	82.2	79.4	74.4	82.9	**83.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	2204	6968	22036	69683
LDN	1967	6219	19666	62189

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Whipple Ave to Brewster
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	51,902
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,190

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.5	66.6	64.8	58.8	67.4	68.0
MEDIUM TRUCKS	55.0	53.5	47.1	45.6	54.0	54.3
HEAVY TRUCKS	61.8	60.4	51.4	52.6	61.0	61.1
VEHICULAR NOISE	69.5	67.7	65.1	59.9	68.4	**69.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	39	124	393	1243
LDN	35	111	349	1105

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Brewster to Jefferson
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,470
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,747

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.1	65.2	63.4	57.4	66.0	66.6
MEDIUM TRUCKS	53.6	52.1	45.7	44.1	52.6	52.8
HEAVY TRUCKS	60.4	59.0	50.0	51.2	59.6	59.7
VEHICULAR NOISE	68.1	66.3	63.7	58.5	67.0	**67.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	28	90	284	897
LDN	25	80	252	798

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Jefferson to Main
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	25,663
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,566

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.4	63.5	61.8	55.7	64.3	64.9
MEDIUM TRUCKS	51.9	50.4	44.0	42.5	51.0	51.2
HEAVY TRUCKS	58.8	57.3	48.3	49.6	57.9	58.0
VEHICULAR NOISE	66.4	64.6	62.0	56.8	65.4	**65.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	19	61	194	615
LDN	17	55	173	546

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Main St to Maple St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	30,054
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	56
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,005

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.5	- -
MEDIUM TRUCKS=	4.00	41.4	- -
HEAVY TRUCKS =	8.01	41.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.6	63.7	62.0	55.9	64.5	65.2
MEDIUM TRUCKS	52.1	50.6	44.3	42.7	51.2	51.4
HEAVY TRUCKS	59.0	57.6	48.5	49.8	58.1	58.3
VEHICULAR NOISE	66.6	64.8	62.2	57.0	65.6	**66.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	20	65	204	645
LDN	18	57	181	574

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Veterans
SEGMENT Maple St to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	29,631
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	57
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,963

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.2	- -
MEDIUM TRUCKS=	4.00	41.1	- -
HEAVY TRUCKS =	8.01	41.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.6	63.7	62.0	55.9	64.5	65.1
MEDIUM TRUCKS	52.1	50.6	44.2	42.7	51.1	51.4
HEAVY TRUCKS	59.0	57.5	48.5	49.7	58.1	58.2
VEHICULAR NOISE	66.6	64.8	62.2	57.0	65.6	**66.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	20	64	203	642
LDN	18	57	180	570

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Redwood Shores Pkwy
SEGMENT Bridge Pkwy to Shoreline Dr
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,341
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	52
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,434

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.8	- -
MEDIUM TRUCKS=	4.00	42.7	- -
HEAVY TRUCKS =	8.01	42.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	64.6	62.7	60.9	54.9	63.5	64.1
MEDIUM TRUCKS	50.0	48.5	42.1	40.6	49.1	49.3
HEAVY TRUCKS	56.4	54.9	45.9	47.2	55.5	55.6
VEHICULAR NOISE	65.3	63.5	61.1	55.7	64.3	**64.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	15	48	151	476
LDN	13	42	133	421

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Kentfield to Massachusetts Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	43,679
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,368

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.0	71.1	69.3	63.3	71.9	72.5
MEDIUM TRUCKS	64.8	63.3	56.9	55.4	63.9	64.1
HEAVY TRUCKS	67.2	65.8	56.8	58.0	66.4	66.5
VEHICULAR NOISE	74.5	72.8	69.8	64.9	73.5	**74.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	124	393	1244	3935
LDN	112	353	1115	3526

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Cedar to Roosevelt Ave
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	56,691
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,669

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.3	70.4	68.6	62.6	71.2	71.8
MEDIUM TRUCKS	64.9	63.4	57.0	55.5	63.9	64.2
HEAVY TRUCKS	67.7	66.2	57.2	58.5	66.8	66.9
VEHICULAR NOISE	74.1	72.4	69.2	64.6	73.1	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	114	360	1138	3600
LDN	103	324	1026	3243

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Roosevelt Ave to Pine
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	57,483
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,748

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.4	70.5	68.7	62.7	71.3	71.9
MEDIUM TRUCKS	64.9	63.4	57.1	55.5	64.0	64.2
HEAVY TRUCKS	67.7	66.3	57.3	58.5	66.9	67.0
VEHICULAR NOISE	74.2	72.5	69.3	64.6	73.2	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	115	365	1154	3650
LDN	104	329	1040	3288

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Pine to Main
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	54,602
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	56
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,460

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.5	- -
MEDIUM TRUCKS=	4.00	41.4	- -
HEAVY TRUCKS =	8.01	41.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.3	70.4	68.7	62.6	71.2	71.9
MEDIUM TRUCKS	64.9	63.4	57.0	55.5	64.0	64.2
HEAVY TRUCKS	67.7	66.3	57.2	58.5	66.8	67.0
VEHICULAR NOISE	74.2	72.4	69.2	64.6	73.1	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	115	362	1146	3624
LDN	103	326	1032	3264

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Main to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	59,390
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,939

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.4	70.5	68.7	62.7	71.3	71.9
MEDIUM TRUCKS	65.0	63.5	57.1	55.5	64.0	64.2
HEAVY TRUCKS	67.7	66.3	57.3	58.5	66.9	67.0
VEHICULAR NOISE	74.2	72.5	69.3	64.7	73.2	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	116	366	1157	3658
LDN	104	329	1042	3295

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Woodside Rd (SR-84) to Charter
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	74,693
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	7,469

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.3	72.4	70.7	64.6	73.2	73.9
MEDIUM TRUCKS	66.9	65.4	59.1	57.5	66.0	66.2
HEAVY TRUCKS	69.7	68.3	59.2	60.5	68.8	69.0
VEHICULAR NOISE	76.2	74.4	71.3	66.6	75.2	**75.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	182	575	1817	5746
LDN	164	518	1637	5176

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Charter to Center
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	74,756
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	7,476

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.3	72.4	70.7	64.6	73.3	73.9
MEDIUM TRUCKS	66.9	65.4	59.1	57.5	66.0	66.2
HEAVY TRUCKS	69.7	68.3	59.2	60.5	68.8	69.0
VEHICULAR NOISE	76.2	74.4	71.3	66.6	75.2	**75.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	182	575	1819	5751
LDN	164	518	1638	5181

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Center to Northumberland
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	68,611
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,861

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.0	72.1	70.3	64.3	72.9	73.5
MEDIUM TRUCKS	66.6	65.0	58.7	57.1	65.6	65.8
HEAVY TRUCKS	69.3	67.9	58.9	60.1	68.5	68.6
VEHICULAR NOISE	75.8	74.1	70.9	66.2	74.8	**75.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	167	528	1669	5278
LDN	150	475	1504	4755

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Northumberland to Oakwood
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	68,611
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	57
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,861

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.2	- -
MEDIUM TRUCKS=	4.00	41.1	- -
HEAVY TRUCKS =	8.01	41.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.4	71.5	69.7	63.7	72.3	72.9
MEDIUM TRUCKS	65.9	64.4	58.1	56.5	65.0	65.2
HEAVY TRUCKS	68.7	67.3	58.3	59.5	67.9	68.0
VEHICULAR NOISE	75.2	73.5	70.3	65.6	74.2	**74.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	145	459	1452	4591
LDN	131	414	1308	4136

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY El Camino Real
SEGMENT Oakwood to Selby Ln
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	65,188
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	65
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,519

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	38.1	- -
MEDIUM TRUCKS=	4.00	38.0	- -
HEAVY TRUCKS =	8.01	38.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.5	71.6	69.8	63.8	72.4	73.0
MEDIUM TRUCKS	66.1	64.6	58.2	56.6	65.1	65.3
HEAVY TRUCKS	68.8	67.4	58.4	59.6	68.0	68.1
VEHICULAR NOISE	75.3	73.6	70.4	65.8	74.3	**74.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	149	471	1491	4715
LDN	134	425	1343	4247

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Middlefield Rd
SEGMENT Main St to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,382
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,338

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.4	59.5	57.7	51.7	60.3	60.9
MEDIUM TRUCKS	47.9	46.4	40.0	38.5	46.9	47.2
HEAVY TRUCKS	54.7	53.3	44.3	45.5	53.9	54.0
VEHICULAR NOISE	62.4	60.6	58.0	52.8	61.4	**61.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	24	77	243
LDN	7	22	68	216

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Middlefield Rd
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,355
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,435

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.7	59.8	58.0	52.0	60.6	61.2
MEDIUM TRUCKS	48.2	46.7	40.3	38.8	47.2	47.5
HEAVY TRUCKS	55.0	53.6	44.6	45.8	54.2	54.3
VEHICULAR NOISE	62.7	60.9	58.3	53.1	61.7	**62.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	26	82	261
LDN	7	23	73	232

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Veterans Blvd to Industrial Way
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	40,159
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,016

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.8	64.9	63.2	57.1	65.7	66.3
MEDIUM TRUCKS	53.3	51.8	45.4	43.9	52.4	52.6
HEAVY TRUCKS	60.2	58.8	49.7	51.0	59.3	59.4
VEHICULAR NOISE	67.8	66.0	63.4	58.2	66.8	**67.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	27	85	268	849
LDN	24	75	239	755

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Industrial to Lenolt
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,749
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	29
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,875

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.9	- -
MEDIUM TRUCKS=	4.00	47.9	- -
HEAVY TRUCKS =	8.01	47.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.1	64.2	62.5	56.4	65.0	65.6
MEDIUM TRUCKS	52.6	51.1	44.7	43.2	51.7	51.9
HEAVY TRUCKS	59.5	58.0	49.0	50.3	58.6	58.7
VEHICULAR NOISE	67.1	65.3	62.7	57.5	66.1	**66.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	23	72	228	721
LDN	20	64	203	641

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Lenolt to Arguello
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	35,298
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,530

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.7	63.8	62.1	56.0	64.6	65.2
MEDIUM TRUCKS	52.2	50.7	44.3	42.8	51.3	51.5
HEAVY TRUCKS	59.1	57.7	48.6	49.9	58.2	58.3
VEHICULAR NOISE	66.7	64.9	62.3	57.1	65.7	**66.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	21	66	208	659
LDN	19	59	185	586

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Arguello to Stafford
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	36,745
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,674

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.3	64.4	62.7	56.6	65.2	65.8
MEDIUM TRUCKS	52.8	51.3	44.9	43.4	51.9	52.1
HEAVY TRUCKS	59.7	58.2	49.2	50.5	58.8	58.9
VEHICULAR NOISE	67.3	65.5	62.9	57.7	66.3	**66.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	24	75	239	755
LDN	21	67	212	671

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Whipple Ave
SEGMENT Stafford to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	38,408
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	70
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,841

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	35.8	- -
MEDIUM TRUCKS=	4.00	35.7	- -
HEAVY TRUCKS =	8.01	35.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	67.3	65.5	63.7	57.6	66.3	66.9
MEDIUM TRUCKS	53.8	52.3	46.0	44.4	52.9	53.1
HEAVY TRUCKS	60.7	59.3	50.2	51.5	59.8	60.0
VEHICULAR NOISE	68.4	66.6	63.9	58.7	67.3	**67.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	30	96	302	956
LDN	27	85	269	850

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Brewster Ave
SEGMENT Main St to Veterans Blvd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	
SPEED =	
PK HR % =	10
NEAR LANE/FAR LANE DIST =	
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	0

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	50.1	- -
MEDIUM TRUCKS=	4.00	50.0	- -
HEAVY TRUCKS =	8.01	50.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
MEDIUM TRUCKS	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
HEAVY TRUCKS	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
VEHICULAR NOISE	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	**#NUM!**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	#NUM!	#NUM!	#NUM!	#NUM!
LDN	#NUM!	#NUM!	#NUM!	#NUM!

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Brewster Ave
SEGMENT Veterans Blvd to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	1,671
SPEED =	30
PK HR % =	10
NEAR LANE/FAR LANE DIST =	22
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	167

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.9	- -
MEDIUM TRUCKS=	4.00	48.8	- -
HEAVY TRUCKS =	8.01	48.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	54.7	52.8	51.0	44.9	53.6	54.2
MEDIUM TRUCKS	40.1	38.6	32.2	30.7	39.2	39.4
HEAVY TRUCKS	46.5	45.0	36.0	37.2	45.6	45.7
VEHICULAR NOISE	55.4	53.6	51.2	45.8	54.3	**54.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	5	15	49
LDN	1	4	14	43

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT El Camino Real to Perry
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,048
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	11
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,405

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.8	- -
MEDIUM TRUCKS=	4.00	49.7	- -
HEAVY TRUCKS =	8.01	49.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.6	59.7	57.9	51.8	60.5	61.1
MEDIUM TRUCKS	48.0	46.5	40.2	38.6	47.1	47.3
HEAVY TRUCKS	54.9	53.5	44.4	45.7	54.0	54.2
VEHICULAR NOISE	62.6	60.8	58.1	52.9	61.5	**62.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	25	80	252
LDN	7	22	71	224

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Perry to Arguello St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,069
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	23
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,407

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.8	- -
MEDIUM TRUCKS=	4.00	48.7	- -
HEAVY TRUCKS =	8.01	48.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.6	59.8	58.0	51.9	60.6	61.2
MEDIUM TRUCKS	48.1	46.6	40.3	38.7	47.2	47.4
HEAVY TRUCKS	55.0	53.6	44.5	45.8	54.1	54.3
VEHICULAR NOISE	62.7	60.9	58.2	53.0	61.6	**62.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	26	81	257
LDN	7	23	72	229

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Arguello St to Winslow
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,250
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,325

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.4	59.5	57.7	51.6	60.3	60.9
MEDIUM TRUCKS	47.8	46.3	40.0	38.4	46.9	47.1
HEAVY TRUCKS	54.7	53.3	44.2	45.5	53.8	54.0
VEHICULAR NOISE	62.4	60.6	58.0	52.7	61.3	**61.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	8	24	76	241
LDN	7	21	68	214

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Winslow to Jefferson
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	3,253
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	325

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	55.3	53.4	51.6	45.5	54.2	54.8
MEDIUM TRUCKS	41.7	40.2	33.9	32.3	40.8	41.0
HEAVY TRUCKS	48.6	47.2	38.1	39.4	47.7	47.9
VEHICULAR NOISE	56.3	54.5	51.9	46.6	55.2	**55.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	6	19	59
LDN	2	5	17	53

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Jefferson to Main
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	16,884
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,688

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.4	60.5	58.7	52.6	61.3	61.9
MEDIUM TRUCKS	48.8	47.3	41.0	39.4	47.9	48.1
HEAVY TRUCKS	55.7	54.3	45.2	46.5	54.8	55.0
VEHICULAR NOISE	63.4	61.6	59.0	53.7	62.3	**62.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	10	30	96	303
LDN	9	27	85	269

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Main to Spring
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	20,047
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,005

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.1	61.2	59.4	53.4	62.0	62.6
MEDIUM TRUCKS	49.6	48.1	41.7	40.2	48.6	48.9
HEAVY TRUCKS	56.4	55.0	46.0	47.2	55.6	55.7
VEHICULAR NOISE	64.1	62.3	59.7	54.5	63.1	**63.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	11	36	114	360
LDN	10	32	101	320

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Spring to Maple St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	17,063
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,706

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.9	61.0	59.2	53.1	61.8	62.4
MEDIUM TRUCKS	49.3	47.8	41.5	39.9	48.4	48.6
HEAVY TRUCKS	56.2	54.8	45.7	47.0	55.3	55.5
VEHICULAR NOISE	63.9	62.1	59.5	54.2	62.8	**63.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	11	34	108	340
LDN	10	30	96	302

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Maple St to Beech
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	17,162
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,716

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.6	60.7	58.9	52.9	61.5	62.1
MEDIUM TRUCKS	49.1	47.6	41.2	39.7	48.1	48.4
HEAVY TRUCKS	55.9	54.5	45.5	46.7	55.1	55.2
VEHICULAR NOISE	63.6	61.8	59.2	54.0	62.6	**63.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	10	32	101	320
LDN	9	28	90	285

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Beech to Chestnut St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	21,305
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	30
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,131

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	47.8	- -
MEDIUM TRUCKS=	4.00	47.7	- -
HEAVY TRUCKS =	8.01	47.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.5	61.6	59.9	53.8	62.4	63.0
MEDIUM TRUCKS	50.0	48.5	42.2	40.6	49.1	49.3
HEAVY TRUCKS	56.9	55.5	46.4	47.7	56.0	56.2
VEHICULAR NOISE	64.5	62.7	60.1	54.9	63.5	**64.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	40	126	398
LDN	11	35	112	353

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Broadway
SEGMENT Chestnut St to Woodside Rd (SR-84)
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,386
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	22
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,239

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.9	- -
MEDIUM TRUCKS=	4.00	48.8	- -
HEAVY TRUCKS =	8.01	48.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	63.7	61.8	60.0	53.9	62.6	63.2
MEDIUM TRUCKS	50.1	48.6	42.3	40.7	49.2	49.4
HEAVY TRUCKS	57.0	55.6	46.5	47.8	56.1	56.3
VEHICULAR NOISE	64.7	62.9	60.3	55.0	63.6	**64.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	41	129	409
LDN	11	36	115	363

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Maple St
SEGMENT Veterans Blvd to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	859
SPEED =	20
PK HR % =	10
NEAR LANE/FAR LANE DIST =	10
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	86

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.8	- -
MEDIUM TRUCKS=	4.00	49.8	- -
HEAVY TRUCKS =	8.01	49.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	46.6	44.7	43.0	36.9	45.5	46.1
MEDIUM TRUCKS	34.4	32.9	26.5	25.0	33.4	33.7
HEAVY TRUCKS	41.9	40.4	31.4	32.7	41.0	41.1
VEHICULAR NOISE	48.1	46.3	43.3	38.5	47.0	**47.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	3	9
LDN	0	1	3	8

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Maple St
SEGMENT Broadway to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	95
SPEED =	20
PK HR % =	10
NEAR LANE/FAR LANE DIST =	12
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	9

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.7	- -
MEDIUM TRUCKS=	4.00	49.6	- -
HEAVY TRUCKS =	8.01	49.7	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	37.0	35.1	33.4	27.3	36.0	36.6
MEDIUM TRUCKS	24.8	23.3	16.9	15.4	23.9	24.1
HEAVY TRUCKS	32.3	30.9	21.8	23.1	31.4	31.6
VEHICULAR NOISE	38.5	36.7	33.8	28.9	37.5	**37.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	0	0	1
LDN	0	0	0	1

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Veterans Blvd to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	910
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	45
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	91

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.8	- -
MEDIUM TRUCKS=	4.00	44.7	- -
HEAVY TRUCKS =	8.01	44.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	50.1	48.2	46.5	40.4	49.0	49.6
MEDIUM TRUCKS	36.6	35.1	28.7	27.2	35.7	35.9
HEAVY TRUCKS	43.5	42.1	33.0	34.3	42.6	42.7
VEHICULAR NOISE	51.1	49.3	46.7	41.5	50.1	**50.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	2	6	18
LDN	1	2	5	16

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Broadway to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	2,241
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	25
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	224

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.5	- -
MEDIUM TRUCKS=	4.00	48.4	- -
HEAVY TRUCKS =	8.01	48.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.7	51.8	50.0	44.0	52.6	53.2
MEDIUM TRUCKS	40.2	38.7	32.3	30.8	39.2	39.5
HEAVY TRUCKS	47.0	45.6	36.6	37.8	46.2	46.3
VEHICULAR NOISE	54.7	52.9	50.3	45.1	53.6	**54.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	1	4	13	41
LDN	1	4	12	37

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Chestnut St
SEGMENT Middlefield to Main St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	416
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	42

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	46.4	44.5	42.7	36.7	45.3	45.9
MEDIUM TRUCKS	32.9	31.3	25.0	23.4	31.9	32.1
HEAVY TRUCKS	39.7	38.3	29.3	30.5	38.9	39.0
VEHICULAR NOISE	47.4	45.6	43.0	37.8	46.3	**46.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	0	1	2	8
LDN	0	1	2	7

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Veterans Blvd to Middlefield
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	10,398
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	21
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,040

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.0	- -
MEDIUM TRUCKS=	4.00	48.9	- -
HEAVY TRUCKS =	8.01	49.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.3	58.4	56.7	50.6	59.2	59.8
MEDIUM TRUCKS	46.8	45.3	38.9	37.4	45.8	46.1
HEAVY TRUCKS	53.7	52.2	43.2	44.4	52.8	52.9
VEHICULAR NOISE	61.3	59.5	56.9	51.7	60.3	**60.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	6	19	60	189
LDN	5	17	53	168

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Main St
SEGMENT Middlefield to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	3,616
SPEED =	25
PK HR % =	10
NEAR LANE/FAR LANE DIST =	20
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	362

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.993
MEDIUM TRUCKS	0.848	0.049	0.103	0.003
HEAVY TRUCKS	0.865	0.027	0.108	0.004

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	49.1	- -
MEDIUM TRUCKS=	4.00	49.0	- -
HEAVY TRUCKS =	8.01	49.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	55.7	53.8	52.1	46.0	54.6	55.2
MEDIUM TRUCKS	42.2	40.7	34.3	32.8	41.2	41.5
HEAVY TRUCKS	49.1	47.6	38.6	39.9	48.2	48.3
VEHICULAR NOISE	56.7	54.9	52.3	47.1	55.7	**56.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	2	7	21	66
LDN	2	6	18	58

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT US Hwy 101 to Broadway
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	46,737
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	67
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,674

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	37.2	- -
MEDIUM TRUCKS=	4.00	37.1	- -
HEAVY TRUCKS =	8.01	37.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.5	62.4	71.0	71.6
MEDIUM TRUCKS	64.7	63.2	56.9	55.3	63.8	64.0
HEAVY TRUCKS	67.5	66.1	57.0	58.3	66.6	66.8
VEHICULAR NOISE	74.0	72.2	69.0	64.4	72.9	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	109	346	1094	3460
LDN	99	312	986	3116

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Broadway to Bay Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	63,455
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	69
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,346

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	36.3	- -
MEDIUM TRUCKS=	4.00	36.2	- -
HEAVY TRUCKS =	8.01	36.3	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.6	71.7	69.9	63.9	72.5	73.1
MEDIUM TRUCKS	66.2	64.6	58.3	56.7	65.2	65.4
HEAVY TRUCKS	68.9	67.5	58.5	59.7	68.1	68.2
VEHICULAR NOISE	75.4	73.7	70.5	65.8	74.4	**74.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	**70 dBA**	**65 dBA**	**60 dBA**	**55 dBA**
CNEL	152	482	1523	4817
LDN	137	434	1372	4339

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Bay Rd to Spring St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	61,397
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	64
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	6,140

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	38.5	- -
MEDIUM TRUCKS=	4.00	38.4	- -
HEAVY TRUCKS =	8.01	38.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.2	71.3	69.5	63.5	72.1	72.7
MEDIUM TRUCKS	65.8	64.2	57.9	56.3	64.8	65.0
HEAVY TRUCKS	68.5	67.1	58.1	59.3	67.7	67.8
VEHICULAR NOISE	75.0	73.3	70.1	65.4	74.0	**74.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	139	439	1389	4392
LDN	125	396	1251	3956

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Spring St to Middlefield Rd
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	51,654
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,165

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.1	70.2	68.4	62.3	71.0	71.6
MEDIUM TRUCKS	64.6	63.1	56.8	55.2	63.7	63.9
HEAVY TRUCKS	67.4	66.0	57.0	58.2	66.6	66.7
VEHICULAR NOISE	73.9	72.2	69.0	64.3	72.9	**73.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	108	340	1075	3401
LDN	97	306	969	3063

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Middlefield Rd to El Camino Real
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	54,606
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	5,461

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	72.3	70.4	68.6	62.6	71.2	71.8
MEDIUM TRUCKS	64.9	63.4	57.0	55.5	63.9	64.2
HEAVY TRUCKS	67.7	66.2	57.2	58.5	66.8	66.9
VEHICULAR NOISE	74.1	72.4	69.2	64.6	73.1	**73.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	114	360	1137	3595
LDN	102	324	1024	3239

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT El Camino Real to Hess
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	43,504
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	55
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,350

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	41.9	- -
MEDIUM TRUCKS=	4.00	41.8	- -
HEAVY TRUCKS =	8.01	41.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.3	69.4	67.7	61.6	70.2	70.8
MEDIUM TRUCKS	63.9	62.4	56.0	54.5	62.9	63.2
HEAVY TRUCKS	66.7	65.3	56.2	57.5	65.8	65.9
VEHICULAR NOISE	73.2	71.4	68.2	63.6	72.1	**72.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	91	286	906	2864
LDN	82	258	816	2580

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Hess to Hudson St
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	46,944
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,694

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.5	69.6	67.8	61.8	70.4	71.0
MEDIUM TRUCKS	64.1	62.6	56.2	54.7	63.1	63.3
HEAVY TRUCKS	66.8	65.4	56.4	57.6	66.0	66.1
VEHICULAR NOISE	73.3	71.6	68.4	63.8	72.3	**72.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	94	298	943	2981
LDN	85	269	849	2685

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Hudson St to Gordon/Orchard
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	47,156
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	54
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,716

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	42.2	- -
MEDIUM TRUCKS=	4.00	42.1	- -
HEAVY TRUCKS =	8.01	42.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	71.6	69.7	68.0	61.9	70.5	71.1
MEDIUM TRUCKS	64.2	62.7	56.3	54.8	63.3	63.5
HEAVY TRUCKS	67.0	65.6	56.5	57.8	66.1	66.3
VEHICULAR NOISE	73.5	71.7	68.5	63.9	72.4	**72.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	97	308	974	3081
LDN	88	278	878	2775

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Gordon/Orchard to Kentfield
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	40,949
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,095

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.9	69.0	67.2	61.2	69.8	70.4
MEDIUM TRUCKS	63.5	62.0	55.6	54.1	62.5	62.8
HEAVY TRUCKS	66.3	64.8	55.8	57.0	65.4	65.5
VEHICULAR NOISE	72.7	71.0	67.8	63.2	71.7	**72.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	82	260	822	2600
LDN	74	234	741	2342

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: Redwood City Housing Update Noise Study
ROADWAY Woodside Rd (SR-84)
SEGMENT Massachusetts Ave to Sequoia
LOCATION: City of Redwood City, CA SCENARIO: Cumulative Plus Project

JOB #: 0314-2022-01
DATE: 16-Aug-22
ENGINEER: C Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,731
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	75
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,773

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.129	0.096	0.971
MEDIUM TRUCKS	0.848	0.049	0.103	0.019
HEAVY TRUCKS	0.865	0.027	0.108	0.011

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	33.2	- -
MEDIUM TRUCKS=	4.00	33.1	- -
HEAVY TRUCKS =	8.01	33.2	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.4	71.5	69.7	63.7	72.3	72.9
MEDIUM TRUCKS	65.2	63.7	57.3	55.8	64.2	64.5
HEAVY TRUCKS	67.6	66.2	57.1	58.4	66.7	66.9
VEHICULAR NOISE	74.9	73.1	70.2	65.3	73.9	**74.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	136	429	1355	4286
LDN	121	384	1215	3841

Redwood City Focused General Plan Update Project

Appendix F: Transportation Impact Analysis

Redwood City Focused General Plan Update: Transportation Analysis (TA)

Prepared for:
City of Redwood City and
MIG

November 2022

SJ21-2064

FEHR PEERS

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1. Introduction

This report presents the results of the transportation analysis (TA) conducted for the City of Redwood City Focused General Plan Update related to the Housing, Land Use, and Public Safety Element, Environmental Justice goals, policies, and programs, and Associated Zoning and Municipal Code Amendments. The purpose of this TA is to identify potentially significant adverse impacts of the proposed Project on the surrounding transportation system and to recommend mitigation measures, where applicable, for inclusion in the Environmental Impact Report (EIR)[1]. This report was prepared for California Environmental Quality Act (CEQA) clearance purposes and to meet requirements from the *Redwood City Transportation Analysis Manual* (TAM) (July 21, 2020)[2], which adopted vehicle miles traveled (VMT) as the primary metric for transportation studies under CEQA.

This introduction chapter discusses the proposed Project description, analysis scenarios, and report organization.

1.1 Project Description

The proposed Redwood City Focused General Plan Update (the "Project") includes an amendment of the Redwood City General Plan to accommodate growth in housing required to meet the City's Regional Housing Needs Allocation or "RHNA." Redwood City is located within the geographic boundary of San Mateo County bordered by the cities of Menlo Park, Atherton, Woodside, San Carlos, Foster City, and unincorporated land. Regional access is provided by Highway 101 (US 101), Interstate 280 (I-280), State Route 84 (SR 84, also known as Woodside Road), and SR 82 (also known as El Camino Real). **Figure 1-1** shows the proposed Project planning area, which includes both the City boundary and the Redwood City sphere-of-influence, and the surrounding transportation network.

1.1.1 Proposed Land Uses

The proposed Project consists of new residential land uses distributed throughout the proposed Project planning area. As shown in **Table 1-1**, the proposed Project would provide for a net increase of 11,277 residential units. This includes an additional 13,078 multi-family units and 506 accessory dwelling units (ADUs), and a decrease of 2,307 single-family units within the associated planning areas.

[1] VMT refers to "Vehicle Miles Traveled," a metric that accounts for the number of vehicle trips generated plus the length or distance of those trips. This report uses project-generated VMT and boundary VMT metrics for specific geographic areas, which are defined in **Chapter 4**.

[2] *Redwood City Transportation Analysis Manual* (TAM) (July 21, 2020). Available online at: https://www.redwoodcity.org/home/showpublisheddocument?id=22106

Table 1-1: Proposed Project Land Use Summary

Redwood City Change in Housing Units			
Single-Family Units	Multi-Family Units	Accessory Dwelling Units (ADUs)	Total Net New Residential Units
-2,307	+13,078	+506	+11,277

Fehr & Peers, 2022.

1.1.2 Proposed Transportation Changes

The proposed Project does not include changes to the roadway, transit, pedestrian, or bicycle transportation network. However, a local transportation analysis (LTA) report will be prepared as a standalone document to provide additional information regarding vehicle, transit, bicycle, and pedestrian network operations and constraints consistent with the City's TAM. The separate LTA is prepared for General Plan and the City/County Association of Governments (C/CAG) of San Mateo County Congestion Management Plan (CMP) consistency purposes and is not prepared for CEQA purposes.

1.2 Analysis Scenarios

The VMT analysis was conducted for a typical weekday under the following scenarios:

Scenario 1: *Baseline Conditions* – The most current version of the baseline Year 2015 C/CAG-VTA Model is used to determine the baseline home-based VMT per resident for the traffic analysis zones (TAZs) comprising the Project planning areas. The baseline Year 2015 C/CAG-VTA Model was updated as part of the Downtown Precise Plan (DTPP) General Plan Amendment (GPA) projects (Transit District Amendments and Plan-wide Amendments) for the entire Downtown Precise Plan (DTPP) area to reflect Year 2021 development conditions. All other model inputs were assumed to be consistent with the current baseline Year 2015 C/CAG-VTA Model assumptions.

Scenario 2: *Cumulative (2040) without Project Conditions* – The most current version of the Year 2040 C/CAG-VTA Model is used to determine countywide daily home-based VMT per resident and Redwood City (including sphere-of-influence) boundary daily VMT per service population. The cumulative land use information was adjusted within Redwood City to reflect the land use growth and transportation network adjustments from the DTPP General Plan Amendment (GPA) projects.[3]

[3] The DTPP GPA projects (Transit District Amendments and Plan-wide Amendments) included preliminary assumptions for the City's recent Regional Housing Needs Allocation (RHNA), which will be superseded by the proposed Project (i.e., Housing Element Update). In coordination with City staff, the following housing units were removed from the Year 2040 C/CAG-VTA Model to accurately represent the net changes in land use and population proposed by the Project:

Scenario 3: *Cumulative (2040) with Project Conditions* – Countywide daily VMT per service population and Redwood City boundary daily VMT per service population are determined using the Cumulative (2040) without Project model from Scenario 2 with the addition of the proposed land uses in the Redwood City Focused General Plan Update.

1.3 Report Organization

The remainder of this report is divided into the following chapters:

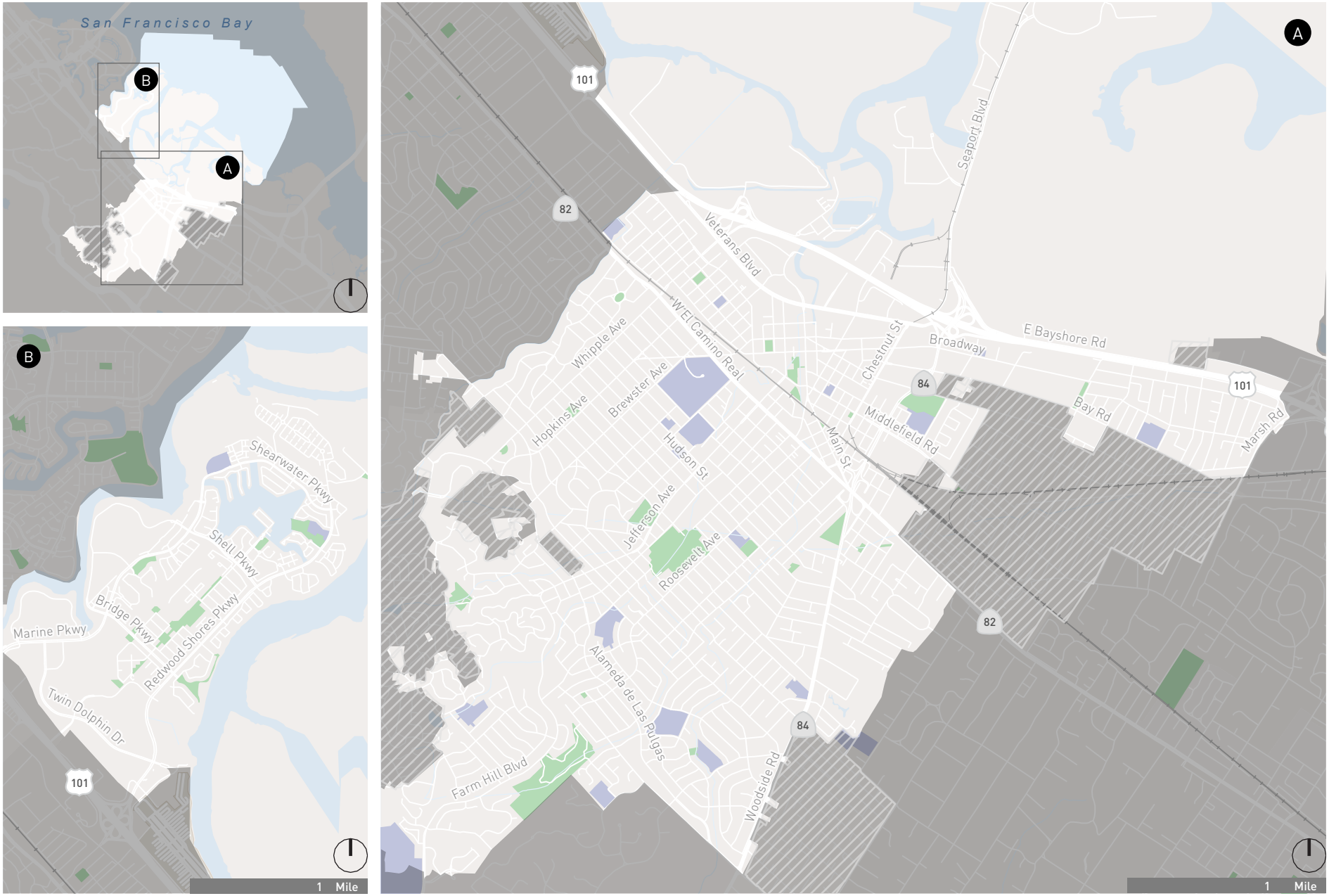
Chapter 2 – Significance Criteria and Analysis Methods lists the significance criteria used for the environmental impact analysis. This chapter also discusses the traffic forecasting methods used to estimate project-generated VMT and the proposed Project's effect on VMT (i.e., boundary method).

Chapter 3 – Existing Conditions describes the transportation system in the City, including the roadway network, existing bicycle, pedestrian, and transit facilities.

Chapter 4 – CEQA VMT Analysis evaluates the CEQA VMT analysis for the Project including the initial VMT screening, model assumptions and adjustments, and the VMT results.

Chapter 5 – Additional CEQA Transportation Impact Analysis presents the CEQA impact analysis for the Project including verification that the Project does not conflict with existing programs, plans, ordinances, or policies, increase hazards, or result in inadequate emergency access.

- Transit District Amendments: 1,100 multi-family housing units
- Plan-wide Amendments: 830 multi-family housing units



Redwood City Limits
Sphere of Influence
Parks
Schools
Railroad

Figure 1-1

Project Planning Area

2. Significance Criteria and Analysis Methods

This chapter describes the significance criteria used to identify potential transportation impacts resulting from the proposed Project.

2.1 Senate Bill (SB) 743

The operations of transportation facilities have traditionally been described with the term *level of service (LOS)*. LOS describes traffic flow from the driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. SB 743 was adopted in 2013 and directed the State of California's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts and make corresponding revisions to the *CEQA Statute & Guidelines*. Following several years of draft proposals and related public comments, OPR settled upon daily VMT as the preferred metric for assessing passenger vehicle related impacts. OPR issued revised *CEQA Statute & Guidelines* in December 2018 along with a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the CEQA Statute & Guidelines to use VMT as the new metric. Under the revised *CEQA Statute & Guidelines*, vehicle LOS will no longer be used as a determinant of transportation environmental impacts. The City has implemented SB 743 in their *Redwood City TAM*, which provides specific guidance for VMT analysis and determination of significant impacts.[4]

2.2 Thresholds of Significance

The criteria for evaluating the significance of a project's environmental impacts are based on the latest *CEQA Statute & Guidelines* as implemented by the *Redwood City TAM*. According to the current version of Appendix G (i.e., Environmental Checklist Form) of the *CEQA Statute & Guidelines*, the Project would result in a significant transportation impact if it meets any of the significance criteria below:

1. Plan Conflicts: Conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.
2. VMT Impacts: Conflicts or is inconsistent with CEQA Guidelines section 15064.3, subdivision (b) (i.e., the Project would result in a VMT-related impact).
3. Safety and Hazard Impact: Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Emergency Access Impact: Results in inadequate emergency vehicle access.

[4] While LOS is no longer used to determine CEQA impacts, Redwood City and the City/County Association of Governments (C/CAG) of San Mateo County still require LOS analysis for select intersections under their development approval processes.

The impact criteria are discussed below and the assessment for each of the CEQA criteria is discussed in this report. Specifically, threshold 2, which relates to the VMT impact assessment, is discussed in **Chapter 4** (CEQA VMT Analysis), and thresholds 1, 3, and 4 are discussed in **Chapter 5** (Additional CEQA Transportation Analysis). The City's VMT impact criteria as outlined in the *Redwood City TAM* is summarized below and used to evaluate program-level impacts of the Project.

2.2.1 Plan Conflict Impact

Based on the City's guidelines, the Project would cause a significant transportation impact if an element of the Project conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities. Relevant policy document include:

- *Redwood City General Plan* (2010),
- *RWCmoves* (2018),
- *Citywide Bicycle & Pedestrian Master Plan and Vision Zero Action Plan* (*RWC Walk Bike Thrive*) (June 2022),
- *San Mateo Countywide Transportation Plan 2040* (2017),
- *San Mateo County Comprehensive Bicycle and Pedestrian Plan* (2021).

2.2.2 VMT Impacts

The VMT analysis methodology utilizes the procedures and thresholds of significance in the adopted *Redwood City TAM*, which are summarized below.[5]

2.2.2.1 CEQA Analysis Project Screening

In the first step, the *Redwood City TAM* applies specific screening criteria for projects presumed to have a less-than-significant impact, eliminating the need to conduct a VMT analysis for CEQA transportation purposes. The *Redwood City TAM* includes a detailed screening criteria related to Transit Priority Areas (TPAs), affordable housing projects, small projects, locally-serving public facilities, neighborhood-serving retail projects, and childcare projects, as well as projects that are in a Transit Priority Area (TPA). Each component of a mixed-use project is considered separately and each of the project's individual land uses is compared to the screening criteria.

Projects that do not meet these potential screening approaches would require a VMT assessment. Specifically, a VMT analysis that evaluates the project-generated VMT and potentially the project's long-term effect on VMT using boundary VMT would be required as specified in the *Redwood City TAM*. For illustrative purposes, **Figure 2-1** depicts both project-generated VMT and boundary VMT. Below is a summary of the City's impact criteria for project-generated and boundary method VMT.

[5] An induced VMT threshold is not presented because the Redwood City Focused General Plan Update is not adding roadway capacity.

2.2.2.2 Project-Generated VMT

Since the proposed Project only includes residential land uses, the project-generated VMT estimates for the Redwood City Focused General Plan Update would be evaluated using the residential threshold in the *Redwood City TAM*. The residential VMT threshold of 10.5 home-based VMT per resident identified in the *Redwood City TAM* was developed based on model runs using the base year 2015 C/CAG-VTA Model. As noted under the ***Analysis Scenarios*** section, the 2015 C/CAG-VTA Model was updated as part of the Downtown Precise Plan (DTPP) General Plan Amendment (GPA) projects to reflect Year 2021 development conditions in the downtown. Since these baseline model land use updates change countywide VMT, the residential VMT threshold was re-calculated to present a true comparison to baseline conditions. Based on the updated 2015 C/CAG-VTA Model used for this analysis, a significant VMT impact would occur if the citywide home-based VMT per resident for Cumulative (2040) with Project Conditions would exceed a level of 15% below the countywide baseline home-based VMT per resident rate. The threshold applied in this analysis is 15% below the existing countywide VMT rate of 13.8, which as shown in **Table 2-1**, is 11.7 (Existing Conditions San Mateo County home-based VMT per resident of 13.8 x 85% = **11.7**).

Table 2-1: Project Generated VMT Thresholds Based on Existing Conditions for the San Mateo County

Item	Amount[1]
San Mateo County Home-Based VMT	
Home-Based VMT (A)	10,518,170
Resident Population (B)	764,920
Home-Based VMT per Resident (A/B=C)	13.8
Home-Based VMT per Resident Threshold (C*85%=H)	**11.7**

Notes:
1. Rounded resident population and VMT to nearest 10.

Source: Fehr & Peers, 2022.

Therefore, the Project would cause a significant project-generated VMT impact if:

- The citywide home-based VMT per resident under Cumulative (2040) with Project Conditions is greater than **11.7**.

2.2.2.3 Project's Effect on VMT (Using Boundary VMT)

The Project would result in a significant impact on VMT under Cumulative (2040) Conditions if growth in the plan area increases total citywide boundary VMT per service population compared to Cumulative (2040) without Project Conditions.

The impact threshold for the Project's effect on VMT is the Redwood City boundary VMT per service population, or 10.3 (refer to **Table 2-2** for how the number is calculated). The boundary VMT uses the



Redwood City boundary to evaluate the Project's effects on VMT because the Project effects are likely to be localized near Redwood City.

Therefore, the Project would result in a significant impact on VMT if:

- The Project causes the cumulative citywide daily boundary VMT per service population to be greater than **10.3** miles.

Table 2-2: Project's Effect on VMT (Using Boundary VMT) Threshold Based on Cumulative (2040) without Project Conditions for Redwood City

Item	Amount[1]
Redwood City[2]	
Boundary VMT (A)	2,398,880
Service Population (B)[3]	233,590
Boundary VMT per Service Population (A/B=C)	10.3
Boundary VMT per Service Population Threshold (C)	**10.3**

Notes:
1. Rounded resident population, employee population, service population and VMT to nearest 10.
2. Includes city boundary and sphere-of-influence.
3. Service population is defined as the sum of all employees and residents.

Source: Fehr & Peers, 2022.

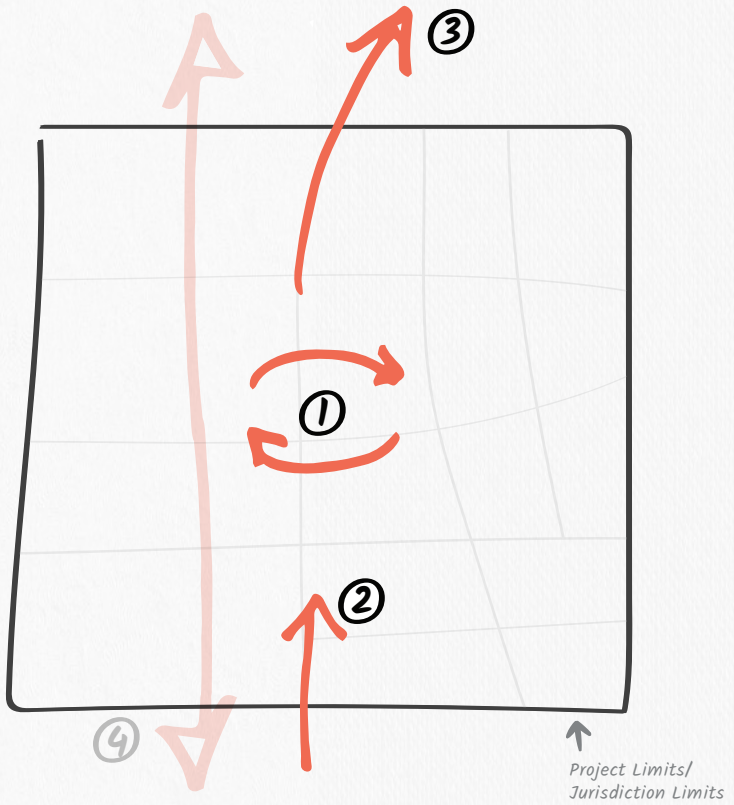
2.2.3 Safety and Hazard Impact

The Project would result in a significant impact if it substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Applicable design standards for this Project are included in *RWCmoves* (July 2018), *RWC Walk Bike Thrive* (2022), and the *Street Design Criteria* included in the City's 2019 Engineering Standards, all of which include design specifications to ensure safe and efficient travel of vehicles, bicycles, pedestrians, and transit vehicles. Using these plans as a guide, significant impacts related to safety and hazards would occur if the Project, or an element of the Project, conflicts with policies related to street design adopted by Redwood City.

2.2.4 Emergency Access Impact

An emergency access impact is considered significant if implementation of the Project would provide inadequate access to accommodate emergency vehicles. Specifically, assessment should determine if a project has the potential to impact emergency vehicle access by creating conditions that would substantially affect the ability of drivers to yield the right-of-way to emergency vehicles or preclude the ability of emergency vehicles to access streets within the Project planning area.

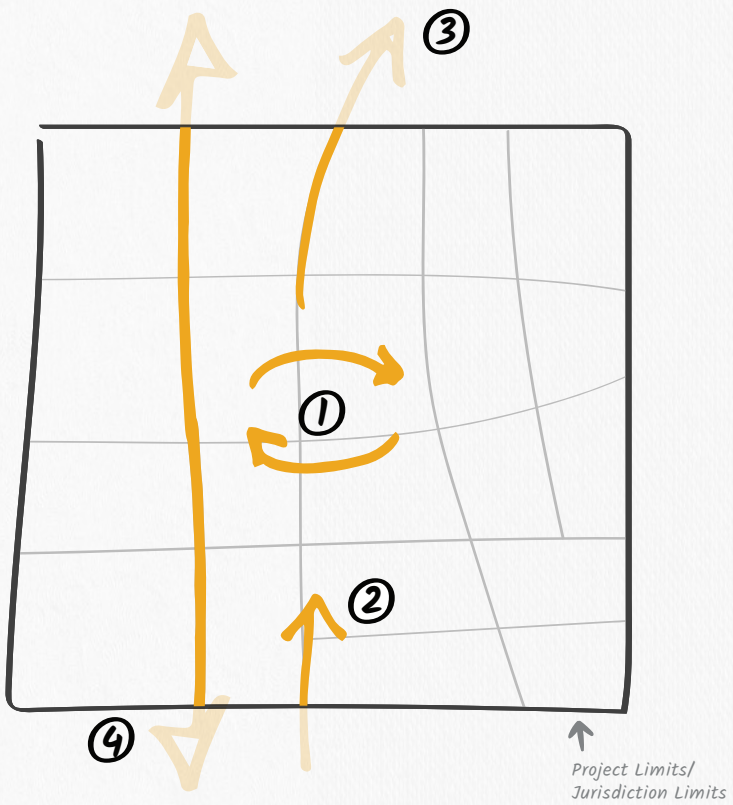
Project Generated VMT



① 2x Internal to Internal (2xII) VMT
② External to Internal (XI) VMT
③ Internal to External (IX) VMT
④ External to External (XX) VMT

Notes: External to External (XX) trips are excluded from this VMT metric. Adjustments to project generated VMT made to include the full length of trips that leave the jurisdiction to capture inter-jurisdiction travel.

Project Effect on VMT
(Boundary VMT)



① Internal to Internal VMT
② External to Internal (XI) VMT
③ Internal to External (IX) VMT
④ External to External (XX) VMT

Notes: Boundary VMT is all the VMT within the jurisdictional boundary. Transparent portions of arrows 2, 3 and 4 are not included in the VMT metric.

Figure 2-1

Measuring Vehicle Miles Traveled (VMT)

2.3 Methods of Analysis

The most common method of calculating the VMT metrics is through a travel forecasting model. A travel forecasting model uses specialized software and is designed to reflect the interactions between different land use and roadway elements in a large area. The San Mateo City and County Association of Government (C/CAG) and Santa Clara Valley Transportation Authority (VTA) Bi-County transportation model ("C/CAG-VTA Model") was used to prepare daily VMT estimates. C/CAG provided the most recent copies of the Year 2015 and Year 2040 C/CAG-VTA models for use in this analysis. The VTA Year 2015 and Year 2040 C/CAG-VTA models were last updated in 2020 to include centroid connectors[6] and travel outside of the model area and are the best and most recent tools currently available.[7] The Year 2015 C/CAG-VTA Model was used to develop VMT estimates for Baseline Conditions, and the Year 2040 C/CAG-VTA Model was used to develop VMT forecasts for Cumulative (2040) Conditions and includes projected growth to Year 2040. Roadway segment volumes were extracted from the C/CAG-VTA Model for use as inputs for the air quality, energy consumption, and greenhouse gas (GHG) analyses but are not directly referenced in this report. To understand the VMT forecasts and VMT impact analysis, this section defines important technical terms and analysis methods.

2.3.1 C/CAG-VTA Model Documentation

The C/CAG-VTA Model includes the regional roadways and major arterials of the nine-county Bay Area, the Association of Monterey Bay Area Governments (AMBAG) region (Santa Cruz County, Monterey County and San Benito County), and portions of the San Joaquin (Central) Valley. The model features additional transportation network detail and refined transportation analysis zones (TAZs)[8] for San Mateo County and Santa Clara County. The C/CAG-VTA Model land use inputs are based on Association of Bay Area Governments (ABAG) 2017 land use projections (*Plan Bay Area 2040* land use projections), 2010 Census socioeconomic data (with some additional refinements in 2019), and a future regional transportation infrastructure consistent with *Plan Bay Area 2040* (July 2017).

The TAZ size influences the types of streets vehicle traffic is typically assigned to. For the C/CAG-VTA Model, an arterial or minor arterial is the lowest street level that traffic is assigned to because the TAZ structure in Redwood City has moderate detail. The C/CAG-VTA Model has a mode share model that can be used to express changes in mode share.

[6] Centroids are points that identify the center of activity within a transportation analysis zone and connect that zone to the transportation network. A centroid connector is a feature of a travel model network that connects the centroid to the network and represents the local streets within a zone.

[7] Updates to the C/CAG-VTA Model in 2020 did not include any updates to the volume assumptions and the Year 2015 C/CAG-VTA Model is reflective of the year 2015 conditions (i.e., pre-COVID-19).

[8] Transportation analysis zones, also referred to as TAZs, are small geographic areas within the VTA Model. As defined by *NCHRP Report 716, Travel Demand Forecasting: Parameters and Techniques,* TRB, 2012, "TAZ boundaries are usually major roadways, jurisdictional borders, and geographic boundaries and are defined by homogeneous land uses to the extent possible."

The C/CAG-VTA Model has four time periods to address travel during congested morning and evening peak periods and uncongested mid-day and midnight time periods. During congested times, the average trip length and speed of travel change.

2.3.1.1 Model Input Adjustments

For this VMT analysis, the baseline Year 2015 C/CAG-VTA Model land use and population inputs were updated for the entire Downtown Precision Plan (DTPP) area to reflect year 2021 development conditions. The baseline Year 2015 C/CAG-VTA Model used in this analysis is consistent with baseline Year 2015 C/CAG-VTA Model used in the analyses prepared for the DTPP GPA projects. All other model inputs were assumed to be consistent with the current Year 2015 C/CAG-VTA Model.

In addition, the Year 2040 C/CAG-VTA Model was updated to reflect only the land use growth and transportation network adjustments that are present in the DTPP GPA projects (Transit District Amendments and Plan-wide Amendments). However, as part of the DTPP GPA projects, the Year 2040 C/CAG-VTA Model was updated to include preliminary assumptions for the City's recent Regional Housing Needs Allocation (RHNA), which will be superseded by the proposed Project. In coordination with City staff, the following housing units were removed from the Year 2040 C/CAG-VTA Model to accurately represent the net changes in land use and population proposed by the Project:

- Transit District Amendments: 1,100 multi-family housing units
- Plan-wide Amendments: 830 multi-family housing units

All other model inputs were assumed to be consistent with the current Year 2040 C/CAG-VTA Model.

For the Cumulative (2040) with Project Conditions scenario, the proposed land use(s) in the Project (in this case, the proposed change in housing units within the Project planning areas) are added to the Cumulative (2040) without Project Conditions model for the relevant TAZs comprising the planning areas (refer to the ***Project Description*** section for more information). The baseline Year 2015 C/CAG-VTA Model and future Year 2040 C/CAG-VTA Model input assumptions are included in **Attachment A**.

Service population is the sum of the number of employees and residents within the designated geographic area. **Table 2-3** shows the service populations used in the VMT metrics for the Redwood City and San Mateo County for the study scenarios.

Table 2-3: Service Populations by Analysis Scenario

Population	Existing Conditions [C][1]	Cumulative (2040) without Project Conditions [D][1]	Cumulative (2040) with Project Conditions [E][1]	Change [E-D][1,2]
City of Redwood City[3]				
Residents (A)	114,850	130,450	154,070	23,620
Employees (B)	66,200	103,140	103,140	0
Service Population (A + B)	181,050	233,590	257,210	23,620
San Mateo County				
Residents (A)	764,920	926,760	950,380	23,620
Employees (B)	373,710	492,120	492,120	0
Service Population (A + B)	1,138,630	1,418,880	1,442,500	23,620

Notes:
1. Numbers rounded to the nearest 10.
2. Change = Cumulative (2040) with Project Conditions column – Cumulative (2040) without Project Conditions column.
3. Includes city boundary and sphere-of-influence.

Source: Fehr & Peers, 2022.

As shown on **Table 2-3**, the proposed Project would accommodate an additional 23,620 residents over the planning year horizon.

2.3.1.2 Including Inter-regional Travel for VMT Analysis

The OPR *Technical Advisory* cites the importance of not truncating (i.e., ending or omitting a trip outside of the geographic boundary; truncating has the effect of shortening a trip to/from a destination.) trip lengths based on travel forecasting model or political boundaries:

> ***Considerations for All Projects***. *Lead agencies should not truncate any VMT analysis because of jurisdictional or other boundaries, for example, by failing to count the portion of a trip that falls outside the jurisdiction or by discounting the VMT from a trip that crosses a jurisdictional boundary. CEQA requires environmental analyses to reflect a "good faith effort at full disclosure." (CEQA Statute & Guidelines, § 15151.) Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project, the lead agency should apply them to do so. Where those VMT effects will grow over time, analyses should consider both a project's short-term and long-term effects on VMT*. (Quote from page 6 of the *Technical Advisory: On Evaluating Transportation Impacts in CEQA*, December 2018).

The C/CAG-VTA Model extends beyond the Bay Area regional boundary to the south, into the AMBAG region (e.g., Santa Cruz County, Monterey County and San Benito County), and east into San Joaquin County. However, the travel model stops at the Bay Area regional boundary and does not include inter-regional travel to Mendocino County, Lake County, Yolo County, and Merced County, which shortens the



vehicle travel to those counties. This truncation results in a lower total project-generated VMT estimate for the region and San Mateo County, and affects baseline regional or county baseline VMT values used to establish VMT thresholds.

The California statewide travel demand model (CSTDM) was used to estimate and forecast trip lengths that occur outside the VTA Model boundary. These trip lengths have been appended to the external stations[9] (refer to **Table 2-4**) and are reflected in the VMT estimates and forecasts contained in this analysis.

Table 2-4: External Station Adjustments at Bay Area Regional Boundary

External Station (Connecting County)	Distance (Miles)
SR 1 – Mendocino County	9.4
US 101 – Mendocino County	48.4
SR 29 – Lake County	21.4
I-505 – Yolo County	101.2
SR 113 – Yolo County	12.9
I-80 – Yolo County	39.2
SR 12 – San Joaquin County	No adjustment made to these external station distances because the CCAG-VTA Model area incudes San Joaquin County.
SR 4 – San Joaquin County	
I-205 – San Joaquin County	
SR 152 – Merced County	162.9
SR 25 – San Benito County	No adjustment made to these external station distances because the C/CAG-VTA Model area incudes San Benito County.
US 101 – San Benito County	
SR 152 – Santa Cruz County	No adjustment made to these external station distances because the C/CAG-VTA Model area incudes Santa Cruz County.
SR 17 – Santa Cruz County	
SR 9 – Santa Cruz County	
SR 1 – Santa Cruz County	

Notes: External station adjustments rounded to nearest tenth of a mile.
Source: California statewide travel demand model (CSTDM) was used to develop the external station adjustments.
Fehr & Peers, 2022.

2.3.2 Project-Generated VMT Estimation Method

Project-generated VMT is the VMT from all vehicle trips for all trip purposes and types. Project-generated VMT per service population is the metric used to evaluate how the city VMT changes (increases or

[9] External stations are located on the major transportation routes into and out of the C/CAG-VTA Model boundary. These stations are used to load traffic generated from and/or destined to locations outside of the C/CAG-VTA Model boundary.

decreases) between the baseline and with Project scenario, considering both VMT increases due to land use growth and VMT changes due to changes in travel behavior. Project-generated VMT values include VMT on all streets including centroid connectors and travel outside of the VTA Model area. It is calculated by summing the "VMT from" and "VMT to" a specified area, as follows:

$$Project\ Generated\ VMT = (II + IX) + (II + XI) = 2 * II + IX + XI$$

- Internal-internal (II): The full length of all trips made entirely within the geographic area limits.
- Internal-external (IX): The full length of all trips with an origin within the geographic area and destination outside of the area.
- External-internal (XI): The full length of all trips with an origin outside of the geographic area and destination within the area.

The intra-zonal VMT and VMT between traffic analysis zones, or TAZs, that are in the study area cause some double counting, which is an expected result when summing the trip end based VMT. To ensure a VMT rate is expressed properly (i.e., that the numerator and denominator include the generators of both trip ends of the VMT), the Project-generated VMT is divided by the service population (residential population and employment population), the generator of both trip ends of the VMT. The VMT estimates are also presented on a per service population basis to account for both the effects of population and/or employment growth and the effects of changes in personal travel behavior. For example, population growth may cause an increase in VMT, while travelers changing their behavior by using different travel modes or decreasing their vehicle trip lengths (such as a higher percentage of Redwood City residents working or shopping in Redwood City) would cause decreases in VMT.

2.3.3 Project's Effect on VMT Estimation Method (Using Boundary VMT)

Project's effect on VMT (also referred to as "boundary VMT") is the VMT that occurs within a selected geographic boundary (e.g., city, county, or region) by any type of vehicle. Boundary VMT captures all on-road vehicle travel on a roadway network (i.e., VMT on the centroid connectors and all other streets and freeway segments in the travel model within the physical limits of the selected geographic boundary) for any purpose and includes local trips as well as trips that pass through the area without stopping. The use of boundary VMT is a more complete evaluation of the potential effects of the proposed Project because it captures the combined effect of new VMT, shifting existing VMT to/from other jurisdictions, and/or shifts in existing traffic to alternate travel routes or modes.

An example of how a project can affect VMT is the addition of housing in a job-rich downtown. Workers in the downtown that have limited housing options must travel a greater distance between their home and work. Adding the housing in downtown will shorten many of the home-to-work trips and reduce the VMT to/from the downtown. While the new housing itself will "generate" more daily trips, in that there will be more cars coming in and out of the housing development, it will generally attract those trips away from other residential developments located farther away. If the boundary VMT in the area served by the new residential development were to be assessed, it is likely that the total amount of driving in that area will have decreased rather than increased.



The boundary VMT (within Redwood City) per service population is used to evaluate the proposed Project's effect on VMT between the Cumulative (2040) without Project Conditions and Cumulative (2040) with Project Conditions. The boundary VMT is divided by the service population (sum of residential population and employment population) to account for the effects of population and/or employment growth and the effects of changes in personal travel behavior within the specified geographic area between scenarios.

3. Existing Conditions

This chapter describes the Existing Conditions (2020) of the roadway system, pedestrian and bicycle facilities, and transit services within Redwood City.

3.1 Existing Street System

This section describes the existing regional highway system and the local street circulation system for Redwood City. The regional highway system and street typologies described in this section are illustrated in **Figure 3-1**.

United States (US) 101, Interstate (I) 280, State Route (SR) 84, also known as Woodside Road within the City, and SR 82 (El Camino Real) provide regional access.

US 101 is a major north-south regional route that runs directly through Redwood City and serves as the primary commute route for the San Francisco Peninsula. Interchanges at Whipple Avenue, Woodside Road, and Marsh Road (Menlo Park) connect various parts of Redwood City with US 101. Located further north, interchanges at Marine Parkway/Ralston Avenue and Holly Street/Redwood Shores Parkway link US 101 to the Redwood Shores area. I-280 is located along the western edge of the city and serves as a more scenic north-south commute route compared to US 101. Interchanges at Farm Hill Boulevard, Woodside Road, and Edgewood Road provide the most direct connections to Redwood City. El Camino Real (SR 82) is a major north-south arterial roadway that travels parallel to the nearby Caltrain tracks and US 101 through Redwood City and other local roadways. Woodside Road (SR 84) runs in the east-west direction through Redwood City, providing connection with I-280, El Camino Real, and US 101, as well as other local roadways.

In Redwood City, the local street system is organized into a hierarchy of five street typologies according to the *Citywide Transportation Plan for Redwood City (RWCmoves)* (2018). Street typologies of transportation networks categorize streets by purpose, location, typical land uses to which they provide access, appropriate travel speeds, and the need to accommodate multiple travel modes and various users. The street typology network for Redwood City includes the following roadways:

- Boulevard
- Connector
- Neighborhood Main Street
- Neighborhood
- Industrial Street

Each street typology is described below.

3.1.1 Boulevard

Boulevards are major roadways that typically have four to six travel lanes (both directions combined) and accommodate larger vehicle volumes, while providing wide sidewalks and dedicated bike facilities (such as

bike lanes and cycle tracks). Creating an inviting corridor for all roadway users helps to encourage development and increases commercial activity along corridors originally developed for cars. Boulevards serve as primary routes to destinations within the community or through the City. As such, boulevards are focused on ensuring person throughput, not only for cars and trucks, but also for pedestrians and bicyclists. Examples of boulevards include El Camino Real, Veterans Boulevard, and Woodside Road.

3.1.2 Connector

This versatile street type is a true multi-purpose roadway designed to move vehicles while providing good access for people biking and walking. They provide connections to boulevards or other major through routes in the City. Connectors generally have two to three travel lanes and provide on-street bicycle facilities or on-street parking, in addition to sidewalks. As street width permits, connectors may have four travel lanes and/or provide both on-street parking and on-street bicycle facilities. Examples of connectors include Farm Hill Boulevard, Alameda de las Pulgas, Broadway Street, Whipple Avenue, Middlefield Road, Hudson Street, and Jefferson Avenue.

3.1.3 Neighborhood Main Street

Neighborhood Main Streets are where mobility related to higher density commercial and housing converge into a single corridor where people do business, live, and interact with each other. These streets are typically not used as through routes, but rather serve as destination corridors, with lower traffic speeds, higher pedestrian and bicycle volumes, and frequent turnover of on-street parking. Neighborhood Main Streets have narrower cross-sections that accommodate wider sidewalks and typically two to three travel lanes. Design is focused on providing pedestrian and bicycle access from nearby parking lots/garages and transit centers to the land uses along these streets through dedicated facilities, traffic calming, and reduced roadway crossing distances. Examples of neighborhood main streets include Bradford Street, Main Street, Marshall Street, Stambaugh Street, and Winslow Street.

3.1.4 Neighborhood Street

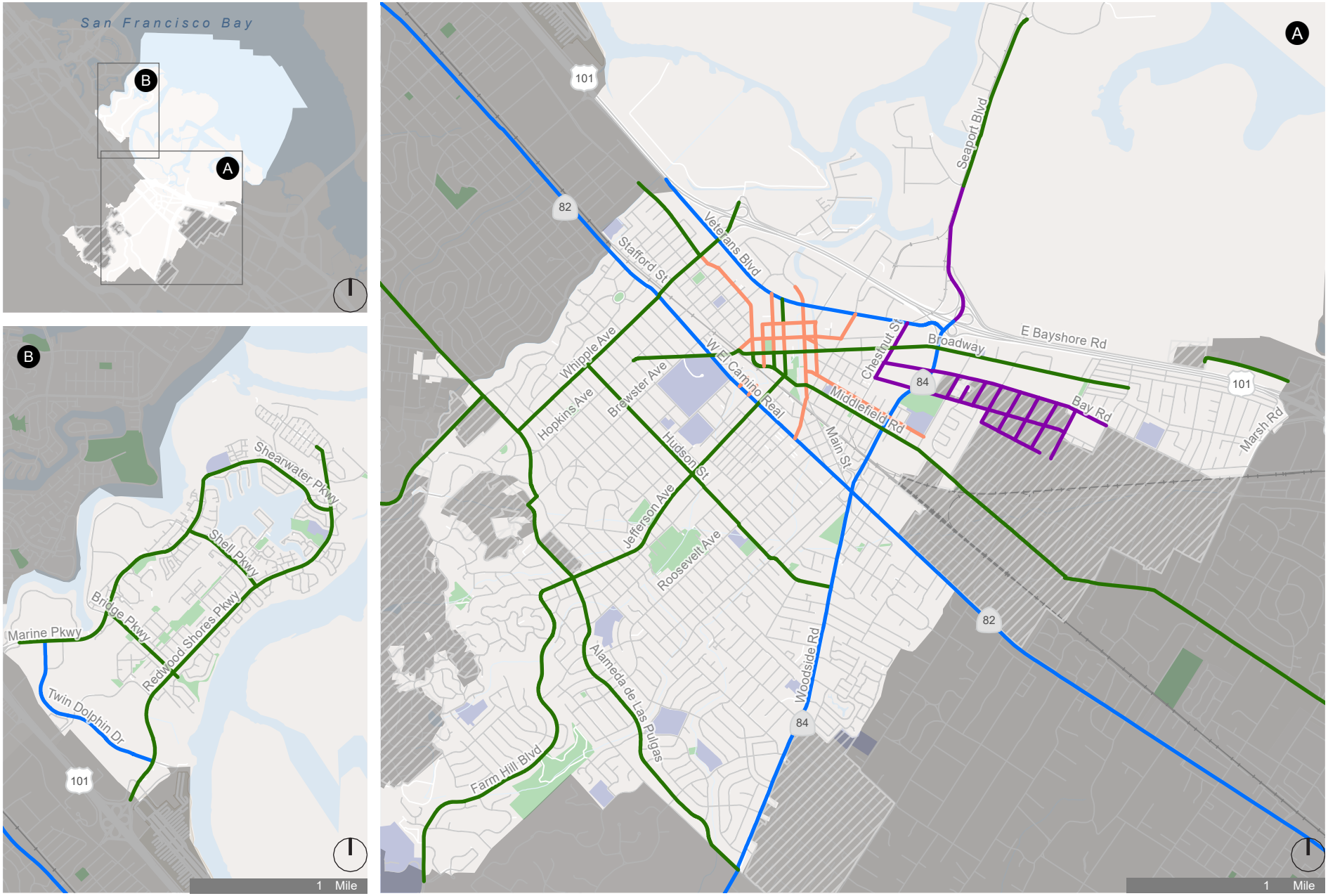
Local streets in residential neighborhoods provide mobility space for people to access their living space, recreational opportunities through play, walking, and biking; and offer public areas for neighbors to gather and interact with each other. Designed properly, a neighborhood street can become the meeting space for a group of residents. In addition, these streets should provide easy and safe access between residential and nearby commercial areas, schools, parks, and community centers. These streets typically have two travel lanes and discourage through traffic through traffic calming. Examples of neighborhood streets include Maple Street, Roosevelt Avenue, Redwood Avenue, Virginia Avenue, Hopkins Avenue, Brewster Avenue, and Arguello Street.

3.1.5 Industrial Street

Industrial corridors are designed to serve the needs of businesses that produce, construct, deliver, or repair products and require access by larger and heavier vehicles. Common vehicles often include vans, single unit trucks, and smaller semi-trucks. As industrial areas tend to be spread out, workers often access



them by private vehicle, but accommodations should be made for those choosing to walk and bike or use transit access along major corridors. Industrial streets maintain medium speeds (30 to 35 mph) and have two to four travel lanes, limited bicycle facilities, and standard pedestrian facilities. Examples of industrial streets include Seaport Boulevard, Bay Road, 2nd Avenue, and Charter Street.



Source: Redwood City

Figure 3-1

Existing Roadway System

3.2 Existing Transit Service

Transit and community shuttle service in Redwood City and surrounding communities is provided by Caltrain, SamTrans, and Commute.org. **Figure 3-2** and **Figure 3-3** summarize the existing transit facilities, bus routes, and free public shuttle networks in Redwood City.

3.2.1 Commuter Rail Service

Caltrain provides passenger rail service between San Francisco and San José with extended service to Gilroy during peak weekday commute periods. Within the City, the rail line is parallel to and north of El Camino Real. The Redwood City Caltrain Station is located downtown, between Jefferson Avenue and Broadway (and is sometimes referred to locally as the Sequoia Station). During commute periods, Caltrain offers express service ("Baby Bullet") between downtown San José and San Francisco, which allows the trip between San Francisco and San José to be made in one hour. The Baby Bullet service stops at a limited number of stations, including Redwood City. Caltrain also offers local service which serves all stations and limited-stop service which serves more stations than Baby Bullet but not all stations. All trains stop at the Redwood City Caltrain Station.

In 2015, which is the base year of the travel demand model used for the VMT analysis discussed in **Chapter 2**, the average mid-weekday passenger boardings at Redwood City Caltrain Station was around 3,230 with a system-wide ridership of just over 58,000. In 2019, the most recent pre-COVID information available, the average mid-weekday passenger boardings at the Redwood City Caltrain Station was around 4,220 with a system-wide ridership of approximately 64,000. The system-wide ridership in 2020 was roughly 25,000, and there was no specific ridership information for Redwood City Transit Center in 2020. The decrease in system-wide ridership in 2020 is due to COVID-19 and the corresponding stay-at-home orders.

3.2.2 SamTrans Bus Service

San Mateo County Transit District (SamTrans) provides bus service to Redwood City and other communities in San Mateo County. In August 2022, SamTrans implemented a series of changes to the SamTrans bus network through a project known as *Reimagine SamTrans*. Based on the latest *Reimagine SamTrans* transit service plan, fourteen SamTrans bus routes [60 (school days only), 67 (school days only), 72 (school days only), 73 (school days only), 78 (school days only), 79 (school days only), 260, 270, 278, 295, 296, 296 OWL, 397, 398] and the El Camino Real (ECR) express bus route serve Redwood City. El Camino Real, with SamTrans' ECR service, qualifies as a high-quality transit corridor since the frequency of service is 15-minutes or less during the morning and evening peak commute periods. Within the last few years, routes KX, 95, 261, 273, 274, 275, 276, 297 operating in Redwood City have been suspended or replaced due to transit service changes.

3.2.3 Community Shuttles

Commute.org manages community shuttles that are free to the public, which include the Midpoint (Redwood City Caltrain) shuttle, Redwood LIFE Caltrain (Belmont Caltrain) shuttle, Seaport Centre



(Redwood City Caltrain) shuttle, Pacific Shores shuttle, and shuttles to major employers including Electronic Arts and Oracle in Redwood Shores. Stanford University's Marguerite Shuttle RWC Line supplements Commute.org's Midpoint shuttle by providing service between the AM and PM peak commute periods. Some area employers, such as Electronic Arts, Meta, and Google, also operate private bus services for their employees that work or live in Redwood City.

Table 3-1: Existing Transit Service

Route	From	To	Weekday		Weekends	
			Operating Hours[1]	Peak Headway (minutes)	Operating Hours[1]	Peak Headway (minutes)
SamTrans Local Bus Routes						
260	San Carlos Caltrain	Alameda/ Ralston	6:00 am – 7:00 pm	60	8:00 am – 7:30 pm[2]	60[2]
270	Redwood City Transit Center (Loops)	Redwood City Transit Center (Loops)	6:30 am – 7:10 pm	60	7:30 am – 7:15 pm[2]	60[2]
278	Redwood City Transit Center	Cañada College	6:20 am – 8:45 pm	60	7:20 am – 7:20 pm	60
295	San Mateo Caltrain	Redwood City Transit Center	6:20 am – 7:00 pm	60	n/a	n/a
296	Redwood City Transit Center	Bayshore/ Donohoe	5:15 am – 10:40 pm	20	7:45 am – 8:00 pm	30
296 OWL	Redwood City Transit Center	Palo Alto Transit Center	10:00 pm – 5:20 am	30	6:40 pm – 8:30 am	60
SamTrans Express Bus Routes						
ECR	Palo Alto Transit Center	Daly City BART	4:00 am – 1:50 am	15	4:45 am – 2:25 am	15
397 OWL	San Francisco	Palo Alto Transit Center	12:45 am – 6:40 am	60	12:45 am – 6:40 am	60
398	San Francisco	Redwood City Transit Center	6:00 am – 11:30 am, 3:40 pm – 9:20 pm	Two in the morning, two in the evening	n/a	n/a
SamTrans School Routes						
60	Marine/ Island	Ralston Middle School	6:50 am - 8:00 am, 3:10 pm – 4:40 pm	One in the morning, one in the afternoon	n/a	n/a
67	Marine/ Island	Ralston Middle School	7:00 am – 7:50 am, 3:10 pm – 4:00 pm	Three in the morning, four in the afternoon	n/a	n/a
72	Northumberland/ Marlborough	Selby Lane School	7:40 am – 8:00 am, 2:40 pm – 3:00 pm	One in the morning, one in the afternoon	n/a	n/a

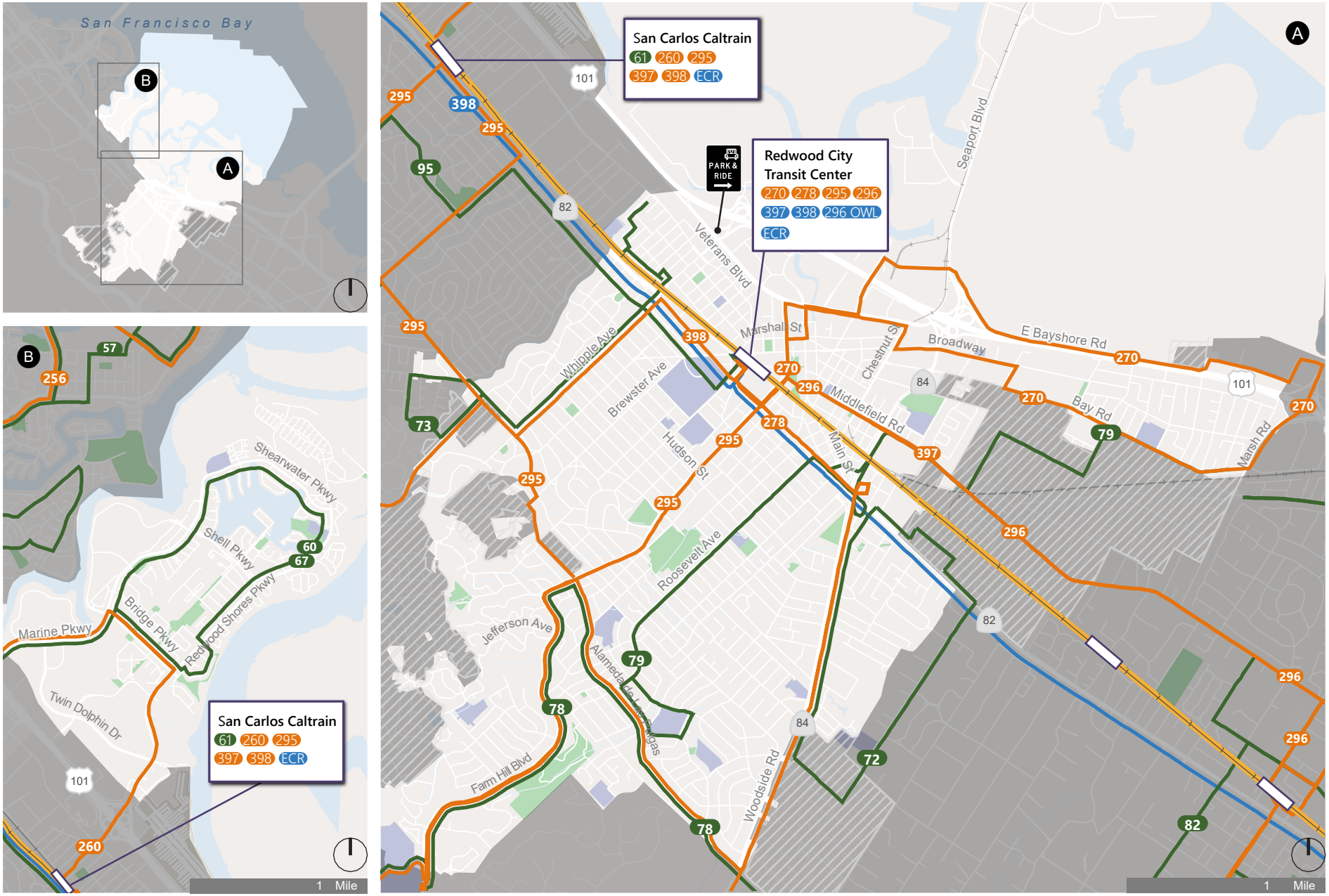


Table 3-1: Existing Transit Service

Route	From	To	Weekday		Weekends	
			Operating Hours[1]	Peak Headway (minutes)	Operating Hours[1]	Peak Headway (minutes)
73	G Street/ Industrial	Clifford Elementary School	7:40 am – 8:00 am, 3:00 pm - 3:20 pm	One in the morning, one in the afternoon	n/a	n/a
78	Cañada College	Alameda/ Hull	7:55 am – 8:15 am, 2:55 pm – 3:12 pm (Wed only), 4:00 pm – 4:17 pm (M, Tu, Th, and Fri)	One in the morning, one in the afternoon	n/a	n/a
79	Florence/17th	Kennedy Middle School	7:40 am – 8:10 am, 3:25 pm – 3:55 pm	One in the morning, one in the afternoon	n/a	n/a
Caltrain						
All routes	Gilroy/San José	San Francisco	4:20 am – 1:45 am	10	7:10 am – 1:50 am	60

Notes:
1. Operating hours rounded to the nearest 5 minutes.
2. No Sunday service.

Source: SamTrans and Caltrain, August 2022.



Source: Redwood City

Redwood City Limits
Sphere of Influence
Parks
Schools
Railroad
SamTrans School-day Only Routes
Caltrain Lines and Stations
SamTrans Routes connecting to Caltrain Stations
SamTrans Routes connecting to BART and Caltrain Stations
Park & Ride Lot

Figure 3-2

Existing Transit Network

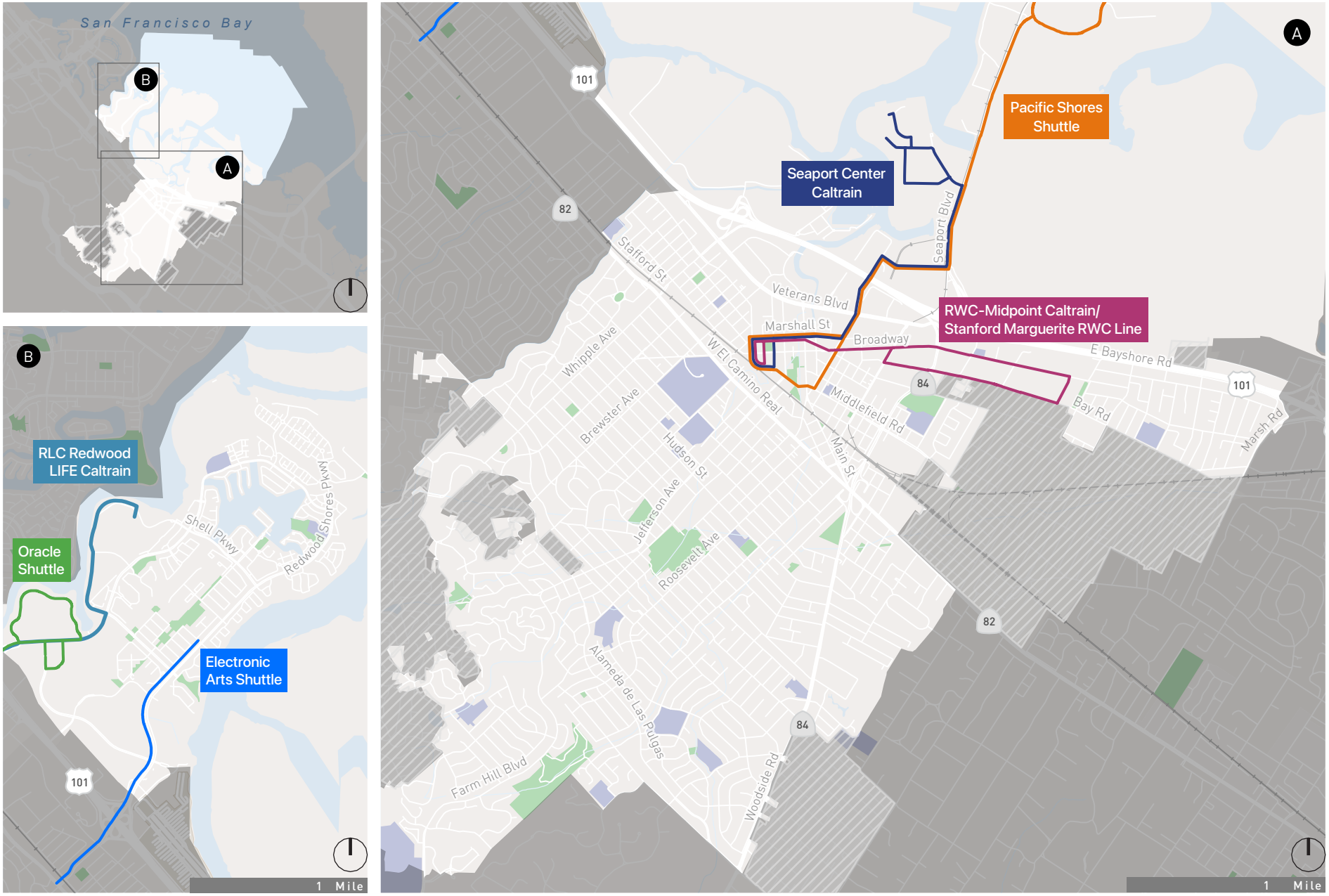


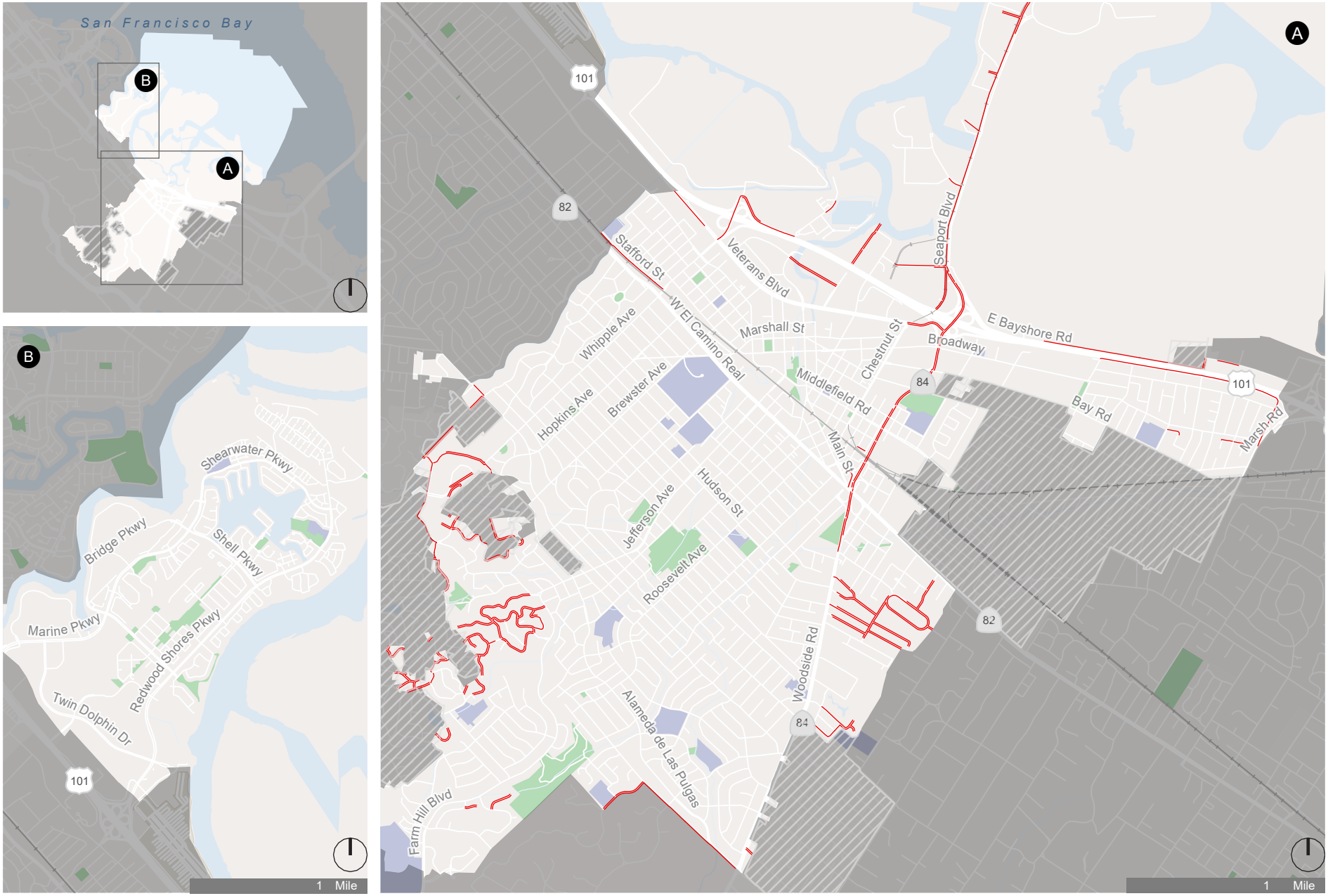
Figure 3-3

Existing Community Shuttle Network

3.3 Existing Pedestrian Facilities

Redwood City has many amenities that make walking an important and accessible mode of travel, including level terrain, temperate weather, and numerous destinations that are attractive to walkers. Pedestrian facilities in Redwood City consist of sidewalks, pathways, crosswalks, and pedestrian signals at signalized intersections, in addition to lighting, trees, and curb ramps, which also contribute to the quality of the pedestrian environment. As shown in **Figure 3-4**, numerous destinations in Redwood City are connected by a system of sidewalks and only a few roadway segments are missing sidewalks on both sides of the street.

Redwood City's downtown is a particularly attractive destination for pedestrians, with many dining, retail, and entertainment destinations. As a result, the highest levels of pedestrian activity are mostly located along Broadway in the downtown area.



Redwood City Limits
Sphere of Influence
Parks
Schools
Railroad
Sidewalk Gap

Figure 3-4

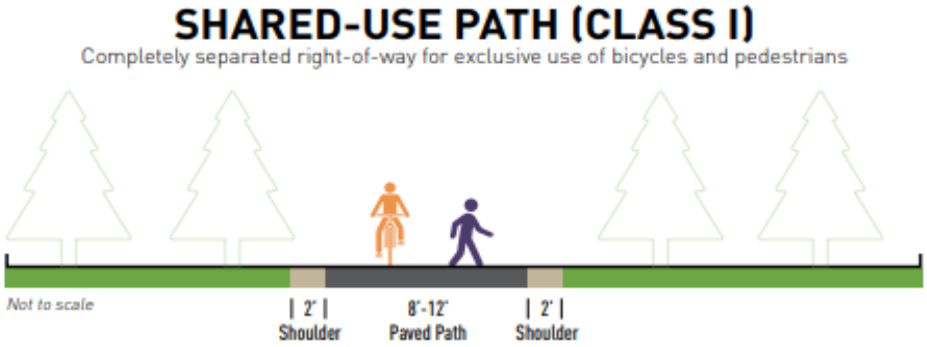
Existing Pedestrian Network

3.4 Existing Bicycle Facilities

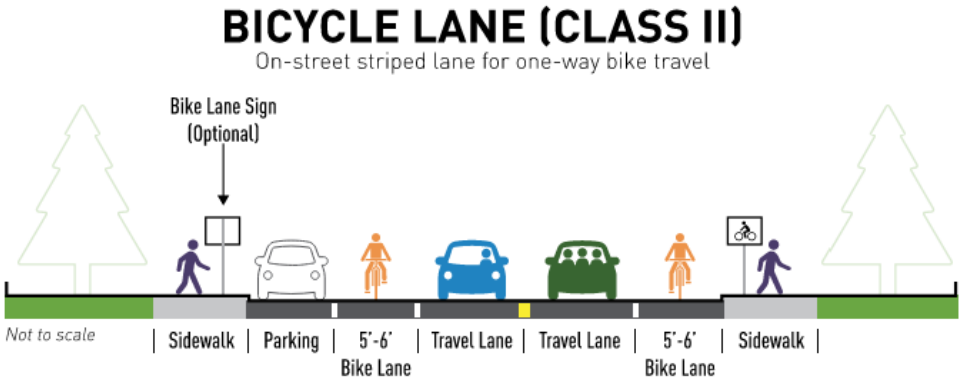
Redwood City has a bicycle facilities network that provides dedicated and shared street space for bicycling comprised of bike routes or boulevards, bike lanes, and separated bike paths or trails. **Figure 3-5** presents existing bicycle facilities in Redwood City.

Bikeway planning and design in California typically relies upon guidelines and design standards established by California Department of Transportation (Caltrans) in the *Highway Design Manual* (Chapter 1000: Bikeway Planning and Design). Redwood City uses these guidelines to define four general bikeway facility classifications, as outlined below.

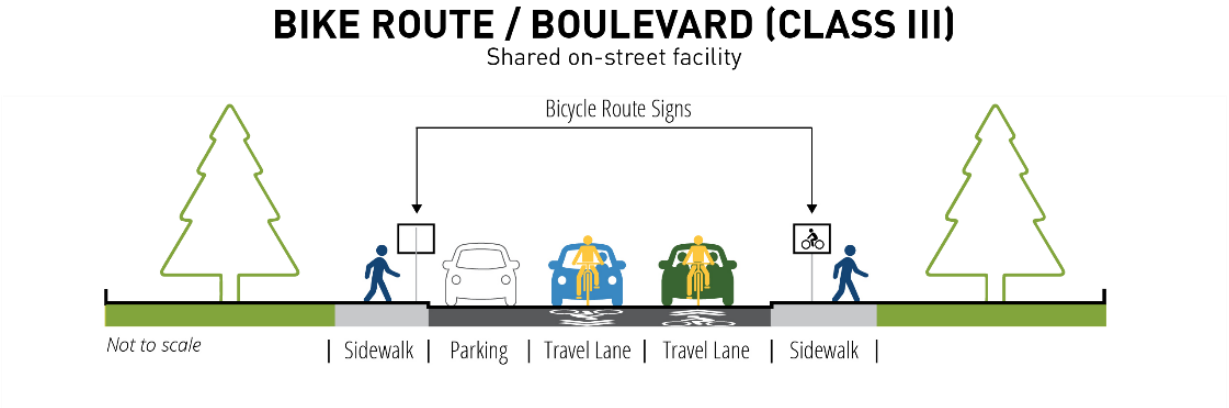
- *Class I Bikeways (Shared-Use Paths)* provide a completely separate right-of-way and are designated only for bicycle and pedestrian use. Shared-use paths serve corridors where there is enough right-of-way, or space, to allow them to be constructed or where on-street facilities are not appropriate due to vehicular volumes, speeds, or other roadway characteristics. Examples of Class I paths in Redwood City as shown in *RWC Walk Bike Thrive* (2022) are along the Bay Trail around Belmont Slough, Marine Parkway, Shearwater Parkway, Redwood Shores Parkway, and Seaport Boulevard.



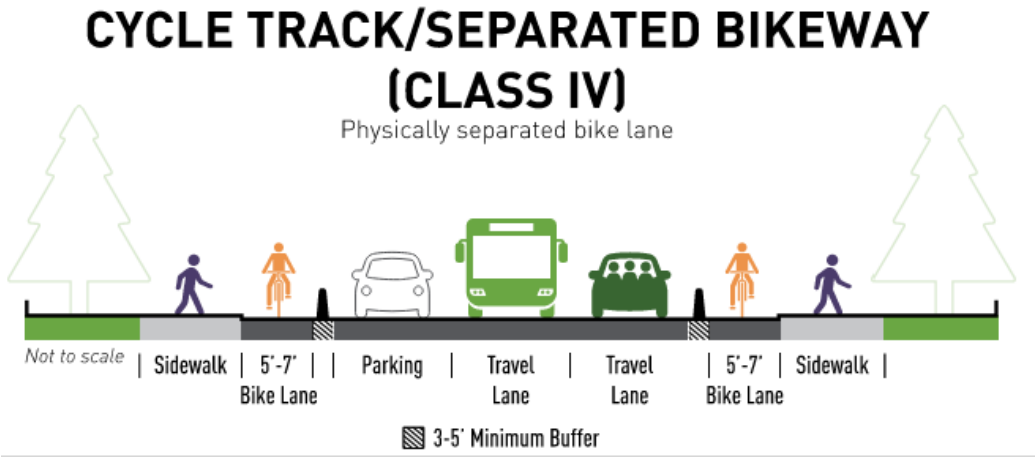
- *Class II Bikeways (Bicycle Lanes)* are dedicated lanes for bicyclists generally adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage. Bicycle lanes are typically five to six feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-traffic are permitted. Examples of Class II lanes in Redwood City as shown in *RWC Walk Bike Thrive* (2022) are on Edgewood Road, Alameda de las Pulgas south of Jefferson Avenue, Veterans Boulevard and Arguello Street.



- *Class III Bicycle Routes* are designated by signs or pavement markings for shared use with motor vehicles but have no separated bike right-of-way or lane striping. Bike routes serve either to a) provide a connection to other bicycle facilities where dedicated facilities are infeasible, or b) designate preferred routes through high-demand corridors. Examples of Class III as shown in *Walk Bik Thrive* are on Virginia Avenue, Valota Road, Charter Street, Canyon Road, Brewster Avenue, and Middlefield Road.
- *Class III Bicycle Boulevards* are "quiet" or "slow" streets, with low motor-vehicle volumes and speeds, designed to prioritize bike travel by discouraging through trips by cars. Bike boulevards share space with cars but along with traffic calming improvements that gives priority to bicyclists. Currently, the only bike boulevard in Redwood City is on Vera Avenue. Example Class III bikeways that will provide additional bicycle access in the City as shown in *RWC Walk Bike Thrive* (2022) are proposed along Bay Road south of Second Street, Elwood Street, and Vera Avenue.



- *Class IV Bikeways (Separated Bikeways)* provide a right-of-way designated exclusively for bicycle travel in a roadway and are protected from other vehicle traffic by physical barriers, including, but not limited to, flexible posts, raised curbs, or parked cars. As shown in *RWC Walk Bike Thrive (2022)*, there currently are Class IV separated bikeways exists on Middlefield Road between Woodside Road and Maple Street and on Maple Street, between Lathrop and the railroad tracks.



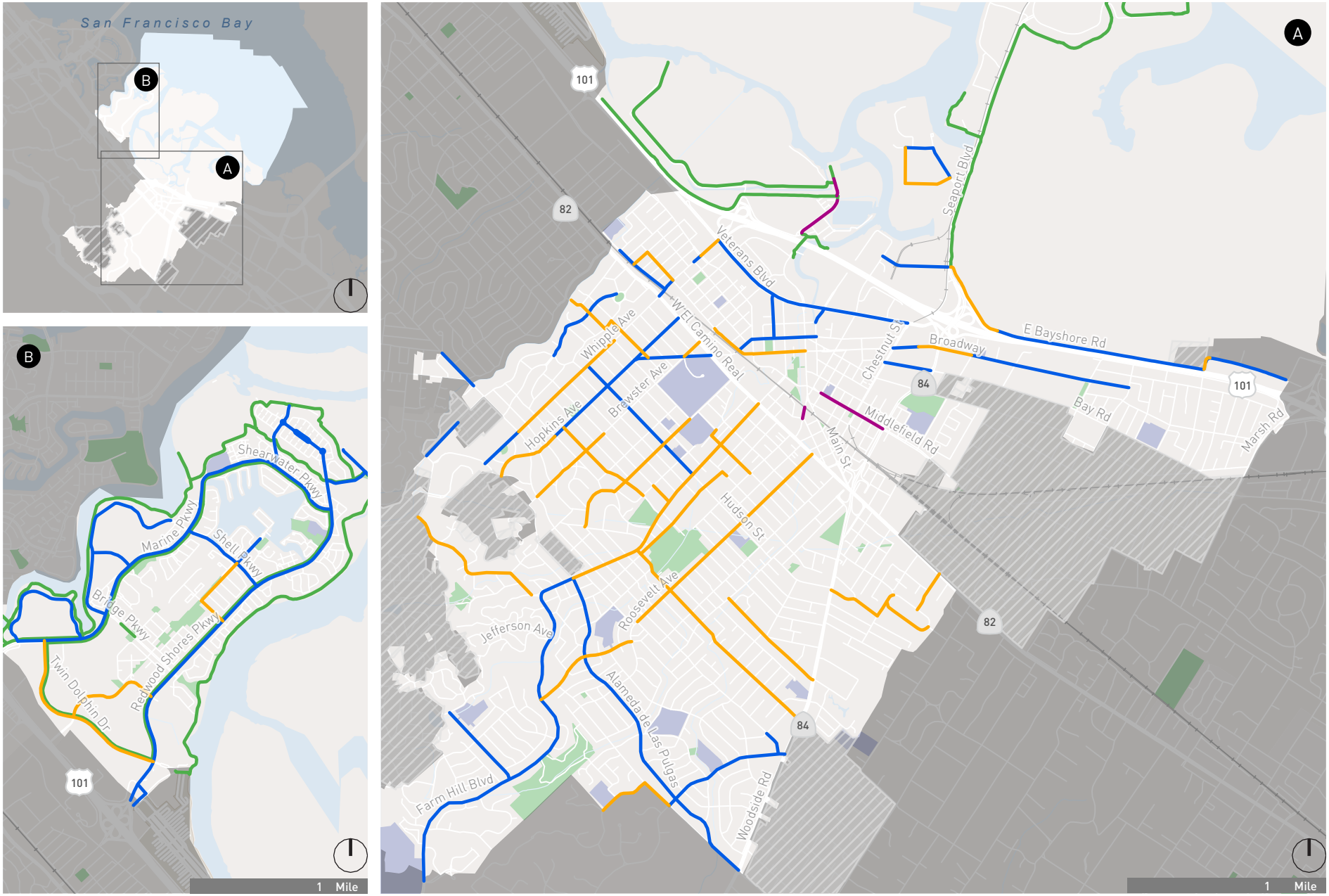


Figure 3-5

Existing Bicycle Network

4. CEQA VMT Analysis

This chapter presents an analysis of the proposed Project's impacts relative to VMT, including the daily VMT estimates for the VMT analysis.

4.1 CEQA Analysis Project Screening

In the first step of the VMT evaluation, the Project components are evaluated against the City's screening criteria. Land use projects that meet the City's screening criteria summarized in **Chapter 2** are presumed to be less-than-significant and do not require CEQA transportation analysis. While some elements of the Focused General Plan Update would meet screening criteria (given the proximity to Transit Priority Areas and affordable housing) a full VMT analysis was conducted using the C/CAG-VTA Model. The Project is proposing to increase the housing supply in the city and would likely have a relatively widespread effect on the VMT within and around Redwood City; therefore, the VMT assessment is presented in this report which considers both the Project's direct impacts relative to Project-generated VMT, as well as the Project's long-term effect on VMT using boundary VMT. Under Cumulative (2040) with Project Conditions, the countywide home-based VMT per resident is used to evaluate the Project-generated VMT, while the boundary VMT in Redwood City is used to evaluate the project's effect on VMT. Each analysis is addressed separately below.

4.2 Project Vehicle Trip Generation

Trip generation refers to the amount of travel activity associated with a change in land use at a given location. The C/CAG-VTA Model was used to estimate daily vehicle trips for the purposes of this TA. This represents a conservative approach, since the C/CAG-VTA Model uses industry standard/generic trip generation characteristics for the different land uses to estimate vehicle trips. Trip generation studies conducted as part of *RWCmoves*, show that Redwood City's vehicle trip generation rates are typically lower than standard industry rates.

Table 4-1: Project Average Weekday Daily Vehicle Trips

	Cumulative (2040) without Project	Cumulative (2040) with Project	Net New Vehicle Trips
Daily Vehicle Trips[1]	**682,400**	**737,000**	**54,600**

Notes:
1. Trip generation estimates are rounded to nearest 100.

Source: C/CAG-VTA Model; Fehr & Peers, 2022.

Table 4-1 shows the total number of average weekday daily vehicle trips generated by the entire Project planning area for the Cumulative (2040) without Project and Cumulative (2040) with Project Scenarios. As

shown in **Table 4-1,** the proposed Project would generate approximately 54,600 total net new daily vehicle trips.[10]

4.3 Project-Generated VMT

The Project-generated VMT estimate for all residential vehicle trips due to the Project with an origin or destination within the Project planning area were divided by the number of residents in the Redwood City (including sphere-of-influence) to obtain the citywide home-based VMT per resident. The results of the Project-generated VMT analysis are presented in **Table 4-2.** For the Cumulative (2040) with Project Conditions, the citywide home-based VMT per resident of 11.9 for Redwood City Focused General Plan Update is greater than the applicable VMT threshold of 11.7 and would, therefore, be considered a ***significant* impact**.

Table 4-2: Project-Generated VMT

Item	Home-Based VMT per Resident[1]
Redwood City	
Baseline Conditions	13.2
Cumulative (2040) without Project Conditions	12.0
Cumulative (2040) with Project Conditions	11.9
Impact Assessment	
Home-Based VMT per Resident Threshold (11.7) (Impact Conclusion)	**11.9** (1.7 percent greater than threshold) **(Significant)**

1. Rounded home-based VMT per resident to the nearest one-tenth.
Source: C/CAG-VTA Travel Model; Fehr & Peers, 2022.

While the Project is estimated to have a significant VMT impact, it is important to note that the Project *reduces* the citywide home-based VMT per resident as compared to the Cumulative (2040) without Project conditions as well as Baseline conditions.

While the VMT results indicate that the Project's VMT impact would be significant before mitigation, individual residential development projects may generate VMT at a rate that is below the City's threshold. The VMT analysis for the Project is a citywide metric and an aggregate estimate of VMT from residential development throughout the City. This includes residential development in lower VMT areas, such as the downtown that has higher-density, mixed-use development with good transit access, and higher VMT areas in low-density residential areas with less transit access in the west of the City. The Subsequent EIRs for the DTPP amendments stated that the residential VMT for the DTPP is between 8.1 and 8.2 miles and

[10] For comparison purposes, trip generation rates from the industry standard Institute of Transportation Engineers (ITE) Trip Generation Manual were applied to the Focused General Plan land use types and quantities. Using ITE's average daily rates of 4.72 trips per housing unit, the Project would generate approximately 53,227 daily vehicle trips, which is comparable to the trip generation estimates from the C/CAG-VTA Model.

is below the City's residential VMT threshold; and, therefore, the DTPP area does not have a VMT impact related to residential development. However, the remaining areas outside of downtown Redwood City that have larger VMT per resident are the ones causing the citywide VMT impact, particularly the home-based VMT per resident from development in less dense areas with lower transit accessibility.

4.4 VMT Mitigation

Redwood City has prepared an amendment of the Redwood City General Plan to accommodate growth in housing required to meet the City's Regional Housing Needs Allocation or "RHNA", which prioritizes higher residential densities in Redwood City, provides additional opportunities for residential development, and prioritizes development near high-quality transit. From a land use planning perspective, the City has been very proactive in promoting a land use pattern that provides convenient access to transit, places, jobs, services, and housing in close proximity, and establishes residential densities that provide for dense walkable and bikeable neighborhoods. These land use strategies represent some of the most effective strategies available to Redwood City to reduce VMT. Further, the Project is the result of an extensive outreach process among staff, policymakers, and the public to arrive at a solution that balances competing interests about accommodating housing growth and quality of life.

As shown in **Table 4-2**, a 1.7 percent reduction in citywide home-based VMT per resident would be needed to achieve the City's VMT threshold and have a less-than-significant impact. The *Redwood City General Plan* includes Goal BE-25 to "*[m]aintain a local transportation system that balances the needs of bicyclists, pedestrians, and public transit with those of private cars*." Policy BE-25.1 of the *Redwood City General Plan* identifies the desired policy outcomes of a balanced transportation system in Redwood City *to"[a]ccommodate and encourage alternative transportation modes to achieve Redwood City's mobility goal s and reduce vehicle trip generation and vehicle miles traveled (VMT)."*

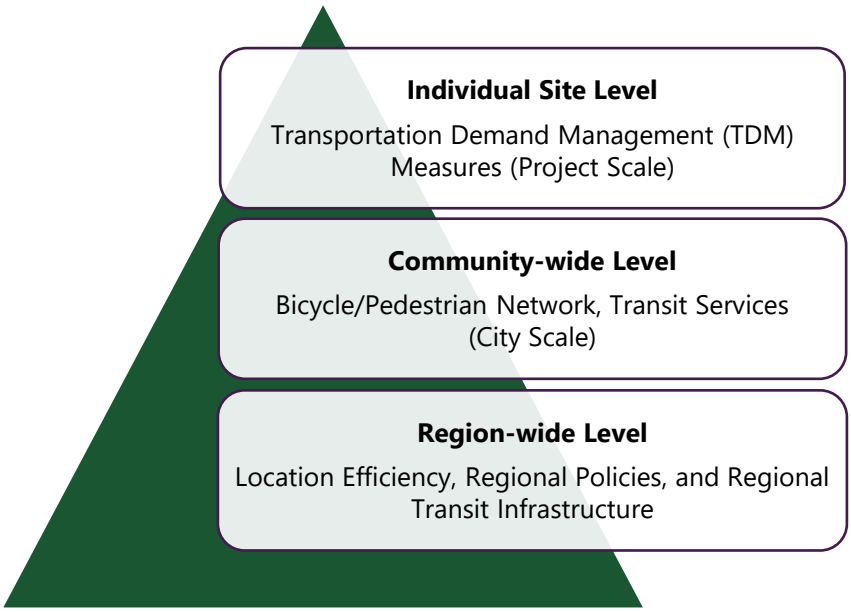
A VMT mitigation program's effectiveness depends on its scale (i.e., how much VMT the mitigation acts on) and its ability to reduce VMT. The most effective VMT mitigation actions (and resultant emissions reductions) come from statewide or region-wide policies that increase the cost, or reduce the convenience, of using vehicles. Other region-wide actions that are effective at reducing VMT include improving land use location efficiency and infrastructure investments that support transit, walking, and bicycling. While there are many VMT reduction programs that can influence VMT and vehicle emissions, individual site level VMT mitigation actions (such as TDM measures) typically have the smallest effect on VMT. This is because they are applied to new VMT generated by new buildings, while region-wide programs can apply to all buildings (existing and new) and will therefore have a larger scale of impact. However, local jurisdictions have more control over the implementation of TDM measures at the local level compared to statewide or region-wide VMT mitigation measures.

Additionally, the available research indicates that the effectiveness of TDM measures varies substantially depending on the context in which they are applied. TDM is most effective in urban areas where urban character (land use and built environment) and land use mix are most supportive of vehicle trip reduction. TDM programs are less effective in suburban areas where the built environment and transportation



network are more dispersed and where modes are typically limited to personal vehicles. **Figure 4-1** presents a conceptual illustration of the relative importance of scale.

Figure 4-1: Transportation-Related GHG Reduction Measures



4.4.1 Individual Site Level VMT Mitigation

To meet the City's desired policy outcomes and to account for the geographic variability of home-based VMT per resident, future residential development projects under the Project will be required to conduct baseline VMT screening/analysis consistent with the guidance provided in the *Redwood City TAM* to determine if additional VMT analysis and/or a VMT-reducing TDM plan is required.

The *Redwood City TAM* specifies that projects consistent with the General Plan and any applicable Specific Plans would be able to apply specific VMT screening criteria. Since the cumulative VMT analysis has already been conducted for this Project, future development projects that are consistent with the Project can apply the City's screening criteria from the *Redwood City TAM* for their baseline VMT analysis, as follows:

- **Transit Priority Areas (TPA)**: This criterion only applies to projects located within the ½ mile walkshed around major transit stops (i.e., Transit Center) or within a ¼ mile walkshed around high-quality transit corridors (i.e., El Camino Real) in Redwood City. TPA screening will only apply if the project meets the following additional criteria:
    - Floor Area Ratio (FAR) of 0.75 or more; *and*
    - Total square footage of 500,000 square feet or less; *and*

- Proposed parking does not exceed minimum required by the Zoning Code or applicable plan; *and*
- Project is consistent with Sustainable Communities Strategy (as determined by the lead agency, with input from MTC); *and*
- Existing on-site affordable residential units are maintained or increased; *and*
- Less than significant levels of VMT are anticipated through project-specific or location-specific information (i.e., based on the City's discretion a project is not anticipated to have characteristics that would result in VMT that is substantially different from similar and/or surrounding uses).

- **Affordable Housing**: This criterion applies to 100% restricted affordable residential projects in infill locations (i.e., developments within unused and underutilized lands within existing development patterns) and near transit (i.e., is within ½ mile of a transit stop).
- **Small Projects**: This criterion applies to projects defined as generating 150 or fewer average daily vehicle trips, absent substantial evidence indicating that a project would generate a potentially significant level of VMT. Each project is required to document the trip generation methodology and number of trips it would generate.

Future residential development projects that meet at least one of the screening criteria would require no further VMT analysis. Future residential projects that do not meet at least one of the screening criteria would be required to conduct as VMT analysis using the C/CAG-VTA Model or the C/CAG VMT Estimation Tool[11] to determine if their home-based VMT per resident is below the City's applicable threshold. Projects that are below the threshold would require no further VMT analysis or mitigation. Projects that exceed the City's home-based VMT per resident threshold would be required to develop a TDM plan consistent with City's TDM Ordinance (Chapter 48 of the Redwood City Municipal Code)[12] and demonstrate that the proposed TDM plan reduced the project's VMT below the City's threshold. The City's current TDM Ordinance focuses on achieving mode share goals and not VMT targets. To demonstrate the effectiveness of a project's TDM plan to reduce VMT, the TDM plan for projects that do not meet the screening criteria and exceed the City's home-based residential VMT threshold shall quantify the VMT effectiveness of the TDM plan by including data and reduction calculations from the latest California Air Pollution Control Offices Association (CAPCOA) *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (December 2021). Quantifying the CAPCOA reductions could be achieved through manual application of the CAPCOA *Handbook* or the C/CAG VMT Estimation Tool once the Tool has been updated to reflect the most current

[11] Source: https://apps.fehrandpeers.com/CCAG_VMT_Estimation_Tool/

[12] The City's' current TDM Ordinance requires all new development in the City that meet specified development thresholds (generally 25 or more housing units and/or 10,000 square feet or more commercial development, including office developments) to develop a TDM plan and achieve specific mode share targets regardless of VMT impact. Applicable mode share targets for residential sites are no more than 33 percent of trips being drive-alone trips (i.e., single-occupancy vehicle or "SOV trips") in the downtown area and no more than 44 percent of trips being drive-alone for sites outside of the downtown. The TDM Ordinance requires individual projects to annually monitor their site for compliance and includes financial penalties for projects that fail to meet specified drive-alone targets.



version of CAPCOA (the current VMT reductions in the C/CAG VMT Estimation Tool are based on the 2018 CAPCOA). Not all residential projects will be able to fully reduce their VMT impact; though each project will be required to demonstrate that they are making a good faith effort toward maximizing their VMT reductions; See Mitigation Measure 1, below.

4.4.2 Community-wide or Region-wide Level VMT Mitigation

Additionally, the City could consider creating and adopting a community-wide multimodal transportation impact fee (TIF) program to provide funding for mostly VMT reduction projects, such as bicycle and pedestrian improvements and localized vehicle operation improvements (e.g., local intersection modifications) identified in the *Redwood City General Plan* (2010), *RWCmoves*, and *RWC Walk Bike Thrive*. Development of a community-wide multimodal TIF program takes time to develop and implement and the City does not have a specified timeline for a community-wide multimodal TIF program. A community-wide multimodal TIF program could be complemented by a regional VMT mitigation program (e.g., VMT cap, VMT-based impact fee program, VMT mitigation bank, VMT mitigation exchange). However, no regional VMT mitigation programs currently exist in San Mateo County. In the second half of 2022, C/CAG is anticipated to start evaluating different VMT mitigation program frameworks which may lead to a countywide or sub-regional VMT mitigation program. However, since the City has no specified timeline for a community-wide multimodal TIF program and the City has no control of C/CAG's process and outcome of a regional VMT mitigation program outside its jurisdiction, it is not considered to be reasonable or feasible mitigation for the Project. However, the City should create a community-wide multimodal transportation impact fee program in the future and/or support and work cooperatively with C/CAG to implement a countywide or sub-regional VMT mitigation program. Future residential projects would be required to pay the applicable community-wide, countywide, or sub-regional VMT fees, when those have been established.

4.4.3 Mitigation Measures

Mitigation Measure 1: All future residential development projects that do not meet the City's VMT screening criteria and exceed the City's home-based residential VMT threshold shall be required to develop a TDM Plan and quantify the VMT effectiveness of the plan by including data and reduction calculations from the latest *CAPCOA Handbook*. Not all residential projects will be able to fully reduce their VMT impact because of its land use context (i.e., low-density suburban area, low transit access, etc.). However, each project will be required to demonstrate that they are making a good faith effort toward maximizing their TDM plan and associated VMT reductions. Since the City cannot demonstrate that the VMT from each future residential development project would be reduced to the degree that is needed to eliminate the VMT impact, the home-based VMT per resident impact would be considered ***significant and unavoidable with Mitigation 1***.

Mitigation Measure 2: The City should create a community-wide multimodal transportation impact fee program in the future and/or support and work cooperatively with C/CAG to implement a countywide or sub-regional VMT mitigation program. Future residential projects would be required to pay the applicable community-wide, countywide, and/or sub-regional VMT fees once



those have been established. Since the City has no specified timeline for a community-wide multimodal transportation impact fee program and the City has no control of C/CAG's process and outcome of a regional VMT mitigation program outside its jurisdiction the home-based VMT per resident impact would be considered ***significant and unavoidable with Mitigation 2***.

4.5 Project's Effect on VMT (Using Boundary VMT)

To evaluate the Project's effect on VMT between the Cumulative (2040) and Cumulative (2040) with Project Conditions, the boundary VMT is divided by the service population (sum of residential population and employment population). The growth in boundary VMT captures the combined effect of the following factors:

- Shifts in existing VMT due to land use and transportation network changes in Redwood City
- Shifts in existing traffic to alternate travel routes or modes, and
- New VMT from additional land use development in Redwood City.

The analysis results of the Project's effect on VMT under Cumulative (2040) and Cumulative (2040) with Project Conditions are presented in **Table 4-3**.

Under Cumulative (2040) with Project Conditions, the Redwood City boundary VMT per service population of 9.6 does not exceed the applicable VMT threshold of 10.3. Therefore, the impact of the Project's effect on VMT under Cumulative (2040) with Project Conditions would be ***less-than-significant***.

Mitigation Measure: None required.

Table 4-3: Project's Effect on VMT (Using Boundary VMT) for VMT Assessment

Item	Cumulative (2040) without Project Conditions[1]	Cumulative (2040) with Project Conditions[1]
Redwood City		
Boundary VMT (A)	2,398,880	2,470,280
Service Population (B)[2]	233,590	257,210
Boundary VMT per Service Population (A/B=C)	10.3	9.6
Impact Assessment		
Boundary VMT per Service Population Threshold (10.3) (Impact Conclusion)		**9.6 (Less-Than-Significant)**

Notes:
1. Rounded service population and VMT to nearest 10. Rounded boundary VMT per service population to the nearest one-tenth.
2. Service population is defined as the sum of all employees and residents. Refer to **Table 2-3** for breakdown of employees and residents.

Source: C/CAG-VTA Model; Fehr & Peers, 2022.

5. Additional CEQA Transportation Impact Analysis

This chapter presents the transportation impacts related to the other significance criteria not covered in **Chapter 4** (CEQA VMT Analysis). Specifically, a project could have a significant transportation impact on the environment if it meets any of the following criteria:

1. Plan Conflict Impact: The Project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.
2. Safety and Hazard Impact: The Project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
3. Emergency Access Impact: The Project would result in inadequate emergency vehicle access.

5.1 Plan Conflict Impact Evaluations

Based on the City's guidelines, the Project would cause a significant transportation impact if an element of the Project conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities.

A review of the proposed *2023-2031 Housing Element* (Public Review Draft February 2022) did not reveal conflicts with any adopted goals, policies, plans or programs applicable to transit, roadway, bicycle, and pedestrian facilities and services found in the following policy documents:

- *Redwood City General Plan* (2010),
- *RWCmoves* (2018),
- *Citywide Bicycle & Pedestrian Master Plan and Vision Zero Action Plan* (*RWC Walk Bike Thrive*) (June 2022),
- *San Mateo Countywide Transportation Plan 2040* (2017),
- *San Mateo County Comprehensive Bicycle and Pedestrian Plan* (2021).

In addition, the proposed *2023-2031 Housing Element* (Public Review Draft February 2022) was designed to complement other elements, such as the Circulation Element in the latest *Redwood City General Plan* (2010) and would be accommodated by the multimodal networks proposed in *RWCmoves* (2018), *RWC Walk Bike Thrive* (June 2022), *San Mateo Countywide Transportation Plan 2040* (2017), and the *San Mateo County Comprehensive Bicycle and Pedestrian Plan* (2021). Further, the proposed *2023-2031 Housing Element* (Public Review Draft February 2022) includes goals, policies, and programs that support access to and the performance of transit, roadway, bicycle, and pedestrian facilities by locating new housing opportunities in mixed-use, walkable, bikeable, and transit-rich areas.



However, implementation of the proposed Project could lead to increases in the City's residential population, which has the potential to result in outcomes that are inconsistent with adopted goals, policies, plans or programs in Redwood City. Outcomes resulting from increases in residential population could include increased delay to transit facilities and services caused by increased vehicle traffic and increased pedestrian and bicycle demand on roadways. Also, the potential increase in the number of people traveling on Redwood City roadways could increase the number of collisions in Redwood City, including collisions involving transit users, bicyclists, and pedestrians. Therefore, the proposed Project may conflict with goals and policies related to providing a safe and convenient transportation system for all modes of travel.

However, to address this potential conflict, Redwood City has an adopted Circulation Element in the latest *Redwood City General Plan* (2010) and developed multimodal plans and programs in *RWCmoves* (2018) and *RWC Walk Bike Thrive* (June 2022) to support the buildout of the proposed Project. Further, subsequent infrastructure improvements, including any new roadway, bicycle, pedestrian, and transit improvements, and development sites proposed under the Project would be subject to review, and designed in accordance with all applicable City guidelines, standards, and specifications related to transit, roadway, bicycle, or pedestrian facilities and services found in the *Redwood City General Plan* (2010), *RWCmoves* (2018), *RWC Walk Bike Thrive* (June 2022), *San Mateo Countywide Transportation Plan 2040* (2017), and the *San Mateo County Comprehensive Bicycle and Pedestrian Plan* (2021). The City also requires the preparation of a local transportation analysis to evaluate individual projects against the goals, policies, and actions in the *General Plan* and *RWCmoves*, as well as identify any existing or planned transit, roadway, bicycle, or pedestrian facilities that may be affected by the project.

Because implementation of the proposed Project would be subject to all applicable City guidelines, standards, and specifications, the Project would not conflict with adopted goals, policies, plans or programs for transit, roadway, bicycle, or pedestrian facilities. Further, specific housing sites developed under the Project would need to be analyzed for transit, roadway, bicycle, and pedestrian conflicts as part of the individual project review. Therefore, the proposed Project would result in a ***less-than-significant*** impact to transit, roadway, bicycle, and pedestrian facilities.

Mitigation Measure: None required.

5.2 Safety and Hazard Impact Analysis

The proposed Project would have a significant impact relative to hazards if it would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Applicable design standards for this Project are included in *RWCmoves* (July 2018), *RWC Walk Bike Thrive* (June 2022), and the *Street Design Criteria* included in the City's 2019 Engineering Standards, all of which include design specifications to ensure safe and efficient travel of vehicles, bicycles, pedestrians, and transit vehicles. Safety impacts may occur due to changes in the physical or operational conditions of the transportation network. Physical impacts may be related to



changes in the land use context along a roadway such that the volume, mix, or speed of traffic was not anticipated as part of the original multimodal transportation network design.

The proposed Project does not include modifications to the design of local streets or intersections; however, subsequent infrastructure improvements under the Project, including any new roadway, bicycle, pedestrian, and transit improvements, would be subject to, and designed in accordance with City standards and specifications which address potential design hazards including sight distance, driveway placement, and signage and striping. Additionally, any new transportation facilities, or improvements to such facilities associated with subsequent infrastructure improvements would be constructed based on industry design standards and best practices consistent with the City's zoning code and building design and inspection requirements. The City's evaluation of projects' access and circulation will incorporate analysis with respect to City standards for vehicular level of service and queueing, as well as for service to pedestrians, bicyclists, and transit users. Therefore, the Project would result in a ***less-than-significant*** impact to transportation hazards.

Mitigation Measure: None required.

5.3 Emergency Access Impact Analysis

For this analysis, a significant impact would occur if the proposed Project or an element of the Project would result in inadequate emergency access. There are no specific development projects associated with the Project; thus, specific housing sites developed under the Project cannot be analyzed for adequacy of emergency access at this time. However, since the City maintains the roadway network, emergency access to new development sites proposed under the Project would be subject to review by Redwood City (in accordance with industry design standards, including the City of Redwood City's 2019 Engineering Standards as well as relevant sections from *RWCmoves* (2017)) and responsible emergency service agencies, ensuring the projects would be designed to meet all emergency access and design standards. The City also requires the preparation of construction management plans that minimize temporary obstruction of traffic during site construction.

Additional vehicles associated with new development sites could increase delays for emergency response vehicles during peak commute hours. However, emergency responders maintain response plans which include use of alternate routes, sirens, and other methods to bypass congestion and minimize response times. In addition, California law requires drivers to yield the right-of-way to emergency vehicles and remain stopped until the emergency vehicle passes to ensure the safe and timely passage of emergency vehicles.

Based on the above considerations, adequate emergency access would be provided to new development sites, and the impact would be ***less-than-significant***.

Mitigation Measure: None required.

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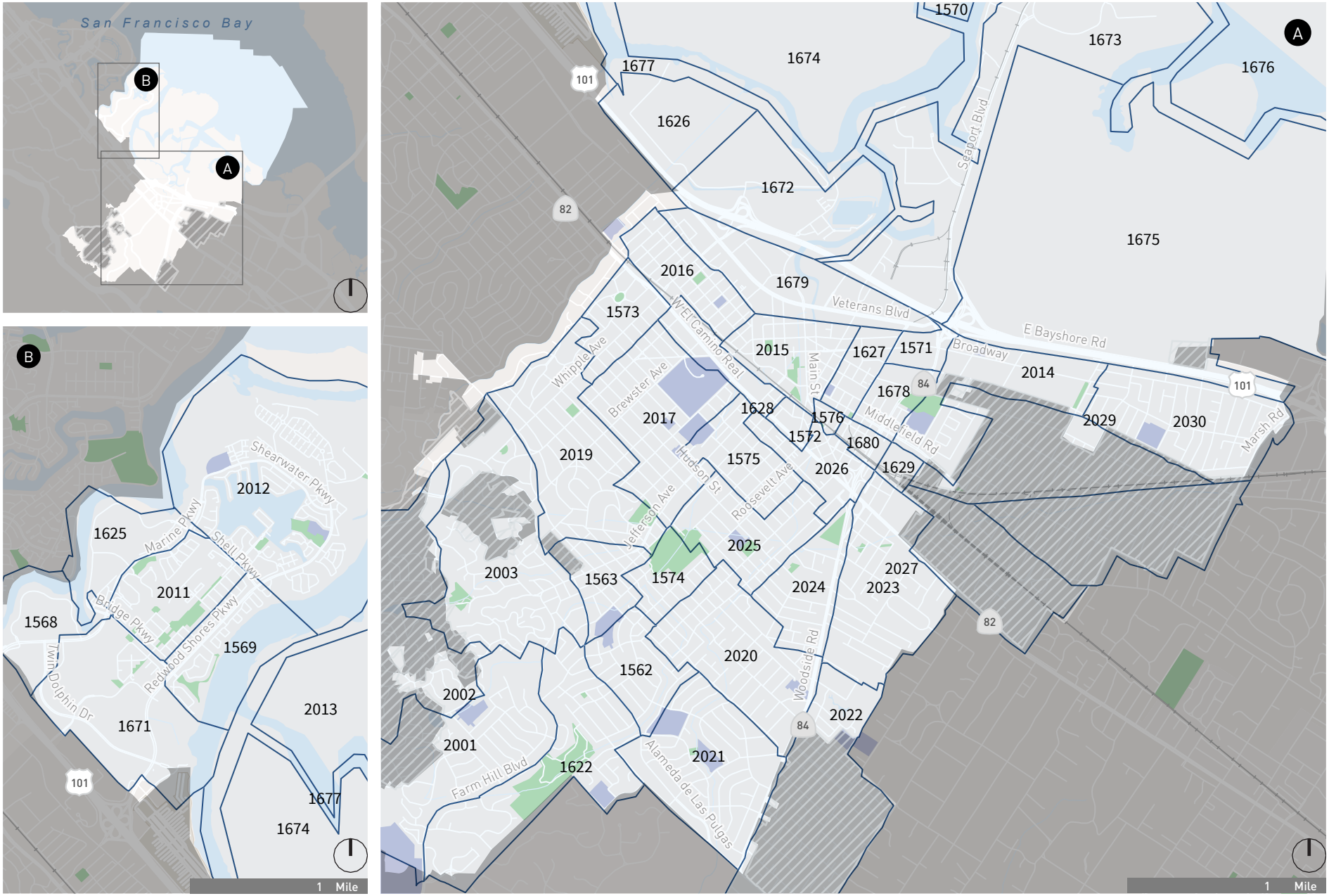
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Attachment A:
C/CAG-VMT Model Land Use and Population Inputs

FEHR PEERS



Redwood City Limits
Sphere of Influence
Parks
Schools
Railroad
TAZ Boundaries

Figure A-1

Redwood City Transportation Analysis Zones

Note: Geographies between Redwood City limits and sphere of influence don't perfectly align due to application of slightly different scale/coordinate systems.

Table A1. CCAG/VTA Travel Model - Redwood City Land Use and Population Summary (As Received, mid 2020)		
	Existing (2015)	Cumulative (2040)
Total Households	**30,980**	**39,528**
Total Population	87,165	105,659
Employed Residents	47,113	48,669
Single Family Households	18,976	20,026
Multi Family Households	12,004	19,506
Total Employment	**58,360**	**83,146**
Retail Employment	6,673	9,249
Service Employment	27,898	41,907
Other Employment	18,393	25,047
Agricultural Employment	171	279
Manufacturing Employment	3,107	3,906
Wholesale Employment	2,129	2,773

Note:
Calculations include all TAZs labelled as "Redwood City" in as received CCAG/VTA model.

Table A2. CCAG/VTA Travel Demand Model (2015) - Redwood City Land Use and Population Inputs (As Received, mid 2020)

TAZ	Total Households	Total Population	Employed Residents	Single Family Households	Multi Family Households	Total Employment	Retail Employment	Service Employment	Other Employment	Agricultural Employment	Manufacturing Employment	Wholesale Employment
Citywide Total	**30,980**	**87,165**	**47,113**	**18,976**	**12,004**	**58,360**	**6,673**	**27,898**	**18,393**	**171**	**3,107**	**2,129**
1562	379	1,031	548	340	39	506	254	124	82	0	1	45
1563	476	1,304	739	447	29	30	18	5	6	0	0	1
1568	10	32	13	6	3	7,138	52	6,066	1,020	0	0	0
1569	320	878	430	232	89	33	11	11	6	0	0	6
1570	0	0	0	0	0	6	0	0	0	5	1	0
1571	0	0	0	0	0	200	9	79	108	2	3	0
1572	188	774	225	27	160	278	35	94	95	3	41	11
1573	1,097	2,483	1,600	566	531	177	91	26	60	0	0	0
1574	368	1,045	576	272	97	236	0	177	6	18	10	26
1575	1,171	3,300	1,990	587	585	187	16	149	19	3	1	0
1576	113	389	204	30	82	116	25	46	42	1	2	0
1622	833	2,266	1,211	747	86	176	3	42	125	0	6	0
1625	579	1,321	761	400	179	2,606	0	2,578	28	0	0	0
1626	0	0	0	0	0	6	0	0	0	5	1	0
1627	819	2,841	1,479	230	589	1,206	259	420	497	2	29	0
1628	274	489	340	15	259	1,483	467	447	352	9	204	4
1629	34	150	65	9	25	160	12	66	50	1	29	2
1671	396	1,070	521	272	124	12,019	2,190	3,408	5,763	0	0	658
1672	391	1,185	530	28	363	416	202	20	176	5	12	0
1673	2	7	2	0	2	5,239	335	3,230	1,295	5	287	88
1674	0	0	0	0	0	6	0	0	0	5	1	0
1675	532	1,569	749	54	478	330	51	8	239	5	27	0
1676	0	0	0	0	0	6	0	0	0	5	1	0
1677	2	4	2	0	2	6	0	0	0	5	1	0
1678	252	1,009	453	71	181	422	91	160	162	2	8	0
1679	49	113	61	4	45	4,445	733	1,067	1,206	9	1,268	161
1680	99	354	186	27	72	85	16	34	33	1	1	0
2001	1,072	2,956	1,583	962	110	350	41	288	16	0	6	0
2002	1,662	4,621	2,247	1,654	8	383	8	155	174	17	29	0
2003	1,214	3,392	1,917	1,138	75	555	12	519	24	0	0	0
2011	984	2,344	1,321	674	310	330	0	119	211	0	0	0
2012	3,040	7,465	4,179	2,163	877	2,058	200	1,143	661	0	0	54
2013	0	0	0	0	0	6	0	0	0	5	1	0
2014	478	1,852	911	134	344	3,335	244	1,135	1,014	0	622	320
2015	681	2,152	847	48	633	7,744	446	3,316	3,186	9	208	579
2016	849	2,233	1,257	422	427	909	25	97	754	0	31	3
2017	1,222	3,071	1,831	633	589	914	17	791	67	0	22	17
2019	1,169	3,354	1,922	1,154	15	204	16	114	31	2	40	1
2020	1,839	5,062	2,922	1,359	480	368	39	194	110	18	6	2
2021	1,020	2,790	1,319	990	30	666	39	492	126	6	1	2
2023	2,060	5,009	2,776	938	1,122	1,042	160	620	210	11	6	36
2024	1,602	4,855	2,789	414	1,188	716	418	181	112	5	0	0
2025	1,239	3,357	2,159	621	618	165	16	66	70	3	11	0
2026	788	2,865	1,539	114	675	498	60	178	172	1	57	30
2030	1,677	6,173	2,909	1,194	483	599	62	233	85	3	133	83

Note:

All TAZs are labelled as "Redwood City" in as received CCAG/VTA model.

Table A3. CCAG/VTA Travel Demand Model (2040) - Redwood City Land Use and Population Inputs (As Received, mid 2020)

TAZ	Total Households	Total Population	Employed Residents	Single Family Households	Multi Family Households	Total Employment	Retail Employment	Service Employment	Other Employment	Agricultural Employment	Manufacturing Employment	Wholesale Employment
Citywide Total	**39,528**	**105,659**	**48,669**	**20,026**	**19,506**	**83,146**	**9,249**	**41,907**	**25,047**	**279**	**3,906**	**2,773**
1562	384	1,034	545	345	40	687	344	168	112	0	1	63
1563	490	1,314	664	459	30	124	75	21	26	0	0	4
1568	9	28	12	6	3	10,907	80	9,268	1,559	0	0	0
1569	285	804	414	206	79	18	6	6	3	0	0	3
1570	0	2	0	0	0	12	0	0	0	11	1	0
1571	0	6	0	0	0	241	11	95	129	2	3	0
1572	1,086	3,049	683	159	927	305	39	103	104	3	45	12
1573	998	2,207	1,155	515	483	277	143	41	93	0	0	0
1574	390	1,037	459	287	102	363	0	271	10	27	15	39
1575	1,190	3,666	1,686	596	594	346	30	274	35	5	2	0
1576	122	430	151	33	89	239	52	94	87	2	5	0
1622	844	2,276	1,203	757	87	240	4	57	171	0	9	0
1625	543	1,168	703	375	168	3,982	0	3,938	44	0	0	0
1626	0	0	0	0	0	12	0	0	0	11	1	0
1627	1,286	4,181	1,642	361	926	1,453	312	505	598	2	35	0
1628	1,586	1,928	1,032	87	1,499	1,628	512	492	386	10	224	5
1629	37	166	49	10	27	332	25	137	104	2	61	5
1671	371	946	481	255	116	18,365	3,346	5,207	8,806	0	0	1,006
1672	889	2,178	838	64	824	821	399	40	348	9	24	0
1673	4	12	3	0	4	10,344	661	6,378	2,556	9	566	173
1674	0	0	0	0	0	12	0	0	0	11	1	0
1675	1,208	2,885	1,128	123	1,086	653	102	16	473	9	54	0
1676	0	2	0	0	0	12	0	0	0	11	1	0
1677	4	8	3	0	4	12	0	0	0	11	1	0
1678	395	1,485	503	111	284	509	110	192	194	2	10	0
1679	284	447	193	24	260	4,881	805	1,172	1,324	10	1,393	177
1680	107	392	137	30	78	176	33	70	69	2	3	0
2001	1,087	2,968	1,573	975	111	475	55	391	21	0	9	0
2002	1,696	4,812	2,828	1,688	8	655	13	265	299	29	50	0
2003	1,248	3,418	1,723	1,171	78	2,273	49	2,124	100	0	1	0
2011	921	2,072	1,221	632	290	504	0	181	323	0	0	0
2012	2,706	6,845	4,025	1,925	781	1,138	111	632	365	0	0	30
2013	0	2	0	0	0	12	0	0	0	11	1	0
2014	751	2,727	1,012	211	541	4,019	295	1,368	1,222	0	750	385
2015	3,941	8,482	2,569	279	3,662	8,502	489	3,640	3,498	10	228	636
2016	921	2,652	1,324	457	464	432	12	46	358	0	15	1
2017	1,111	2,730	1,321	576	536	1,435	27	1,242	105	0	34	27
2019	1,049	2,955	1,516	1,035	14	401	31	223	61	5	80	2
2020	1,943	5,027	3,026	1,436	507	566	60	298	169	27	9	3
2021	1,095	3,163	1,545	1,063	32	1,362	81	1,006	258	13	2	4
2023	3,134	8,286	3,602	1,427	1,707	1,746	268	1,040	351	18	10	60
2024	1,667	5,081	2,072	431	1,236	787	460	199	123	6	0	0
2025	1,259	3,730	1,829	631	628	307	29	124	130	5	21	0
2026	853	3,173	1,142	123	730	1,031	123	369	355	3	118	62
2030	1,634	5,885	2,657	1,163	471	550	57	214	78	3	123	76

Note:

All TAZs are labelled as "Redwood City" in as received CCAG/VTA model.

Table A4. CCAG/VTA Travel Model - Land Use and Population Summary (Redwood City Focused General Plan Update)			
	Existing	Cumulative (2040)	Cumulative with Project (2040)
Total Households	**40,355**	**46,182**	**57,462**
Total Population	114,849	130,448	154,069
Employed Residents	60,804	59,686	68,861
Single Family Households	24,705	25,626	23,319
Multi Family Households	15,651	20,560	34,143
Total Employment	**66,204**	**103,141**	**103,141**
Retail Employment	7,331	9,890	9,890
Service Employment	30,176	47,056	47,056
Other Employment	21,287	37,418	37,418
Agricultural Employment	226	369	369
Manufacturing Employment	4,256	4,944	4,944
Wholesale Employment	2,941	3,475	3,475

Source: Fehr & Peers, 2022

Table A5. CCAG/VTA Travel Demand Model (Existing) - Land Use and Population Inputs (Redwood City Focused General Plan Update)

TAZ	Total Households	Total Population	Employed Residents	Single Family Households	Multi Family Households	Total Employment	Retail Employment	Service Employment	Other Employment	Agricultural Employment	Manufacturing Employment	Wholesale Employment
Citywide Total	**40,355**	**114,849**	**60,804**	**24,705**	**15,651**	**66,204**	**7,331**	**30,176**	**21,287**	**226**	**4,256**	**2,941**
1562	379	1,031	548	340	39	506	254	124	82	0	1	45
1563	476	1,304	739	447	29	30	18	5	6	0	0	1
1568	10	32	13	6	3	7,138	52	6,066	1,020	0	0	0
1569	320	878	430	232	89	33	11	11	6	0	0	6
1570	0	0	0	0	0	6	0	0	0	5	1	0
1571	0	0	0	0	0	200	9	79	108	2	3	0
1572	188	774	225	27	160	278	35	94	95	3	41	11
1573	1,097	2,483	1,600	566	531	177	91	26	60	0	0	0
1574	368	1,045	576	272	97	236	0	177	6	18	10	26
1575	1,171	3,300	1,990	587	585	187	16	149	19	3	1	0
1576	113	389	204	30	82	116	25	46	42	1	2	0
1622	833	2,266	1,211	747	86	176	3	42	125	0	6	0
1625	579	1,321	761	400	179	2,606	0	2,578	28	0	0	0
1626	0	0	0	0	0	6	0	0	0	5	1	0
1627	819	2,841	1,479	230	589	1,206	259	420	497	2	29	0
1628	0	0	0	0	0	1,120	353	337	266	7	154	3
1629	34	150	65	9	25	160	12	66	50	1	29	2
1671	396	1,070	521	272	124	12,019	2,190	3,408	5,763	0	0	658
1672	391	1,185	530	28	363	416	202	20	176	5	12	0
1673	2	7	2	0	2	5,239	335	3,230	1,295	5	287	88
1674	0	0	0	0	0	6	0	0	0	5	1	0
1675	532	1,569	749	54	478	330	51	8	239	5	27	0
1676	0	0	0	0	0	6	0	0	0	5	1	0
1677	2	4	2	0	2	6	0	0	0	5	1	0
1678	252	1,009	453	71	181	422	91	160	162	2	8	0
1679	49	113	61	4	45	4,445	733	1,067	1,206	9	1,268	161
1680	99	354	186	27	72	85	16	34	33	1	1	0
2001	1,072	2,956	1,583	962	110	350	41	288	16	0	6	0
2002	1,662	4,621	2,247	1,654	8	383	8	155	174	17	29	0
2003	1,214	3,392	1,917	1,138	75	555	12	519	24	0	0	0
2011	984	2,344	1,321	674	310	330	0	119	211	0	0	0
2012	3,040	7,465	4,179	2,163	877	2,058	200	1,143	661	0	0	54
2013	0	0	0	0	0	6	0	0	0	5	1	0
2014	478	1,852	911	134	344	3,335	244	1,135	1,014	0	622	320
2015	1,861	4,243	1,670	6	1,855	10,295	593	4,408	4,236	12	277	770
2016	1,123	2,722	1,597	437	686	1,272	139	207	840	2	81	4
2017	1,222	3,071	1,831	633	589	914	17	791	67	0	22	17
2019	1,169	3,354	1,922	1,154	15	204	16	114	31	2	40	1
2020	1,839	5,062	2,922	1,359	480	368	39	194	110	18	6	2
2021	1,020	2,790	1,319	990	30	666	39	492	126	6	1	2
2022	4,002	10,822	5,634	3,348	655	633	66	329	159	25	17	38
2023	2,060	5,009	2,776	938	1,122	1,042	160	620	210	11	6	36
2024	1,602	4,855	2,789	414	1,188	716	418	181	112	5	0	0
2025	1,239	3,357	2,159	621	618	165	16	66	70	3	11	0
2026	788	2,865	1,539	114	675	498	60	178	172	1	57	30
2027	1,631	5,921	2,976	765	866	881	126	205	282	0	126	143
2028	1,203	3,721	1,710	962	241	821	105	208	274	10	106	118
2029	1,359	5,129	2,548	696	663	2,958	214	444	1,129	17	831	322
2030	1,677	6,173	2,909	1,194	483	599	62	233	85	3	133	83

Source: Fehr & Peers, 2022

Note:

Additional TAZs 2022, 2027, 2028, 2029 included in Redwood City in project runs.

Table A6. CCAG/VTA Travel Demand Model (Cumulative (2040) Without Project) - Land Use and Population Inputs (Redwood City Focused General Plan Update)												
TAZ	Total Households	Total Population	Employed Residents	Single Family Households	Multi Family Households	Total Employment	Retail Employment	Service Employment	Other Employment	Agricultural Employment	Manufacturing Employment	Wholesale Employment
Citywide Total	**46,182**	**130,448**	**59,686**	**25,626**	**20,560**	**103,141**	**9,890**	**47,056**	**37,418**	**369**	**4,944**	**3,475**
1562	384	1,034	545	345	40	687	344	168	112	0	1	63
1563	490	1,314	664	459	30	124	75	21	26	0	0	4
1568	9	28	12	6	3	10,907	80	9,268	1,559	0	0	0
1569	285	804	414	206	79	18	6	6	3	0	0	3
1570	0	2	0	0	0	12	0	0	0	11	1	0
1571	0	6	0	0	0	241	11	95	129	2	3	0
1572	1,086	3,049	683	159	927	305	39	103	104	3	45	12
1573	998	2,207	1,155	515	483	277	143	41	93	0	0	0
1574	390	1,037	459	287	102	363	0	271	10	27	15	39
1575	1,190	3,666	1,686	596	594	346	30	274	35	5	2	0
1576	122	430	151	33	89	239	52	94	87	2	5	0
1622	844	2,276	1,203	757	87	240	4	57	171	0	9	0
1625	543	1,168	703	375	168	3,982	0	3,938	44	0	0	0
1626	0	0	0	0	0	12	0	0	0	11	1	0
1627	1,286	4,181	1,642	361	926	1,453	312	505	598	2	35	0
1628	500	1,140	610	0	500	9,320	512	2,415	6,155	10	224	5
1629	37	166	49	10	27	332	25	137	104	2	61	5
1671	371	946	481	255	116	18,365	3,346	5,207	8,806	0	0	1,006
1672	889	2,178	838	64	824	821	399	40	348	9	24	0
1673	4	12	3	0	4	10,344	661	6,378	2,556	9	566	173
1674	0	0	0	0	0	12	0	0	0	11	1	0
1675	1,208	2,885	1,128	123	1,086	653	102	16	473	9	54	0
1676	0	2	0	0	0	12	0	0	0	11	1	0
1677	4	8	3	0	4	12	0	0	0	11	1	0
1678	395	1,485	503	111	284	509	110	192	194	2	10	0
1679	284	447	193	24	260	4,881	805	1,172	1,324	10	1,393	177
1680	107	392	137	30	78	176	33	70	69	2	3	0
2001	1,087	2,968	1,573	975	111	475	55	391	21	0	9	0
2002	1,696	4,812	2,828	1,688	8	655	13	265	299	29	50	0
2003	1,248	3,418	1,723	1,171	78	2,273	49	2,124	100	0	1	0
2011	921	2,072	1,221	632	290	504	0	181	323	0	0	0
2012	2,706	6,845	4,025	1,925	781	1,138	111	632	365	0	0	30
2013	0	2	0	0	0	12	0	0	0	11	1	0
2014	751	2,727	1,012	211	541	4,019	295	1,368	1,222	0	750	385
2015	3,119	7,111	2,154	6	3,113	14,556	489	5,154	8,038	10	228	636
2016	921	2,652	1,324	457	464	432	12	46	358	0	15	1
2017	1,111	2,730	1,321	576	536	1,435	27	1,242	105	0	34	27
2019	1,049	2,955	1,516	1,035	14	401	31	223	61	5	80	2
2020	1,943	5,027	3,026	1,436	507	566	60	298	169	27	9	3
2021	1,095	3,163	1,545	1,063	32	1,362	81	1,006	258	13	2	4
2022	4,016	10,057	4,956	3,359	657	1,536	159	798	385	61	40	92
2023	3,134	8,286	3,602	1,427	1,707	1,746	268	1,040	351	18	10	60
2024	1,667	5,081	2,072	431	1,236	787	460	199	123	6	0	0
2025	1,259	3,730	1,829	631	628	307	29	124	130	5	21	0
2026	853	3,173	1,142	123	730	1,031	123	369	355	3	118	62
2027	1,553	5,847	2,500	728	825	1,094	156	254	349	0	156	177
2028	1,182	3,544	1,763	945	237	1,140	146	288	381	14	146	163
2029	1,811	7,500	2,635	928	883	2,479	180	372	947	15	696	270
2030	1,634	5,885	2,657	1,163	471	550	57	214	78	3	123	76

Source: Fehr & Peers, 2022

Note:

Additional TAZs 2022, 2027, 2028, 2029 included in Redwood City in project runs.

Table A7. CCAG/VTA Travel Demand Model (Cumulative (2040) With Project) - Land Use and Population Inputs (Redwood City Focused General Plan Update)

TAZ	Total Households	Total Population	Employed Residents	Single Family Households	Multi Family Households	Total Employment	Retail Employment	Service Employment	Other Employment	Agricultural Employment	Manufacturing Employment	Wholesale Employment
Citywide Total	**57,462**	**154,069**	**68,861**	**23,319**	**34,143**	**103,141**	**9,890**	**47,056**	**37,418**	**369**	**4,944**	**3,475**
1562	391	1,046	551	345	46	687	344	168	112	0	1	63
1563	488	1,311	662	458	30	124	75	21	26	0	0	4
1568	9	28	12	6	3	10,907	80	9,268	1,559	0	0	0
1569	286	806	415	206	80	18	6	6	3	0	0	3
1570	0	2	0	0	0	12	0	0	0	11	1	0
1571	658	1,511	0	0	658	241	11	95	129	2	3	0
1572	1,763	4,592	1,029	153	1,610	305	39	103	104	3	45	12
1573	1,073	2,207	1,155	333	740	277	143	41	93	0	0	0
1574	406	1,076	476	287	119	363	0	271	10	27	15	39
1575	1,210	3,320	1,527	77	1,133	346	30	274	35	5	2	0
1576	150	481	169	15	135	239	52	94	87	2	5	0
1622	983	2,477	1,309	757	226	240	4	57	171	0	9	0
1625	585	1,264	761	375	210	3,982	0	3,938	44	0	0	0
1626	0	0	0	0	0	12	0	0	0	11	1	0
1627	1,488	4,517	1,774	197	1,291	1,453	312	505	598	2	35	0
1628	1,759	4,019	2,151	0	1,759	9,320	512	2,415	6,155	10	224	5
1629	37	166	49	10	27	332	25	137	104	2	61	5
1671	396	1,003	510	255	141	18,365	3,346	5,207	8,806	0	0	1,006
1672	1,757	4,166	1,603	64	1,693	821	399	40	348	9	24	0
1673	115	265	66	0	115	10,344	661	6,378	2,556	9	566	173
1674	105	240	0	0	105	12	0	0	0	11	1	0
1675	1,318	3,143	1,229	135	1,183	653	102	16	473	9	54	0
1676	0	2	0	0	0	12	0	0	0	11	1	0
1677	46	104	39	0	46	12	0	0	0	11	1	0
1678	373	1,354	459	3	370	509	110	192	194	2	10	0
1679	2,790	6,169	2,664	13	2,777	4,881	805	1,172	1,324	10	1,393	177
1680	136	433	151	0	136	176	33	70	69	2	3	0
2001	1,164	3,092	1,639	975	189	475	55	391	21	0	9	0
2002	1,758	4,901	2,880	1,688	70	655	13	265	299	29	50	0
2003	1,366	3,584	1,807	1,169	197	2,273	49	2,124	100	0	1	0
2011	1,111	2,574	1,517	734	377	504	0	181	323	0	0	0
2012	2,932	7,362	4,329	1,925	1,007	1,138	111	632	365	0	0	30
2013	0	2	0	0	0	12	0	0	0	11	1	0
2014	787	2,786	1,034	183	604	4,019	295	1,368	1,222	0	750	385
2015	4,653	10,614	3,215	0	4,653	14,556	489	5,154	8,038	10	228	636
2016	1,068	2,781	1,388	183	885	432	12	46	358	0	15	1
2017	1,123	2,662	1,288	457	666	1,435	27	1,242	105	0	34	27
2019	1,097	3,024	1,551	1,035	62	401	31	223	61	5	80	2
2020	2,271	5,777	3,477	1,436	835	566	60	298	169	27	9	3
2021	1,705	4,550	2,222	1,063	642	1,362	81	1,006	258	13	2	4
2022	4,038	10,107	4,981	3,359	679	1,536	159	798	385	61	40	92
2023	3,476	8,825	3,836	1,107	2,369	1,746	268	1,040	351	18	10	60
2024	1,766	5,272	2,150	385	1,381	787	460	199	123	6	0	0
2025	1,256	3,517	1,725	358	898	307	29	124	130	5	21	0
2026	1,355	4,228	1,522	0	1,355	1,031	123	369	355	3	118	62
2027	1,554	5,835	2,495	709	845	1,094	156	254	349	0	156	177
2028	1,182	3,539	1,761	939	243	1,140	146	288	381	14	146	163
2029	1,807	7,366	2,588	762	1,045	2,479	180	372	947	15	696	270
2030	1,671	5,969	2,695	1,163	508	550	57	214	78	3	123	76

Source: Fehr & Peers, 2022

Note:

Additional TAZs 2022, 2027, 2028, 2029 included in Redwood City in project runs.

Table A8. Redwood City Change in Housing Units			
TAZ	Single Family Units	Multi Family Units	Accessory Dwelling Units (ADUs)
1562	0	3	3
1563	-1	0	0
1569	0	0	1
1571	0	658	0
1572	-6	683	0
1573	-182	216	41
1574	0	17	0
1575	-519	539	0
1576	-18	46	0
1621	0	0	1
1622	0	0	139
1625	0	42	0
1627	-164	365	0
1628	0	1,259	0
1671	0	24	1
1672	0	869	0
1673	0	111	0
1674	0	105	0
1675	12	97	0
1677	0	42	0
1678	-88	86	0
1679	-11	2,517	0
1680	-50	58	0
2001	0	14	64
2002	0	0	62
2003	-2	0	119
2011	102	79	8
2012	0	226	0
2014	-28	63	0
2015	-6	1,540	0
2016	-274	421	0
2017	-119	125	5
2019	0	0	48
2020	0	327	1
2021	0	600	10
2022	0	21	1
2023	-320	660	2
2024	-46	145	0
2025	-273	270	0
2026	-123	625	0
2027	-19	20	0
2028	-6	6	0
2029	-166	162	0
2030	0	37	0
Total	**-2,307**	**13,078**	**506**

Source: Fehr & Peers, 2022