

Appendix C
Air Quality Assessment

FIVE WOUNDS URBAN VILLAGE PLAN UPDATE – AIR QUALITY AND GREENHOUSE GAS ASSESSMENT

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INTRODUCTION

This report addresses the air quality and health risk impacts associated with buildout of the Five Wounds Urban Village Plan Update (the Five Wounds Plan or Plan) located in San José, California. The air quality impacts from this Plan would be associated with demolition of the existing land uses, construction of the new buildings and infrastructure, and operation of the new land uses. Air pollutants associated with construction are addressed qualitatively since construction information is not known at the detail necessary to predict meaningful impacts. Operational impacts from new buildings and increased traffic were predicted using appropriate emissions models. In addition, the potential health risk impacts from traffic increases were predicted. The impact of existing toxic air contaminant (TAC) sources affecting the new sensitive receptors proposed by the Plan were also evaluated. This report was developed following guidance provided by the Bay Area Air Quality Management District (BAAQMD).¹

PROJECT DESCRIPTION

The Plan implements the *Envision San José 2040* General Plan by creating an Urban Village as set forth by Major Strategy #5 in the General Plan. There are four existing Urban Villages within the updated plan boundary: The Five Wounds Urban Village, the Roosevelt Park Urban Village, the Little Portugal Urban Village, and the 24th and William Urban Village. These four Urban Village Plans would be consolidated into one Urban Village Plan (The Five Wounds Urban Village Update) to reflect anticipated development potential following construction and operation of the future 28th Street/Little Portugal BART station located in the approximate center of the four existing Urban Villages. This new planning area is located within an approximately half-mile radius surrounding the future 28th St./Little Portugal BART Station. The Project area is generally bounded by King Road to the east, Lower Silver Creek to the north, Coyote Creek to the west, and East San Fernando Street, East William Court, and East San Antonio Street to the south.

The Plan Update anticipates accommodating 2,000 new jobs and 6,000 housing units. To accomplish this, the newly formed Five Wounds Urban Village Plan will modify the total aggregate of housing and jobs capacities in the existing four Urban Village Plans from 4,855 jobs and 2,022 housing units to the new proposed jobs and housing capacities of 2,000 jobs and 6,000 units. The Project anticipates the redevelopment of some building and structures in the area to accommodate future development consistent with the increased housing and job capacities. New development on vacant, undeveloped, and infill sites that already exist is also expected.

SETTING

The Plan area is located in the City of San José, in Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level that apply to the air basin and the area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}).

¹ Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*, May. Web: https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en

Air Pollutants of Concern

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

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM₁₀) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ and PM_{2.5} are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality, often because they cause cancer. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015.²

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care

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

facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include the most sensitive individuals, infants, and small children. The closest sensitive receptors to the Plan area are those new residents living within the plan area in the new multi-family housing proposed by the Plan.

Regulatory Setting

Federal Regulations

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

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

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

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

State Regulations

To address the issue of diesel emissions in the state, CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*.⁴ A significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment in addition to requiring more stringent emission standards for new on-road

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

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

mobile, non-road (or off-road) mobile, and stationary diesel-fueled engine sources to reduce particulate matter emissions by 90 percent. Many measures have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, and adoption of regulations for low sulfur fuel in California.

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

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

Local Air District Guidance, Rules, and Regulations

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

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

Clean Air Plan

The BAAQMD is responsible for developing a Clean Air Plan which guides the region's air quality planning efforts to attain both the NAAQS and CAAQS. The BAAQMD's *2017 Clean Air Plan* is the current Clean Air Plan which contains district-wide control measures to reduce ozone

precursor emissions (i.e., ROG and NO_x), particulate matter (PM₁₀ and PM_{2.5}) and greenhouse gas (GHG) emissions.

Community Air Risk Evaluation Program

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.⁵ The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted as part of the CARE program: Vallejo, Concord, Richmond/San Pablo, Pittsburgh/Antioch, Western Alameda County, San José, and Eastern San Francisco. The Plan area is within the San José CARE area.

Overburdened Communities

BAAQMD Regulation 2-1-24 identifies an *overburdened* community as an area located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.⁶ The plan area involves five (5) census blocks with scores above the 70th percentile as identified by CalEnviroScreen (see Figure 1).⁷ Therefore, the Planning area would be considered an overburdened community.

Planning Healthy Places

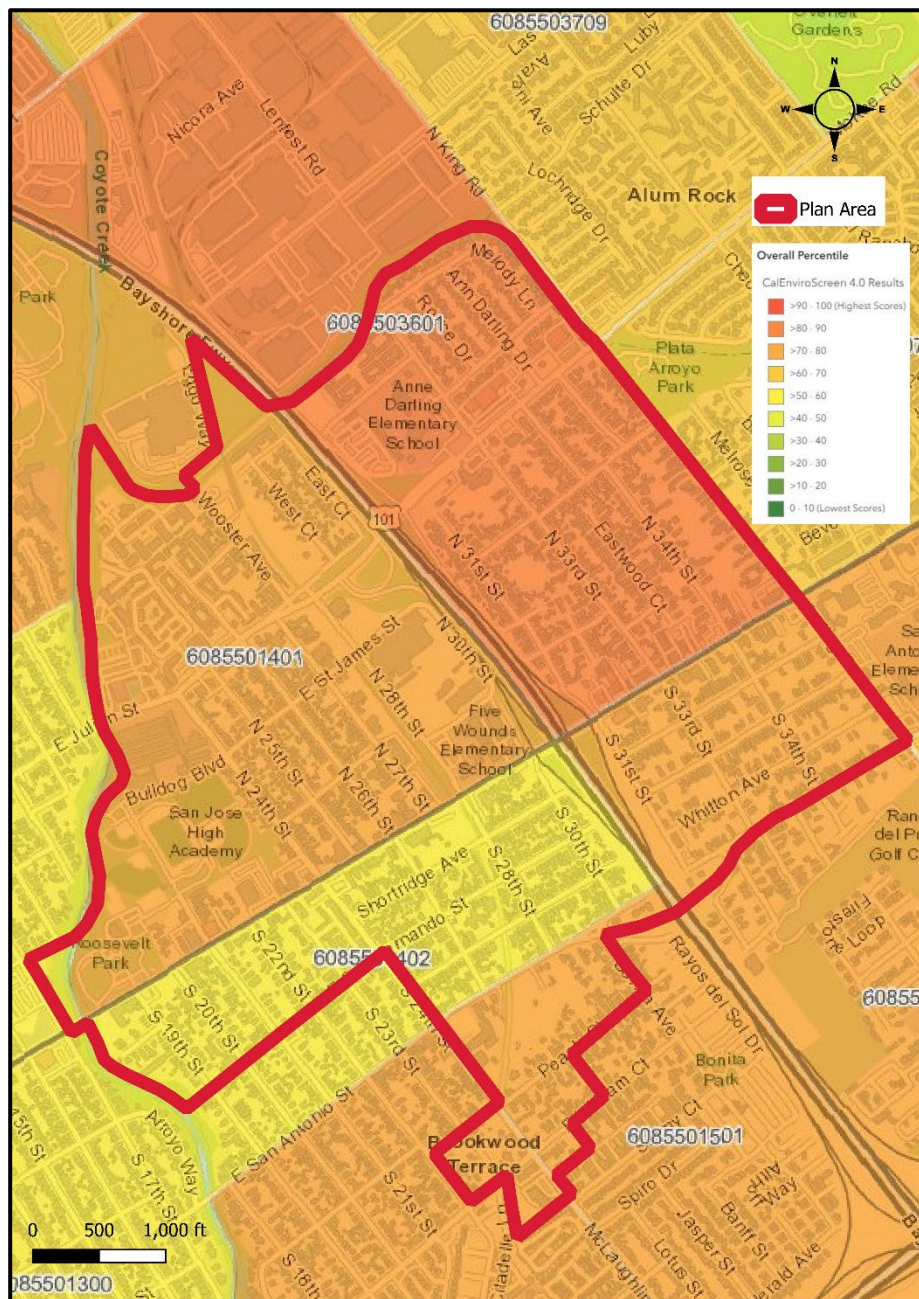
BAAQMD developed a guidebook that provides information intended to assist local governments in addressing potential issues related to exposure of sensitive receptors to local sources of air pollutants. The guidance provides tools and recommends best practices that can be implemented to reduce exposures. The information is provided as recommendations to develop policies and implementing measures for city or county General Plans, neighborhood or specific plans, land use development ordinances, or into projects.

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

⁶ See BAAQMD: https://www.baaqmd.gov/~media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.

⁷ OEHA, CalEnviroScreen 4.0 Maps <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>

Figure 1. CalEnviroScreen 4.0 Results for the Project Site and Surrounding Areas



Source: CalEnviroScreen Version 4 Mapping.

BAAQMD Stationary Source Rules and Regulations

Combustion equipment associated with the projects in the Planning area, especially new diesel engines to power emergency power generators and/or cooling towers, would be new sources of particulate matter and gaseous emissions. Therefore, they would be subject to BAAQMD's stationary source Regulations and Rules and would require permits.

California Environmental Quality Act Air Quality Guidelines

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under the California Environmental Quality Act (CEQA). The thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts. These thresholds were litigated through a series of court challenges and were mostly upheld.

The first adopted thresholds were published in the District's *2011 CEQA Air Quality Guidelines*. BAAQMD updated their CEQA Guidelines and significance thresholds in 2017 and again in 2022. The current *CEQA Air Quality Guidelines*⁸ provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for TACs, odors, and GHG emissions. Table 1 provides the Local Long-Range Plan Thresholds of Significance and Table 2 provides the project-specific thresholds of significance. Impacts from the Plan update are compared against the thresholds in Table 1, while specific projects proposed in the planning area are subject to the thresholds in Table 2.

Table 1. BAAQMD Recommended Plan-Level CEQA Significance Thresholds

Pollutant/Contaminant	Construction	Operational
Criteria Air Pollutants (Regional)	None	1. Consistency with Current Air Quality Plan control measures, and 2. Project VMT or vehicle trip increase is less than or equal to projected population increase
Local Risks and Hazards¹	None	1. Overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas), and 2. Overlay zones of at least 500 feet from all freeways and high-volume roadways
Odors	None	Identify the location, and include policies to reduce the impacts, of existing or planned sources of odors
Climate Impacts	None	1. Meet State's goals to reduce emissions to 40% below 1990 levels by 2030 and carbon neutrality by 2045; or 2. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b)

¹ Overlay zones are based on potential for TAC sources to result in impacts above the project-level single-source thresholds for health risks and hazards. See Table 2.

⁸ Bay Area Air Quality Management District, 2022. *CEQA Air Quality Guidelines*. April.

Table 2. BAAQMD Recommended Project-Level CEQA Significance Thresholds

Table 2: BAAQMD Recommended Project Level CEQA Significance Thresholds				
Criteria Air Pollutant	Construction Thresholds		Operational Thresholds	
	Average Daily Emissions (lbs./day)		Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54		54	10
NO _x	54		54	10
PM ₁₀	82 (Exhaust)		82	15
PM _{2.5}	54 (Exhaust)		54	10
CO	Not Applicable		9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices (BMPs)*		Not Applicable	
Health Risks and Hazards	Single Sources/ Individual Project		Combined Sources (Cumulative from all sources within 1000-foot zone of influence)	
Excess Cancer Risk	>10 in a million	OR Compliance with Qualified Community Risk Reduction Plan	>100 in a million	OR Compliance with Qualified Community Risk Reduction Plan
Hazard Index	>1.0		>10.0	
Incremental annual PM _{2.5}	>0.3 µg/m ³		>0.8 µg/m ³	
Greenhouse Gas Emissions				
Land Use Projects – (Must Include A or B)	A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor’s Office of Planning and Research’s Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).			
Odor				
5 confirmed complaints per year averaged over 3 years				
Note: ROG = reactive organic gases, NO _x = nitrogen oxides, PM ₁₀ = coarse particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.				
* BAAQMD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.				

Source: Bay Area Air Quality Management District, 2022

City of San José

San José Envision 2040 General Plan

The San José Envision 2040 General Plan includes goals, policies, and actions to reduce exposure of the City's sensitive population to exposure of air pollution and toxic air contaminants or TACs. The following goals, policies, and actions are applicable to the proposed project and this assessment:

Applicable Goals – Air Pollutant Emission Reduction

Goal MS-10 Minimize emissions from new development.

Applicable Policies – Air Pollutant Emission Reduction

- MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.
- MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.
- MS-10.3 Promote the expansion and improvement of public transportation services and facilities, where appropriate, to both encourage energy conservation and reduce air pollution.
- MS-10.5 In order to reduce vehicle miles traveled and traffic congestion, require new development within 2,000 feet of an existing or planned transit station to encourage the use of public transit and minimize the dependence on the automobile through the application of site design guidelines and transit incentives.
- MS-10.7 Encourage regional and statewide air pollutant emission reduction through energy conservation to improve air quality.
- MS-10.11 Enforce the City's wood-burning appliance ordinance to limit air pollutant emissions from residential and commercial buildings.
- MS-10.13 As a part of City of San José Sustainable City efforts, educate the public about air polluting household consumer products and activities that generate air pollution. Increase public awareness about alternative products and activities that reduce air pollutant emissions.

Applicable Goals – Toxic Air Contaminants

Goal MS-11 Minimize exposure of people to air pollution and toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Applicable Policies – Toxic Air Contaminants

- MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.
- MS-11.2 For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.
- MS-11.4 Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.
- MS-11.5 Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions – Toxic Air Contaminants

- MS-11.6 Develop and adopt a comprehensive Community Risk Reduction Plan that includes baseline inventory of TACs and PM_{2.5}, emissions from all sources, emissions reduction targets, and enforceable emission reduction strategies and performance measures. The Community Risk Reduction Plan will include enforcement and monitoring tools to ensure regular review of progress toward the emission reduction targets, progress reporting to the public and responsible agencies, and periodic updates of the plan, as appropriate.
- MS-11.7 Consult with BAAQMD to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.
- MS-11.8 For new projects that generate truck traffic, require signage which reminds drivers that the State truck idling law limits truck idling to five minutes.

Applicable Goals – Objectionable Odors

- Goal MS-13 Minimize and avoid exposure of residents to objectionable odors.

Applicable Policies – Objectionable Odors

- MS-12.1 For new, expanded, or modified facilities that are potential sources of objectionable odors (such as landfills, green waste and resource recovery facilities, wastewater

treatment facilities, asphalt batch plants, and food processors), the City requires an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.

- MS-12.2 Require new residential development projects and projects categorized as sensitive receptors to be located an adequate distance from facilities that are existing and potential sources of odor. An adequate separation distance will be determined based upon the type, size, and operations of the facility.

Applicable Goals – Construction Air Emissions

Goal MS-13 Minimize air pollutant emissions during demolition and construction activities.

Applicable Policies – Construction Air Emissions

- MS-13.1 Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.

Applicable Actions – Construction Air Emissions

- MS-13.4 Adopt and periodically update dust, particulate, and exhaust control standard measures for demolition and grading activities to include on project plans as conditions of approval based upon construction mitigation measures in the BAAQMD CEQA Guidelines.
- MS-13.5 Prevent silt loading on roadways that generates particulate matter air pollution by prohibiting unpaved or unprotected access to public roadways from construction sites.
- MS-13.6 Revise the grading ordinance and condition grading permits to require that graded areas be stabilized from the completion of grading to commencement of construction.

Five Wounds Urban Village Plan

The Five Wounds Urban Village Plan is centered on the development of the planned 28th Street BART station located on the San José Steel site, generally bounded by East Saint James Street, North 28th Street, and North 30th Street. It was originally approved by the City in November of 2013 and later amended in 2018, 2020, and 2022. It was part of the first group of Urban Village Plans developed by the City to further the strategies identified in the General Plan. It established a framework for transitioning the area into a vibrant mixed-use and pedestrian-oriented district, taking advantage of the public transportation services in the area.

Currently, the Five Wounds Urban Village contains a variety of land uses including large, two- to three-story industrial buildings; public/quasi-public uses; a few small one-story commercial

buildings; and one-story single-family detached residences, and two-story apartments. The goal of this Village Plan is to support and complement the planned Bus Rapid Transit System (BRT) along East Santa Clara Street and the 28th Street BART Station by creating a mix of neighborhood-serving uses, employment opportunities, and high-density housing around a town square that would provide residents with the opportunity to meet many of their daily needs by walking, bicycling, or taking transit.

This Village Plan establishes a commercial/employment square footage objective and residential unit planned capacity. The overall objective is to develop an additional approximately 1,215,000 square feet of commercial/employment space in addition to the existing approximately 597,594 commercial square footage. The planned dwelling unit capacity for the residential portion of mixed-use developments is 845 units.

Roosevelt Park Urban Village Plan

The Roosevelt Park Urban Village Plan is centered on E. Santa Clara Street between the Coyote Creek and U.S. Highway 101. It was originally approved by the City in November of 2013 and later amended in 2018, and 2022. The Plan was one of four developed by the City to further the strategies identified in the General Plan. It established a framework for transitioning the area into a vibrant mixed-use and pedestrian-oriented area, taking advantage of the public transportation services in the area.

Currently, East Santa Clara Street, between the Coyote Creek and U.S. Highway 101, consists of the Roosevelt Community Center and Park and one- and two-story commercial buildings that contain restaurants, ethnic and convenience markets, medical offices, and community-serving retail stores and services. The corridor also includes a few older mixed-use buildings that have ground floor commercial with apartments above.

The goal of this Village Plan is to retain and expand upon the existing mix of community-serving commercial uses and the pedestrian orientation of much of the area, and integrate new high-density housing as well as taller, more urban development into the corridor. It establishes a commercial/employment square footage objective and residential unit planned capacity for the overall Urban Village. The overall objective is to develop a total of approximately 526,000 square feet of commercial/employment space, which equates to the existing job square footage (of approximately 344,500 square feet) plus new planned jobs square footage (of approximately 181,500 square feet). The planned dwelling unit capacity for the residential portion of mixed-use residential/commercial developments is 650 units.

Little Portugal Urban Village Plan

The Little Portugal Urban Village Plan is centered on Alum Rock Avenue, between U.S. Highway 101 and Kings Road. It was originally approved by the City in November of 2013 and later amended in 2018, and 2022. The Plan was one of four developed by the City to further the strategies identified in the General Plan. It established a framework for transitioning the area into a vibrant mixed-use and pedestrian-oriented area, taking advantage of the public transportation services in the area.

Currently, the planning area consists predominately of one-story commercial buildings that contain restaurants, ethnic and convenience markets, medical offices, and community-serving retail stores and services. The corridor also includes a few older mixed-use buildings that have ground floor commercial with apartments above.

The goal of this Village Plan is to retain and expand upon the existing mix of community-serving commercial uses and the pedestrian orientation of much of the area, and integrate new high-density housing as well as taller, more urban development into the corridor. It establishes a commercial/employment square footage objective and residential unit planned capacity for the Urban Village overall. The employment objective for the Little Portugal Urban Village is to add approximately 30,000 square feet of commercial square feet to the existing approximately 118,000 square feet of commercial for an overall amount of approximately 148,000 square feet of commercial square footage. The overall planned dwelling unit capacity for the Little Portugal Urban Village is 400 dwelling units, which includes the estimated 90 existing dwelling units and the 310 new planned housing units.

24th and William Urban Village Plan

The 24th and William Urban Village Plan is along the 24th Street Corridor between San Antonio Street to just south of William Street. It was originally approved by the City in November of 2013 and later amended in 2018, and 2022. The Plan was one of four developed by the City to further the strategies identified in the General Plan. It established a framework for transitioning the area into a vibrant mixed-use and pedestrian-oriented area, taking advantage of the public transportation services in the area.

Currently, the planning area is largely a single-family neighborhood, that also contains a corner market, a grocery store, a bakery, a coin laundry and a number of other neighborhood-serving retail uses that are within walking distance for many residents. The area also includes a number of industrial, auto related, small manufacturing and food processing businesses.

The goal of this Village Plan is to maintain and then expand the current mix of land uses to reinforce the 24th and William Urban Village as a complete mixed-use community. It establishes a commercial/employment square footage objective and residential unit planned capacity for the Urban Village overall. The employment objective for the whole Village is to develop an additional 30,000 square feet of non-residential/employment square footage over the existing amount of commercial and industrial square footage. The planned dwelling unit capacity is 217 new housing units, to be developed as part of mixed-use developments.

AIR QUALITY IMPACTS AND APPLICABLE MITIGATION MEASURES

Air pollutant emissions and associated health risks were estimated for the new Five Wounds Planning area given the proposed changes to the residential units and jobs (i.e., commercial/office square footages) provided. Appropriate emissions models and BAAQMD screening tools were used in the analysis. Emissions from the proposed land use scenarios were estimated using the

latest version of the California Emissions Estimator Model (CalEEMod) (Version 2022.1.1.23) and the Caltrans version of CARB's latest on-road vehicle emissions model, EMFAC2021 (i.e., CT-EMFAC2021). The output from CalEEMod is included as *Attachment 1* and CT-EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 2*.

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

The BAAQMD, with assistance from the Metropolitan Transportation Commission (MTC), has prepared and implemented a plan, the *Bay Area 2017 Clean Air Plan*,⁹ to meet the applicable laws, regulations, and programs related to air quality. They have also developed CEQA guidelines to assist lead agencies in evaluating the significance of air quality impacts. In formulating compliance strategies, BAAQMD relies on planned land uses established by local general plans and specific area plans, like the Five Wounds Plan. Land use planning affects vehicle travel, which in turn affects region-wide emissions of air pollutants and GHGs.

Clean Air Plan Control Measures

The consistency of the Five Wounds Plan with the control measures in the *Bay Area 2017 Clean Air Plan* is demonstrated by assessing whether it implements the applicable Clean Air Plan control measures. The 2017 Clean Air Plan includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided into five categories that include:

- 40 measures to reduce stationary and area sources;
- 8 mobile source measures;
- 23 transportation control measures (including land use strategies);
- 4 building sector measures;
- 2 energy sector measures;
- 4 agriculture sector measures;
- 3 natural and working lands measures;
- 4 waste sector measures;
- 2 water sector measures; and
- 3 super-GHG pollutants measures.

In developing the control strategy, BAAQMD identified the full range of tools and resources available, both regulatory and non-regulatory, to develop each measure. Implementation of each control measure will rely on some combination of the following:

- Adoption and enforcement of rules to reduce emissions from stationary sources, area sources, and indirect sources.
- Revisions to the BAAQMD's permitting requirements for stationary sources.
- Enforcement of CARB rules to reduce emissions from heavy-duty diesel engines.
- Allocation of grants and other funding by the Air District and/or partner agencies.

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

- Promotion of best policies and practices that can be implemented by local agencies through guidance documents, model ordinances, and other measures.
- Partnerships with local governments, other public agencies, the business community, non-profits, and other groups.
- Public outreach and education.
- Enhanced air quality monitoring.
- Development of land use guidance and CEQA guidelines, and Air District review and comment on Bay Area projects pursuant to CEQA.
- Leadership and advocacy.

This approach relies upon lead agencies to assist in implementing some of the control measures. A key tool for local agency implementation is the development of land use policies and implementing measures that address new development or redevelopment in local communities. To address this impact, the General Plan's effect on implementing the Clean Air Plan is evaluated based on consistency with Clean Air Planning projections (i.e., rate of increase in population versus vehicle travel).

The Five Wounds Plan is consistent with the Clean Air Plan control measures because it would reduce the number of stationary and area sources by transitioning light industrial land uses to residential uses. It would also reduce mobile sources emissions through locating new residential units in proximity to existing and new enhanced public transportation facilities, encouraging active modes of transportation. The Plan would also not disrupt or hinder the implementation of other Clean Air Plan control measures.

Consistency with Clean Air Plan Projections

Regional transportation conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS. MTC develops regional transportation plans (RTPs) for the Bay Area, while BAAQMD develops plans for attaining the NAAQS, CAAQS, and GHG emissions targets. MTC's RTPs are based on land use and growth assumptions, as are BAAQMD's Clean Air Plans. Conformity of a RTP to a Clean Air Plan is based on emission analyses that use travel demand models and emission models to determine if traffic emissions from planned growth would conform to emission budgets or other tests detailed in the Clean Air Plan. If the analysis is successful, the federal government (Federal Highways Administration and Federal Transit Administration), make the determinations that the RTP conforms with the Clean Air Plan (i.e., State Implementation Plan).

The 2017 Clean Air Plan used MTC's Regional Long Range Transportation Plan (at the time it was *Plan Bay Area 2040*) as its basis for estimating emissions for the region. *Plan Bay Area 2040* relied on growth and land use estimates provided by local governments (i.e., cities and transportation authorities) to provide its planning assumptions. The growth assumptions contained in the *San José Envision 2040 General Plan* were included in *Plan Bay Area 2040*. Therefore, the *San José Envision 2040 General Plan* is consistent with BAAQMD's Clean Air Plan 2017. Additionally, the federal government determined that *Plan Bay Area 2040* conforms to the State's plan for achieving compliance with the NAAQS on August 23, 2017.

The proposed Five Wounds Plan would shift 6,000 residential units into the area and reduce the proposed jobs for the area from 10,604 to 8,366. Hexagon Transportation Consultants conducted an analysis of the impacts to traffic in the planning area and compared it to the current general Plan (*San José Envision 2040 General Plan*).¹⁰ Area VMT was estimated at 6.2 miles per service population (i.e., population plus jobs) under the current General Plan build-out conditions. The Five Wounds Plan VMT projections of 5.2 miles per capita (8.4 miles per resident) would not exceed the General Plan VMT growth rate compared to population growth. VMT per capita would not increase when compared to the current 2040 General Plan conditions and, when compared to service population, VMT would actually decrease in the area. This is indicative of an increase in opportunities to use public transportation and active (i.e., non-auto) modes of travel resulting in a reduction in the number and length of trips in the area. Thus, The Five Wounds Plan would be consistent with the City's General Plan, which is consistent with BAAQMD's Clean Air Plan.

Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under the NAAQS or CAAQS?

The Bay Area is considered a non-attainment area for ground-level ozone and PM_{2.5} under both the Federal Clean Air Act (i.e., NAAQS) and the California Clean Air Act (i.e., CAAQS). The area is also considered non-attainment for PM₁₀ CAAQS. In an effort to attain and maintain the NAAQS for ozone and PM_{2.5} and the CAAQS for PM₁₀, the BAAQMD has established thresholds of significance for these air pollutants and their precursors; ROG, NO_x, PM₁₀, and PM_{2.5}. Thresholds apply to both construction period and operational period emissions for plans and projects. As previously described, the *San José Envision 2040 General Plan* includes the following policies or actions related to project-level Air Quality that would serve to minimize air pollutant emissions:

- MS-10.1 Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.
- MS-10.2 Consider the cumulative air quality impacts from proposed developments for proposed land use designation changes and new development, consistent with the region's Clean Air Plan and State law.

Construction Emissions

Emissions commonly associated with construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. During construction, fugitive dust, the dominant source of PM₁₀ and PM_{2.5} emissions, is generated when wheels or blades disturb surface materials. Uncontrolled dust from construction activities can become a nuisance and potential

¹⁰ Five Wounds Urban Village Plan Update Transportation Analysis, Hexagon Transportation Consultants, Inc. City of San José. April 18, 2024.

health hazard to those living and working nearby. The potential health risk impact from construction is addressed under *Impact Air-3*.

The BAAQMD has not established CEQA significance thresholds for construction emissions at the plan-level. There are, however, project-level construction emissions thresholds of 54 pounds per average day for NO_x, ROG and PM_{2.5} exhaust and 82 pounds per average day for PM₁₀ exhaust. Unless controlled, the combination of temporary dust from activities and diesel exhaust from construction equipment may pose a nuisance impact to nearby receptors or exceed acceptable levels for projects. In addition, NO_x emissions during grading and soil import/export for large projects may exceed the BAAQMD NO_x emission threshold of 54 pounds per average day.

Construction emissions associated with the Five Wounds Plan would be considered significant as a whole if full buildout were considered to be one “project.” However, the plan would be built out over many years as a series of individual development projects. The City of San José General Policy MS-10.1 specifies that individual construction projects should assess projected air emissions from new developments in conformance with the BAAQMD CEQA Guidelines and relative to State and federal standards. Each project must identify and implement feasible air emission reduction measures including the BMPs recommended by BAAQMD. Feasible air emission reduction measures have been adopted by the City as Standard Permit Conditions (per General Plan policies MS 10.1, MS 13.1, and MS 13.4) during all phases of construction to reduce dust and other particulate matter emissions. Therefore, all construction projects in the Five Wounds Planning Area would be required to meet the City’s Standard Permit Conditions.

Standard Permit Conditions: Include measures to control dust and exhaust during construction.

The following measures shall be implemented during all phases of construction to control dust and exhaust at the project site:

- A. Water all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) two times per day.
- B. Cover all haul trucks transporting soil, sand, or other loose material off-site.
- C. Remove all visible mud or dirt track out onto adjacent public roads at least once per day using wet power vacuum street sweepers. The use of dry power sweeping is prohibited.
- D. Limit all vehicle speeds on unpaved roads to 15 mph.
- E. Pave all new roadways, driveways, and sidewalks as soon as possible.
- F. Lay building pads as soon as possible after grading unless seeding or soil binders are used.
- G. Suspend all excavation, grading, and/or demolition activities when average wind speeds exceed 20 mph.

- H. Wash off all trucks and equipment, including their tires, prior to leaving the site.
- I. Treat unpaved roads providing access to sites located 100 feet or further from a paved road with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- J. Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at all access points to the site.
- K. Maintain and properly tune all construction equipment in accordance with the manufacturer's specifications. Check all equipment with a certified mechanic and record a determination of running in proper condition prior to operation.
- L. Post a publicly visible sign with the name and phone number of an on-site construction coordinator to contact regarding dust complaints. The on-site construction coordinator shall respond and take corrective action within 48 hours. The sign shall also provide the City's Code Enforcement Complaints email and number and the Air District's General Air Pollution Complaints number to ensure compliance with applicable regulations.

Additionally, the City requires future construction Projects in the Five Wounds Planning Area to estimate construction period emissions using modeling methodologies recommended by BAAQMD and approved by the City.

The average daily emissions predicted for each construction project would be compared against BAAQMD project-level thresholds identified in Table 2. Projects that have emissions exceeding the thresholds would be required to implement BAAQMD "enhanced" control measures to achieve emissions below the thresholds.

Operational Period Emissions

The Five Wounds Plan Update changes future air emissions in the planning area, primarily due to changes in the amount of traffic forecasted for the area from autos driven by future residents, employees, customers, and vendors. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from the types of uses proposed by the Plan. CalEEMod and CT-EMFAC2021 were used to estimate emissions from the operation of the Five Wounds Plan Update assuming full build-out. Similar to construction, BAAQMD does not have thresholds that apply to build out of plans.

CalEEMod Modeling

The latest version of CalEEMod was used to estimate the increase in criteria pollutant emissions associated with build out of the Five Wounds Plan Update. Three scenarios were modeled for the

area: existing conditions (2015), the current General Plan (2040), and the Current General Plan with the changes proposed by the Five Wounds Plan Update (2040).

Land Use Inputs

The City provided the number of residential units and jobs for each scenario. Residential units were modeled as single-family homes. Jobs were split between retail and non-retail categories. CalEEMod needs square footages (sq. ft.) of specific land use types instead of jobs to estimate emissions. Therefore, two land use types were selected to represent jobs in the area. Retail jobs were represented by the “Free Standing Discount Store” category and non-retail jobs by the “General Office Building” category. The estimated number of jobs provided was converted to sq. ft. using the City’s Market Overview and Employment Land Analysis.¹¹ The land use inputs used for each scenario are summarized in Table 3.

Table 3. Operational Land Uses Entered into CalEEMod

Scenario	Land Uses		
	Residential (number of units)	Retail (1,000 sq. ft.)	Non-Retail (1,000 sq. ft.)
Existing (2015)	6,883	234	926
General Plan (2040)	8,909	331	1,856
General Plan + Five Wounds Plan	14,909	302	1,464

Energy

The Five Wounds planning area is served by San José Clean Energy (SJCE). However, service from SJCE was not available until 2019. Therefore, default emissions rates for Pacific Gas & Electric Company (PG&E) were used for the 2015 analysis, and SJCE was used as the energy provider in 2040. Default GHG emissions rates were used for PG&E, while an emissions rate of 162 pounds CO₂e/MWh was used for SJCE.¹² The analysis also assumes 2019 Building Code for building energy efficiency requirements.

PG&E was used as the natural gas provider for the area for all analysis years. The City does have a Reach Code that prohibits natural gas usage in new residential developments and most businesses. However, this was not in place in 2015 and in April 2023 a federal appeals court struck down a similar ordinance in the City of Berkeley. The ruling will become final unless the California Supreme Court decides to review the case. Once final, the City’s reach code could be invalidated. Thus, both the General Plan and General Plan plus Five Wounds Plan Update analyses were conducted using default natural gas usage values and a mitigation measure that would make all new residential developments 100 percent electric (i.e., E-15 Require All-Electric Development).

Hearths

¹¹ Figure A-4, *San José Market Overview and Employment Lands Analysis*, City of San José. January 20, 2016.

¹² - <https://sanjosecleanenergy.org/commercial-rates/>

CalEEMod default inputs assume no wood-burning fireplaces. However, it does assume natural gas fireplaces are present in a portion of all residential buildings. The analysis was conducted using CalEEMod defaults for natural gas fireplaces.¹³

Waste

Default model assumptions for emissions associated with solid waste generation and water use were used. Wastewater treatment was estimated to be 100% aerobic conditions to represent City wastewater treatment plant conditions. No on-site septic tanks or facultative lagoons would be allowed as part of the Five Wounds Plan Update.

Traffic and Vehicle Miles Traveled (VMT)

Hexagon provided traffic impacts for each scenario in VMT by five mile-per-hour speed bin format. Therefore, CalEEMod was not used to estimate emissions from traffic impacts. Therefore, the Caltrans version of CARB's on-road vehicle emissions fact or model, CT-EMFAC was used. This allows for a more accurate comparison of the emissions impacts.

CT-EMFAC2021 Modeling

CT-EMFAC2021 was used to estimate traffic (or mobile source) emissions associated with the three scenarios: existing, General Plan, and General Plan with Five Wounds Plan Update.

Daily VMT forecasts from the City's travel demand forecasting model for each scenario were placed into one of 12 speed bins using increments of 5 mph. These were then input into Caltrans' CT-EMFAC2021 emissions model, which is based on CARB's EMFAC2021 emissions model. EMFAC2021 became available for use in January 2021 and was approved by the EPA in November 2022. It includes the latest data on California's car and truck fleets and travel activity. CT-EMFAC2021 was run in both emissions rate mode and inventory mode for each of the analysis scenarios (Existing, General Plan, and General Plan with Five Wounds Plan Update) with a mix of vehicles in Santa Clara County. Hexagon provided the average truck percentages for the planning area using Caltrans traffic census data. It was estimated the truck percentage in the area is 5.8 percent. It was assumed this truck percentage would remain the same for each of the scenarios. *Attachment 2* provides the CT-EMFAC2021 emissions model outputs and emissions calculations.

Since EMFAC2021 was developed, CARB has adopted new rules that amended the *Advanced Clean Cars* regulation that are not reflected in EMFAC2021 modeling. This regulation will establish a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035, including plug-in hybrid electric vehicles. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions.

¹³ Note the CalEEMod mitigation measure to make residential units 100 percent electric does not remove natural gas hearths from the analysis.

Fugitive Road Dust

CT-EMFAC2021 calculates fugitive PM₁₀/PM_{2.5} emissions based on CARB silt loading, tire wear, and brake wear factors and the daily VMT data provided. Emissions were modeled using the silt loading factor for a Major/Collector roadway. This value is in between the factor local urban roadways and Freeways. Freeways have the lowest factor, while local roadways have the highest factor. *Attachment 2* provides the CT-EMFAC2021 emissions model outputs and emissions calculations.

Operational Period Emissions Analysis

Operational period emissions for the three scenarios are reported in Table 4 in total tons and average daily emissions. CalEEMod calculates both annual and average daily emissions, while traffic data was provided for daily VMT only. Thus, to estimate annual mobile source emissions, daily emissions were multiplied by 365 days of operation per year. There are no emission thresholds that apply to potential emissions generated by the buildout of a plan, such as the Five Wounds Plan Update. Instead, a plan is found to have less-than-significant impacts if it is consistent with current air quality plans (BAAQMD's 2017 Clean Air Plan) and has a VMT increase less than or equal to projected population increases. The Five Wounds Plan Update would reduce VMT in the planning area when compared to the 2040 General Plan. It would also conform with the 2017 Clean Air Plan, as discussed in *IMPACT AIR-1* above. Therefore, the criteria pollutant impacts associated with the Five Wounds Plan Update would be considered less-than-significant per BAAQMD's plan-level CEQA thresholds.

The buildout of the plan will be conducted through a series of "projects" that must meet BAAQMD's project-level CEQA thresholds. For that reason, the operational period emissions estimates are compared against project-level BAAQMD thresholds to inform the City as to what mitigations may be needed at the project-level as the Five Wounds Plan Update is put into action.

As shown in Table 4, average daily and annual emissions of ROG and NO_x associated with build-out of the Five Wounds Plan Update would exceed the BAAQMD project-level significance thresholds. Likewise, the Five Wounds Plans Update would increase annual and daily ROG and NO_x emissions when compared to the 2040 General Plan build out. BAAQMD project-level significance thresholds for PM₁₀ and PM_{2.5} would be exceeded by both the 2040 General Plan build-out and the General Plan with the Five Wounds Plan Update. However, when the 2040 General Plan is compared to the with the Five Wounds Plan Update, the BAAQMD project-level significance thresholds for PM₁₀ and PM_{2.5} would not be exceeded.

Table 4 Operational Period Emissions

Annual Criteria Pollutant Emissions (ton/year)					
Scenario	Source	ROG	NO_x	PM₁₀	PM_{2.5}
Existing Conditions (2015)	Mobile	886	3,703	1,015	224
	Area	73	1	0.1	0.04
	Energy	1	16	1	1
	TOTAL	959	3,719	1,016	225
General Plan 2040	Mobile	431	705	1445	264
	Area	95	1	0.05	0.04
	Energy	1	21	2	2
	TOTAL	527	727	1,447	266
General Plan with Five Wounds Update	Mobile	431	705	1,445	264
	Area	150	1.0	0.06	0.05
	Energy	2	34	3	3
	TOTAL	583	739	1,448	267
<i>Difference Between Existing and Five Wounds Plan Update</i>		-376	-2,980	+431	+41
<i>Difference Between General Plan and Five Wounds Plan Update</i>		+56	+13	+1	+1
<i>BAAQMD Project-Level Thresholds (tons per year)</i>		<i>10 tons project</i>	<i>10 tons project</i>	<i>15 tons project</i>	<i>10 tons project</i>
Daily Criteria Pollutant Emissions (lbs/day)					
Scenario	Source	ROG	NO_x	PM₁₀	PM_{2.5}
Existing Conditions (2015)	Mobile	4,854	20,293	5,560	1,230
	Area	397	3	0.3	0.2
	Energy	5	87	7	7
	TOTAL	5,256	20,383	5,567	1,237
General Plan 2040	Mobile	2,364	3,865	7,919	1,445
	Area	521	3	0.25	0.21
	Energy	7	116	9	15
	TOTAL	2,892	3,985	7,929	1,460
General Plan with Five Wounds Update	Mobile	2,363	3,864	7,916	1,445
	Area	820	5.4	0.35	0.29
	Energy	11	184	15	15
	TOTAL	3,194	4,054	7,931	1,460
<i>Difference Between Existing and Five Wounds Plan Update</i>		-2,062	-16,329	+2,364	+223
<i>Difference Between General Plan and Five Wounds Plan Update</i>		+302	+69	+2.5	-0.5
<i>BAAQMD Thresholds (pounds per day)</i>		<i>54 lbs. project</i>	<i>54 lbs. project</i>	<i>82 lbs. project</i>	<i>54 lbs. project</i>

Because operational emissions associated with the Five Wounds Plan Update are considered potentially significant:

MM AQ-1: Require project-level analysis of the criteria pollutant emissions associated with operations. Should either ROG and/or NOx emissions exceed BAAQMD thresholds, additional mitigation measures would be required. Specifically:¹⁴

MM AQ-1a: Proposed development within the Five Wounds Planning Area shall incorporate additional green building measures such as rooftop solar photovoltaic (PV) systems, rough-ins for electric vehicle charging, use of efficient lighting and irrigation, and recycled water, as feasible, to the satisfaction of the Community Development Director.

MM AQ-1b: Developed parcels shall require within their covenants, conditions, and restrictions (CC&Rs) and/or ground leases requirements for all future interior spaces to be repainted only with architectural coatings that meet the “Low-VOC” or “Super-Compliant” requirements. “Low-VOC” refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District (AQMD) Rule 1113; however, many manufacturers have reformulated to levels well below these limits. These are referred to as “Super-Compliant” Architectural Coatings.

Significant ROG and NOx Emissions during Project Operation

Ozone is not emitted directly from pollution sources. Instead, it is formed in the atmosphere through complex chemical reactions in the presence of sunlight between ROG and NO_x. As air temperatures rise, the formation of ground level ozone increases at an accelerated pace. Ozone levels are usually highest on clear, hot, windless summer afternoons, especially in inland valleys that are downwind of pollution sources.

Ozone is a powerful oxidant that is harmful to public health at high concentrations. At high levels, ozone can damage the tissues of the lungs and respiratory tract, irritating the nose, throat, and respiratory system and constricting the airways.¹⁵ Elevated ozone concentrations can aggravate other respiratory conditions such as asthma, bronchitis, and emphysema, causing increased hospital admissions. Repeated exposure to high ozone levels can make people more susceptible to respiratory infection and lung inflammation and permanently damage lung tissue. Ozone exposure can also have negative cardiovascular impacts, including chronic hardening of the arteries and acute triggering of heart attacks. Children are most at risk, as they tend to be active and outdoors in the summer, when ozone levels are highest. Seniors and people with respiratory illnesses are also especially sensitive to ozone’s effects. Even healthy adults, working or exercising outdoors during high ozone levels, can be affected.

Ozone is a regional pollutant. Emissions in one part of the region can impact air quality miles downwind. Thus, efforts to reduce ozone levels focus on reducing emissions of ROG and NO_x

¹⁴ A TDM plan would also be considered a mitigation measure. However, TDM plans are also required mitigation for traffic impacts. Thus, the TDM plan sufficient to mitigate traffic/VMT impacts would be sufficient to mitigate air quality impacts associated with a project’s increase in traffic.

¹⁵ See: California Air Resource Board, Web: <https://ww2.arb.ca.gov/resources/ozone-and-health>

throughout the region. The relationship between ROG and NO_x in ozone formation is complex; the ratio between the precursor pollutants influences how ozone forms. BAAQMD's ozone modeling indicates that the Bay Area is "ROG-limited" for ozone formation. This means that reducing ROG emissions in the Bay Area will be more productive in reducing ozone concentration. However, modeling also suggests that large reductions in NO_x emissions will be needed to achieve the ozone reductions required to attain the current health-based ozone standards (NAAQS and CAAQS). A certain amount of ozone formation occurs naturally, even in the absence of anthropogenic emissions of ROG and NO_x.¹⁶

When evaluated using the BAAQMD CEQA thresholds, the Five Wounds Plan Update would have significant emissions of ozone precursor pollutants (ROG and NO_x) at buildout. These emissions cannot be feasibly reduced further, as the proposed plan update includes features and mitigation measures to minimize these emissions. Such features include mix-use developments near transit, implementation of an enhanced TDM plan, and mitigation measures to reduce evaporative ROG emissions from architectural coatings. Emissions of ROG associated with consumer product use are the overwhelming contributor to ROG emissions. These emissions cannot be controlled by the proposed plan update. Emissions associated with traffic would be the overwhelming contributor of NO_x. A TDM plan will be implemented as part of the plan's buildout to assist in the control of emissions from traffic, but further reduction of NO_x cannot be achieved.

Emissions of ROG and NO_x result in a cumulatively considerable net increase of criteria pollutants for which the region is in nonattainment under an applicable ambient air quality standard. As a result, the Five Wounds Plan Update would result in a cumulatively considerable net increase in pollutant emissions that contribute to elevated ozone concentrations that exceed ambient air quality standards.

As stated in the BAAQMD CEQA Guidelines, air pollution by its nature is largely a cumulative impact. Large development plans, like the Five Wounds Plan Update, often have significant and unavoidable adverse air quality impacts related to the cumulative impacts of growth on air quality. In addition, plans generally have implementation horizons of 20 years or more. For these reasons, it is essential for plans to incorporate all feasible strategies and measures to reduce air quality impacts.

Mitigation measures for plans are often broad in scope because of the long timeframe and comprehensive nature of plan policies and programs. Plans are the appropriate place to establish communitywide air quality policies that reinforce regional air quality plans, establish requirements for new construction to support continued improvements in local and regional air quality, and avoid inhibiting attainment of the NAAQS and CAAQS. No single development project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a development's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

¹⁶ Bay Area Air Quality Management District, 2017. *Spare the Air Cool the Climate Final 2017 Clean Air Plan*. April. Web: https://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en

The emissions from build-out of the Five Wounds Plan Update are compared against regional emissions in Table 5. By comparing The Plan’s emissions to regional emissions, the magnitude of the Plan’s significance on regional air quality can be estimated. Operational emissions in comparison to regional emissions are an insignificant portion of the regional inventory (i.e., 0.84 percent and 1.43 percent unmitigated). Thus, despite being above BAAQMD significance thresholds, the effect of the Five Wounds Plan Update would not cause regional pollutant levels to measurably change. As a result, the Five Wounds Plan Update would not substantially increase regional ozone levels and the health effects associated with the Plan’s ROG and NOx emissions would not be measurable.

Table 5. Comparison of Project Emissions to Air Basin Emissions¹⁷

Scenario	ROG	NOx
Bay Area Air Basin in 2020	238 tons/day	172 tons/day
Bay Area Air Basin in 2035 ¹	238 tons/day	140 tons/day
5WPU Operation (i.e., Build-out)	1.6 tons/day (583 tons/year)	2.0 tons/day (739 tons/year)
% of Basin in 2035	0.84%	1.43%

¹Closest year of analysis to proposed Project operational year.

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

To address exposure of sensitive receptors to substantial pollutant levels, the BAAQMD CEQA Guidelines developed thresholds that address health risk impacts associated with single sources of TACs and the cumulative impacts of all nearby TAC sources. These include increased cancer risk, non-cancer hazards, and increased annual concentrations of PM_{2.5}. Sources of TACs and PM_{2.5} from development projects (both construction and operation) can lead to increased risks. Diesel particulate matter (DPM) is the predominant TAC in the area. As previously described, the *San José Envision 2040 General Plan* includes the following policies or actions related to Air Quality that would serve to minimize health risk impacts:

MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

MS-11.2 For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, new projects (such as, but not limited to, industrial, manufacturing, and processing

¹⁷ CARB. 2022. CEPAM2019v1.03 Emission Projection Data 2020 and 2035 Estimated Annual Average Emissions San Francisco Bay Area Air Basin. <https://ww2.arb.ca.gov/applications/emissions-user-defined-query> accessed May 23, 2023 to estimate year 2020 and 2035 emissions.

facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.

MS-11.7 Consult with BAAQMD to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.

MS-11.8 For new projects that generate truck traffic, require signage which reminds drivers that the State truck idling law limits truck idling to five minutes.

Project Construction

Implementation of the Five Wounds Plan Update would include short-term construction sources of TACs. There are existing sensitive receptors within the planning area and adjacent to almost all of the planning area boundary. In addition, there will be more residents in the area in the future as the Five Wounds Plan is built out. Thus, current, and future residents could potentially be exposed to TACs during construction activity.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust (i.e., DPM), which is a known TAC, and PM_{2.5} (i.e., fugitive dust). These emissions may pose community risks for sensitive receptors such as nearby residents. The primary health risk impacts associated with construction emissions are cancer risk from DPM and exposure to PM_{2.5}. Project-level health risk assessments are necessary to address the potential health risk impacts associated with construction.

The City General Plan Policies MS-11.1 and MS-11.2 require each construction project included in the Five Wounds planning area to conduct a health risk assessment using modeling methodologies recommended by BAAQMD and approved by the City. Health risk impacts predicted for each construction project would be estimated and compared against BAAQMD project-level thresholds. Projects that have health risks exceeding the thresholds would be required to implement enhanced measures, such as using Tier 4 construction equipment, to manage construction emissions to achieve health risks below the thresholds.

Project Operation

The types of land uses envisioned in the Five Wounds Plan Update are not anticipated to include significant sources of TACs or PM_{2.5}. Additionally, any permanent sources of air pollution that operate in accordance with BAAQMD rules and regulations would not cause significant exposure for on- or off-site sensitive receptors. Stationary sources, such as diesel power generators would require permitting by BAAQMD and health risks would be assessed through the permitting process.

Traffic generated as a result of the build-out of the Five Wounds Plan Update would add to the traffic already in the area and in the City of San José. VMT are anticipated to increase by 2040 for both the General Plan build out and the General Plan with the Five Wounds Plan Update. However, with the increased access to transit and other active modes of transportation, residents in the Five

Wounds planning area would generate shorter trips, resulting in a VMT decrease of 9,733 miles per day when compared to the General Plan alone.¹⁸

However, the City General Plan Policies MS-11.1 and MS-11.2 require each project included in the Five Wounds planning area to conduct a health risk assessment using modeling methodologies recommended by BAAQMD and approved by the City. Health risk impacts predicted for each project (i.e., combination of both construction and project operations impacts) would be estimated and compared against BAAQMD project-level thresholds. Projects that have health risks exceeding the thresholds would be required to mitigate their impacts.

Health Risks to New Project Residents

The number and type of nearby stationary sources of TACs (e.g., emergency back-up generators and gas stations, and traffic on local roadways) affect the health of residents. The Five Wounds Plan Update includes locating new sensitive receptors (i.e., residences) in the planning area. While there are no BAAQMD CEQA plan-level thresholds associated with new resident health risks, BAAQMD has established health risk thresholds for new residents at the project-level. In 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as “CEQA-in-reverse” – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478).

Additionally, BAAQMD’s Clean Air Plan has the goal of reducing population exposure to TACs and protecting public health in the Bay Area. Therefore, the potential health risk impacts to future residents in the planning area needs to be considered. Furthermore, the *San José Envision 2040 General Plan* requires appropriate site planning when developing new sensitive land uses near sources of air pollutants:

MS-11.1 Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution such as freeways and industrial uses. Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

To help prevent the exposure of new sensitive receptors to significant levels of TACs, the BAAQMD established qualitative significance thresholds at the plan level and quantitative significance thresholds at the project (development) level. To be considered less than significant, the Five Wounds Plan Update must establish overlay zones around existing and planned sources of TACs (including adopted Risk Reduction Plan areas), and overlay zones of at least 500 feet from all freeways (i.e., US 101) and high-volume roadways (i.e., Julian St., McKee Rd., Santa Clara St., Alum Rock Ave.).

¹⁸ Five Wounds Urban Village Plan Update Transportation Analysis, Hexagon Transportation Consultants, Inc. City of San José. April 18, 2024.

Quantitative project-level health risk thresholds for sources of TACs apply to new residential projects. Impacts from a single source of TACs are considered significant to new residents if they have an increased cancer risk of more than 10 in one million, a non-cancer hazard index of 1.0 or greater, and increased annual concentrations of PM_{2.5} greater than 0.30 µg/m³. Cumulative impacts are considered significant if all the TAC sources within a 1,000-foot radius of the project have an increased cancer risk of more than 100 in one million, a non-cancer hazard index of 10.0 or greater, and increased annual concentrations of PM_{2.5} greater than 0.80 µg/m³.

Stationary Source TAC Impacts

Figure 2 shows the Five Wounds planning area and the stationary sources located within 1,000-feet of it. Permitted stationary sources of air pollution in and near the planning area were identified using BAAQMD's *Stationary Source Screening Analysis Tool*. This mapping tool uses geographic information systems (GIS) to identify the locations of stationary sources and their estimated risk and hazard impacts.¹⁹ Approximately ten existing sources of TACs are located within the planning area, with an additional five sources located within the 1,000 ft buffer area. Table 6 lists the stationary sources that could affect new residents in the Five Wounds Planning Area and their potential health risks. *Attachment 3* provides the report generated using BAAQMD's screening tool.

¹⁹ BAAQMD, *Stationary Source Screening Map*, 2023. Web: <https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3> .

Figure 2. Planning Area and Stationary Sources



Table 6. Maximum Stationary Source Risk Levels for the Five Wounds Planning Area

Facility (BAAQMD ID#)	Source Type	Lifetime Cancer Risk (per million)	Annual PM _{2.5} (µg/m ³)	Acute or Chronic Hazard Index
Eggo Company (5582)	Food Manufacturing	2.91	0.29	<0.01
Pacific Auto Body (6351)	Auto Body Repair & Maintenance	---	---	<0.01
Verizon Wireless (18356)	Generator	1.14	<0.01	---
San Jose Fire Dept (18486)	Generator	18.40	0.02	<0.01
San Jose Water Company (19802)	Generator	144.49	0.19	0.07
Tough Auto Body (21375)	Auto Body Repair & Maintenance	---	---	<0.01
Tac Auto Repair (21945)	Auto Body Repair & Maintenance	---	---	---
Downtown San Jose - Valley Health Clinic (23495)	Generator	0.94	<0.01	<0.01
Gas & Shop (100630)	Gasoline Stations	66.02	---	0.29
Valero Refining Co SS#7760 (110368)	Gasoline Stations	7.13	---	0.03
Speedway No. 4068 (110689)	Gasoline Stations	0.03	---	---
Therma LLC (110854)	Gasoline Stations	2.70	---	0.01
Arco (110970)	Gasoline Stations	48.30	---	0.21
Shell SS#68202 (111830)	Gasoline Stations	35.94	---	0.16
Gas and Shop (112363)	Gasoline Stations	13.96	---	0.06
Total		341.95	<0.52	<0.85
<i>Single-Source Threshold</i>		<i>>10.0</i>	<i>>0.3</i>	<i>>1.0</i>
<i>BAAQMD Cumulative Source Threshold</i>		<i>>100.0</i>	<i>>0.8</i>	<i>>10.0</i>
Exceed Thresholds?		Single:	No	No
		Cumulative:	No	No

Note: Bold values indicate values above BAAQMD threshold. The actual cumulative level would be less than presented as this value represents the sum of the maximum impacts even though the maximum from each source does not occur at any one location.

Summary of Stationary-Source Health Risks

Six of the stationary sources (two diesel emergency power generators and four gasoline stations) were reported to have maximum individual cancer risks over the BAAQMD project-level single TAC source threshold of 10 in one million. However, none of the sources were reported by BAAQMD to have PM_{2.5} concentrations or non-cancer hazards (HI) over the project-level single source thresholds. Cumulatively, cancer risks from the existing stationary sources exceeded the BAAQMD project-level threshold of 100 in one million but did not exceed the thresholds for PM_{2.5} or HI. Therefore, any new development projects introducing additional sensitive receptors (i.e., residential units) to the planning area would potentially expose them to a significant increased cancer risk, depending on their proximity to the TAC sources shown in Figure 2.

Mobile Source Risk Impacts

Major roadways and railways can pose health risks both as individual sources (i.e., individual roadways and rail line segments) and as cumulative sources (i.e., all roadways and railways in an area). Risks from mobile sources of TACs are quantitatively assessed at the individual project-level, not the plan

Health risk impacts associated with DPM and PM_{2.5} from traffic and railways in the Five Wounds Update planning area were estimated using BAAQMD screening values provided via GIS data files (i.e., raster files). BAAQMD raster files provide screening-level cancer risk, PM_{2.5} concentrations, and HI for all roadways and rail lines within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid. The raster file uses EMFAC2021 data for vehicle emissions and fleet mix for roadways, 2021 train schedules and 2020 fuel consumption rates for rail activities. Risks were estimated based on the methodologies documented in Appendix E of the Air District's CEQA Air Quality Guidance. Note that BAAQMD's screening values are considered higher than values that would be obtained with refined modeling methods. And the risks are considered cumulative, as they do not identify impacts from specific roadways or rail lines.

The BAAQMD raster data showed no health risk impacts from railroad operations in the Five Wounds planning area. Cumulative impacts from BAAQMD's roadway screening data are provided in Figures 3 through 5. Cancer risks are highest adjacent to US 101, where they range from 235 chances in one million to 80 chances in one million. Cancer risks in the majority of the Five Wounds planning area range from less than one in one million to 80 chances in one million. The BAAQMD project-level cumulative threshold for cancer risk significance is 100 chances in one million. Thus, cancer risks from mobile sources at individual development projects in the Five Wounds planning area would likely be considered less-than-significant at the project-level, except in those locations adjacent to US 101, where projects with a residential component could expose new residents to a cumulatively significant project-level health risk impact.

Annual PM_{2.5} concentrations mirror impact from cancer risks. The majority of the Five Wounds planning area is below the BAAQMD project-level cumulative source threshold of 0.8 µg/m³. However, along US 101, PM_{2.5} concentrations are likely to exceed 0.8 µg/m³. Thus, projects with a residential component located adjacent to US 101 are likely to have cumulative PM_{2.5} concentrations that exceeds BAAQMD's project-level significance threshold.

HI from mobile sources in the Five Wounds planning area are not likely to exceed BAAQMD's project-level significance thresholds of less than 1.0 for a single TAC source or less than 10 for all (cumulative) TAC sources. The highest HI values in the planning area are found along US 101 and are conservatively estimated by BAAQMD to be less than 1.0.

Legend

Plan Area

Screen-Level Cancer Risk
(per million)

- 0 - 10
- 10 - 40
- 40 - 80
- 80 - 160
- 160 - 234.7

0 500 1,000 ft

Figure 4. Five Wounds Plan Area Roadway Screen-Level Annual PM_{2.5} Concentrations

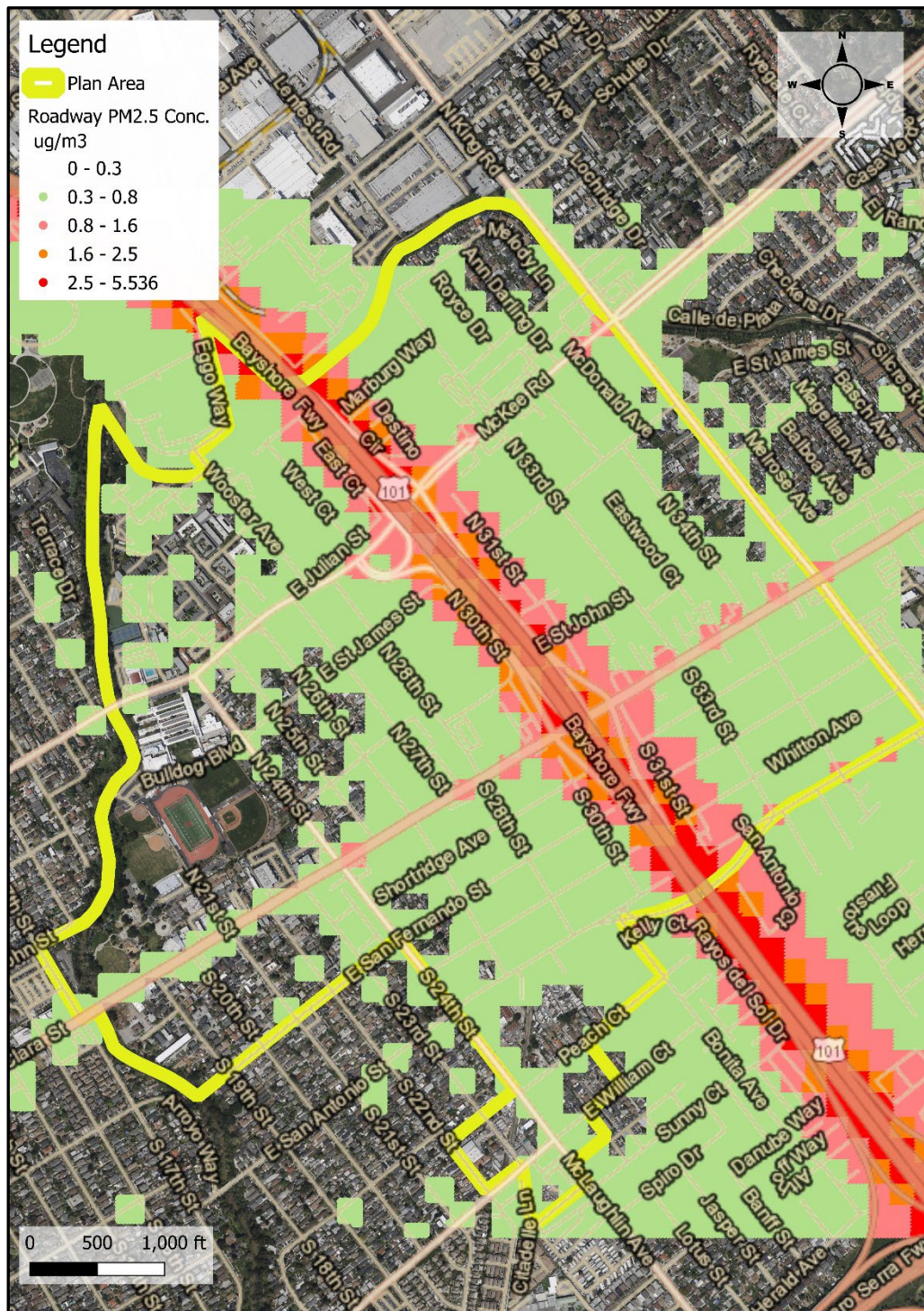
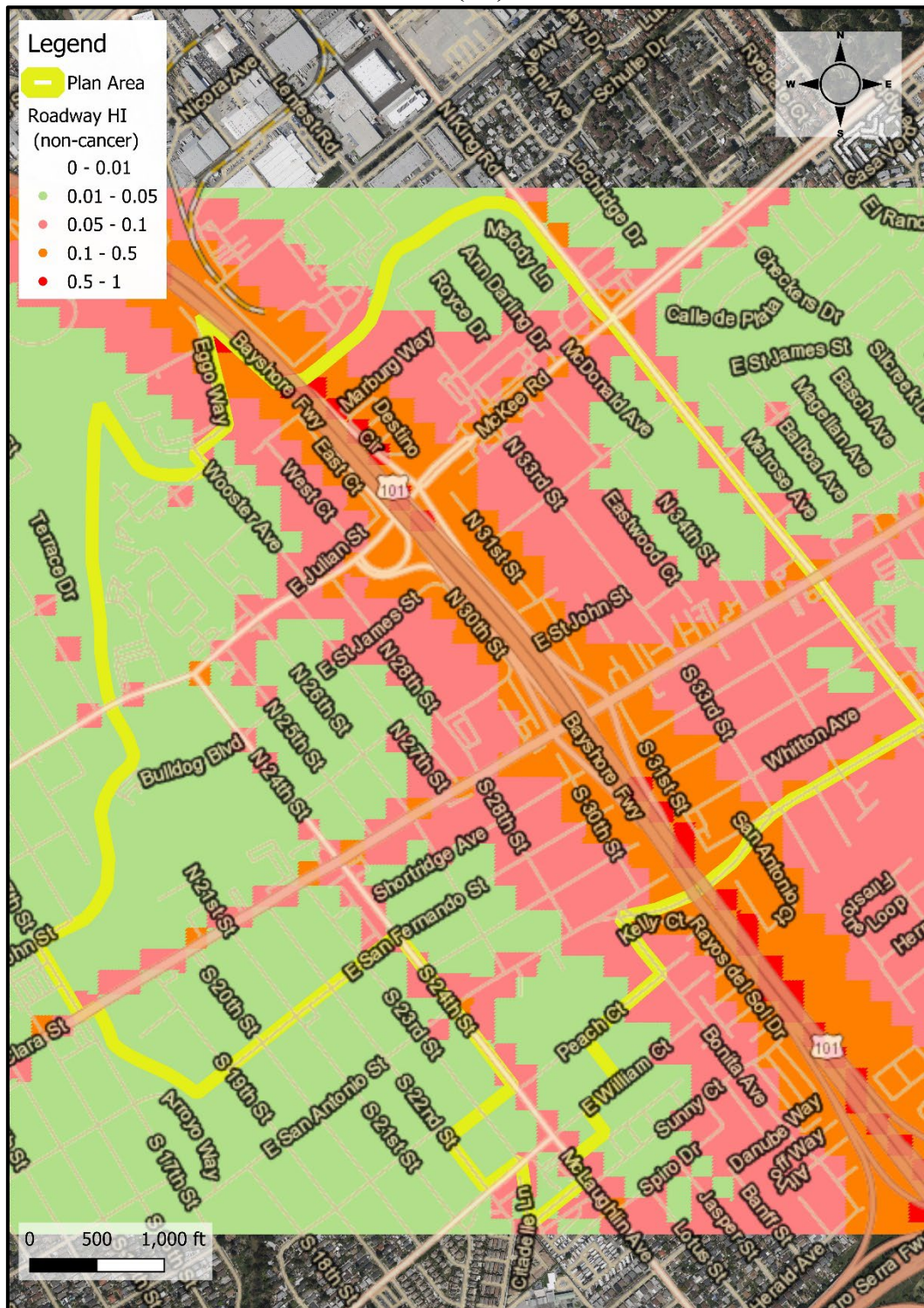


Figure 5. Five Wounds Plan Area Roadway Screen-Level Non-Cancer Health Risks (HI)



Mitigations for Health Risks

No mitigations are needed at the plan-level, assuming the Five Wounds Plan Update would include appropriate overlay districts near sources of existing TACs that exceed BAAQMD's single-source thresholds. However, given the possibility of potentially significant health risk impacts at the project-level to existing and new residents in the Five Wounds planning area, the following mitigation measures are proposed for project implementation:

MM AQ-2: Per the City of San José General Plan Policy MS 11.2, conduct a project-level health risk assesment that compares estimated project health risks to applicable BAAQMD thresholds. Project-specific migigation measures shall be identified for impacts exceeding project-level or cummulative health risk thresholds.

MM AQ-3: Per the City of San José General Plan Policy MS 11.1, conduct a health risk assesment that compares estimated health risks for projects introducing new sensitive receptors to applicable BAAQMD single source and cumulative source thresholds. Based on the results of the health risk assessment, implement appropriate measures to reduce cancer risk and annual PM_{2.5} concentrations to below BAAQMD thresholds. Measures to achieve this may include:

- *Install air filtration at units that have predicted PM_{2.5} concentrations above 0.3 µg/m³. Air filtration devices shall be rated MERV13 or higher. Alternately, at the approval of the City, equivalent control technology may be used if it is shown by a qualified air quality consultant or heating, ventilation, and air conditioning (HVAC) engineer that it would reduce risk below BAAQMD significance thresholds.*
 - *As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.*
 - *Ensure that any lease agreements and other property documents (1) require cleaning, maintenance, and monitoring of the affected units for air flow leaks; (2) include assurance that new owners and tenants are provided information on the ventilation system; and (3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed.*
 - *Require that, prior to building occupancy, an authorized air pollutant consultant or HVAC engineer verify the installation of all necessary measures to reduce PM_{2.5} concentrations above 0.3 µg/m³ for any source and 0.8 µg/m³ for all sources.*
- *Design the site to limit exposure from sources of TACs and fine particulate matter (PM_{2.5}) emissions. Locate operable windows and air intakes as far as possible from arterial roadways and US 101.*
- *To the greatest degree possible, plant vegetation along roadway boundaries. This barrier would include trees and shrubs that provide a dense vegetative barrier.*

Impact AIR-4: Create objectionable odors affecting a substantial number of people?

The Five Wounds Plan Update would increase localized emissions of diesel exhaust during construction equipment operation and truck activity. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints.

The City's General Plan has two policies applicable to odor impacts associated with new developments:

- MS-12.1 For new, expanded, or modified facilities that are potential sources of objectionable odors (such as landfills, green waste and resource recovery facilities, wastewater treatment facilities, asphalt batch plants, and food processors), the City requires an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.
- MS-12.2 Require new residential development projects and projects categorized as sensitive receptors to be located an adequate distance from facilities that are existing and potential sources of odor. An adequate separation distance will be determined based upon the type, size, and operations of the facility.

The Five Wounds Plan Update does not identify any specific sources of odors that could lead to frequent odor complaints. However, various uses within the planning area could be developed that produce localized odors. An example would include restaurants. It is also possible that small water treatment facilities or other industrial uses could be developed that have localized odors.

BAAQMD has identified a variety of land uses and types of operations that produce emissions that may lead to odors in their CEQA Air Quality Guidelines. The identified land uses include wastewater treatment plants. According to the BAAQMD CEQA Guidelines, an odor source with five or more confirmed complaints per year averaged over three years is considered to cause frequent odor complaints, and therefore, have a significant impact. Residences who are subjected to objectionable odors are most likely to complain.

BAAQMD CEQA Air Quality Guidelines include screening distances for various odor sources. In addition, projects in the planning area are subject to BAAQMD rules and regulations, specifically, Rule 1-301 (Public Nuisance), Rule 7 (Odorous Substances), Rule 8-8 (Wastewater Collection and Separation Systems), and Rule 9-2 (Inorganic Gaseous Pollutants: Hydrogen Sulfide). BAAQMD Regulation 7 prohibits the discharge of odorous substances to ambient air that results in frequent odor complaints.

Given the current and future number of future residences in the planning area, individual projects within the planning area have the potential to cause odors and result in odor complaints.

Mitigation for Odors

Given the possibility of potentially significant odor impacts to current and new residents in the Five Wounds planning area, the following mitigation measure is proposed:

MM AQ-4: Projects that that would generate odors shall develop an odor control plan that addresses plant design issues to control odors, operating and maintenance procedures to prevent odors, and an action plan to respond to upset conditions that could cause odors and measures to respond to odor complaints. The odor control plan shall describe the design elements and best management practices built into the project that include:

- Ventilation of the system using carbon absorption, biofiltration, ammonia scrubbers, or other effective means to treat exhausted air from the enclosed facility;*
- Odor proofing of refuse containers used to store and transport any odorous materials (e.g., biosolids); and*
- Injection of chemicals to control odorous compounds (e.g., hydrogen sulfide).*

The plan shall describe procedures to address upset conditions caused by equipment failures, power outages, flow control, or treatment issues.

A publicly visible sign with the telephone number and person to contact regarding odor complaints shall be posted. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations. A log of odor complaints and procedures implemented to respond to complaints shall be maintained and provided to the City upon request.

Implementation of MM AQ-4 and adherence with BAAQMD rules and regulations would reduce odor impacts in the planning area to *less-than-significant*.

GHG Emissions

The CalEEMod model was used to estimate annual emissions associated with the Five Wounds Plan Update and existing 2040 General Plan scenario. Annual unmitigated emissions in 2040 for the General Plan are estimated to be 2.75 million MT of CO₂e, as shown in Table 7. The Five Wounds Plan Update would increase unmitigated GHG emissions by an estimated 17,175 MT of CO₂e per year, for a total annual GHG emissions estimate of 2.76 million MT of CO₂e. Thus, the plan update represents a 0.63 percent increase in GHG emissions, assuming the 2040 population in the City of San José increases proportionally to the number of residential units added by the Five Wounds Plan Update. The increase in annual GHG emissions would be decreased to 0.09 percent if new residential units in the planning area are 100 percent electric (i.e., no natural gas appliances).

Table 7. Annual Project GHG Emissions (CO₂e) in Metric Tons, 2040

Scenario	Source Category	2040 General Plan Emissions	General Plan with Five Wounds Plan Update	Difference
Unmitigated	Mobile	2,710,984	2,710,286	-698
	Area	296	468	+172
	Energy Consumption	31,589	47,966	+16,377
	Water Usage	860	860	---
	Solid Waste Generation	3,155	4,465	+1,310
	Refrigeration	22	35	+13
	Total (Metric Tons per Year)	2,746,905	2,764,081	+17,175
Mitigated ¹	Mobile	2,710,984	2,710,286	-698
	Area	296	468	+172
	Energy Consumption	9,679	11,300	+1,621
	Water Usage	860	860	---
	Solid Waste Generation	3,155	4,465	+1,310
	Refrigeration	22	35	+13
	Total (Metric Tons per Year)	2,726,999	2,729,961	+2,419

¹ Mitigation includes all electric appliances in new residential units (e.g., no natural gas appliances).

Impact AIR-5: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The City of San José GHG Reduction Strategy²⁰ (GHGRS) serves as a Qualified GHGRS or a community-wide plan approved by BAAQMD to GHG emissions in accordance with AB 32 goals. BAAQMD's plan-level significance thresholds are:

1. The Plan must meet State's goals to reduce emissions to 40% below 1990 levels by 2030 and carbon neutrality by 2045; or
2. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

The Five Wounds Plan Update is consistent with the City's GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). Therefore, the plan update would be considered *less-than-significant* at the plan level.

However, the Five Wounds Plan Update would be implemented as a series of individual development projects. BAAQMD's project-level thresholds of significance are:

- A. Projects must include, at a minimum, the following project design elements:
 - a. Buildings
 - i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).

²⁰ City of San José, 2020. *City of San José 2030 Greenhouse Gas Reduction Strategy*. August. Available at <https://www.sanjoseca.gov/your-government/departments-offices/planning-building-code-enforcement/planning-division/environmental-review/greenhouse-gas-reduction-strategy>.

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

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

Any new land use project in the Five Wounds Planning Area would have to include either section A or B from the above list, not both, to be considered below BAAQMD's GHG thresholds of significance.

Individual projects within the Five Wounds Plan area would be subject to the City's GHGRS, which is considered a qualified plan, and would be required to complete the City's Development Compliance Checklist for new development projects. Therefore, the Five Wounds Plan Update would meet Threshold B and its impacts are considered *less-than-significant*.

Impact AIR-6: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Five Wounds Plan Update would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. Projects would be required to comply with the City's Development Compliance Checklist and the requirements of the City's Green Building Code. For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems. The Five Wounds Plan Update would not change relevant GHG emissions reduction measures included in the 2040 General Plan or The City of San José GHGRS.

Supporting Documentation

Attachment 1 includes the CalEEMod outputs.

Attachment 2 includes the CT-EMFAC2021 emissions modeling.

Attachment 3 is the Existing Stationary Source information provided by BAAQMD screening tools.

Attachment 1: CalEEMod Modeling

5WPU - Existing Custom Report

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5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	5WPU - Existing
Operational Year	2015
Lead Agency	City of San Jose
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.60
Location	37.35181352329869, -121.8635079693455
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1868
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.23

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Free-Standing Discount store	234	1000sqft	5.37	234,000	35.0	—	—	—

General Office Building	926	1000sqft	21.3	926,000	139	—	—	—
Single Family Housing	6,883	Dwelling Unit	2,235	13,421,850	80,619,595	—	20,580	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	434	115	9.35	0.00	9.35	9.22	0.00	9.22	4,825	180,003	184,828	410	3.08	99.5	196,096
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	374	109	8.82	0.00	8.82	8.82	0.00	8.82	4,825	178,752	183,577	410	3.07	99.5	194,841
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	402	89.7	7.28	0.00	7.28	7.21	0.00	7.21	4,825	151,098	155,923	410	3.02	99.5	167,160
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	73.4	16.4	1.33	0.00	1.33	1.32	0.00	1.32	799	25,016	25,815	67.8	0.50	16.5	27,675

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	429	28.0	2.38	—	2.38	2.25	—	2.25	0.00	30,237	30,237	0.60	0.07	—	30,271
Energy	5.04	86.6	6.97	—	6.97	6.97	—	6.97	—	145,300	145,300	15.5	0.91	—	145,958
Water	—	—	—	—	—	—	—	—	922	4,466	5,388	3.89	2.10	—	6,112
Waste	—	—	—	—	—	—	—	—	3,903	0.00	3,903	390	0.00	—	13,656
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5
Total	434	115	9.35	0.00	9.35	9.22	0.00	9.22	4,825	180,003	184,828	410	3.08	99.5	196,096
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	368	22.8	1.85	—	1.85	1.85	—	1.85	0.00	28,986	28,986	0.55	0.05	—	29,015
Energy	5.04	86.6	6.97	—	6.97	6.97	—	6.97	—	145,300	145,300	15.5	0.91	—	145,958
Water	—	—	—	—	—	—	—	—	922	4,466	5,388	3.89	2.10	—	6,112
Waste	—	—	—	—	—	—	—	—	3,903	0.00	3,903	390	0.00	—	13,656
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5
Total	374	109	8.82	0.00	8.82	8.82	0.00	8.82	4,825	178,752	183,577	410	3.07	99.5	194,841
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	397	3.10	0.31	—	0.31	0.24	—	0.24	0.00	1,332	1,332	0.04	0.01	—	1,335
Energy	5.04	86.6	6.97	—	6.97	6.97	—	6.97	—	145,300	145,300	15.5	0.91	—	145,958
Water	—	—	—	—	—	—	—	—	922	4,466	5,388	3.89	2.10	—	6,112
Waste	—	—	—	—	—	—	—	—	3,903	0.00	3,903	390	0.00	—	13,656
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5

Total	402	89.7	7.28	0.00	7.28	7.21	0.00	7.21	4,825	151,098	155,923	410	3.02	99.5	167,160
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	72.5	0.57	0.06	—	0.06	0.04	—	0.04	0.00	221	221	0.01	< 0.005	—	221
Energy	0.92	15.8	1.27	—	1.27	1.27	—	1.27	—	24,056	24,056	2.56	0.15	—	24,165
Water	—	—	—	—	—	—	—	—	153	739	892	0.64	0.35	—	1,012
Waste	—	—	—	—	—	—	—	—	646	0.00	646	64.6	0.00	—	2,261
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	16.5	16.5
Total	73.4	16.4	1.33	0.00	1.33	1.32	0.00	1.32	799	25,016	25,815	67.8	0.50	16.5	27,675

4. Operations Emissions Details

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Standing Discount store	—	—	—	—	—	—	—	—	—	1,117	1,117	0.18	0.02	—	1,128
General Office Building	—	—	—	—	—	—	—	—	—	10,955	10,955	1.77	0.21	—	11,063
Single Family Housing	—	—	—	—	—	—	—	—	—	23,791	23,791	3.85	0.47	—	24,026
Total	—	—	—	—	—	—	—	—	—	35,863	35,863	5.80	0.70	—	36,218

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,117	1,117	0.18	0.02	—	1,128
General Office Building	—	—	—	—	—	—	—	—	—	10,955	10,955	1.77	0.21	—	11,063
Single Family Housing	—	—	—	—	—	—	—	—	—	23,791	23,791	3.85	0.47	—	24,026
Total	—	—	—	—	—	—	—	—	—	35,863	35,863	5.80	0.70	—	36,218
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	185	185	0.03	< 0.005	—	187
General Office Building	—	—	—	—	—	—	—	—	—	1,814	1,814	0.29	0.04	—	1,832
Single Family Housing	—	—	—	—	—	—	—	—	—	3,939	3,939	0.64	0.08	—	3,978
Total	—	—	—	—	—	—	—	—	—	5,938	5,938	0.96	0.12	—	5,996

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand ing	0.02	0.36	0.03	—	0.03	0.03	—	0.03	—	427	427	0.04	< 0.005	—	429
General Office Building	0.32	5.91	0.45	—	0.45	0.45	—	0.45	—	7,048	7,048	0.62	0.01	—	7,068
Single Family Housing	4.70	80.3	6.49	—	6.49	6.49	—	6.49	—	101,961	101,961	9.02	0.19	—	102,244
Total	5.04	86.6	6.97	—	6.97	6.97	—	6.97	—	109,437	109,437	9.69	0.21	—	109,740
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.02	0.36	0.03	—	0.03	0.03	—	0.03	—	427	427	0.04	< 0.005	—	429
General Office Building	0.32	5.91	0.45	—	0.45	0.45	—	0.45	—	7,048	7,048	0.62	0.01	—	7,068
Single Family Housing	4.70	80.3	6.49	—	6.49	6.49	—	6.49	—	101,961	101,961	9.02	0.19	—	102,244
Total	5.04	86.6	6.97	—	6.97	6.97	—	6.97	—	109,437	109,437	9.69	0.21	—	109,740
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	< 0.005	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.8	70.8	0.01	< 0.005	—	70.9
General Office Building	0.06	1.08	0.08	—	0.08	0.08	—	0.08	—	1,167	1,167	0.10	< 0.005	—	1,170
Single Family Housing	0.86	14.7	1.19	—	1.19	1.19	—	1.19	—	16,881	16,881	1.49	0.03	—	16,928
Total	0.92	15.8	1.27	—	1.27	1.27	—	1.27	—	18,118	18,118	1.60	0.03	—	18,169

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.34	22.8	1.85	—	1.85	1.85	—	1.85	0.00	28,986	28,986	0.55	0.05	—	29,015
Consumer Products	312	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	55.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	60.7	5.15	0.53	—	0.53	0.40	—	0.40	—	1,252	1,252	0.05	0.01	—	1,256
Total	429	28.0	2.38	—	2.38	2.25	—	2.25	0.00	30,237	30,237	0.60	0.07	—	30,271
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.34	22.8	1.85	—	1.85	1.85	—	1.85	0.00	28,986	28,986	0.55	0.05	—	29,015
Consumer Products	312	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	55.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	368	22.8	1.85	—	1.85	1.85	—	1.85	0.00	28,986	28,986	0.55	0.05	—	29,015
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.10	0.01	—	0.01	0.01	—	0.01	0.00	118	118	< 0.005	< 0.005	—	118
Consumer Products	56.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	10.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	5.46	0.46	0.05	—	0.05	0.04	—	0.04	—	102	102	< 0.005	< 0.005	—	103
Total	72.5	0.57	0.06	—	0.06	0.04	—	0.04	0.00	221	221	0.01	< 0.005	—	221

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Standing Discount store	—	—	—	—	—	—	—	—	37.0	62.7	99.8	0.14	0.08	—	128
General Office Building	—	—	—	—	—	—	—	—	352	596	947	1.30	0.78	—	1,212
Single Family Housing	—	—	—	—	—	—	—	—	533	3,808	4,341	2.45	1.24	—	4,772
Total	—	—	—	—	—	—	—	—	922	4,466	5,388	3.89	2.10	—	6,112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Standing Discount store	—	—	—	—	—	—	—	—	37.0	62.7	99.8	0.14	0.08	—	128

General Office Building	—	—	—	—	—	—	—	—	352	596	947	1.30	0.78	—	1,212
Single Family Housing	—	—	—	—	—	—	—	—	533	3,808	4,341	2.45	1.24	—	4,772
Total	—	—	—	—	—	—	—	—	922	4,466	5,388	3.89	2.10	—	6,112
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	6.13	10.4	16.5	0.02	0.01	—	21.1
General Office Building	—	—	—	—	—	—	—	—	58.2	98.6	157	0.22	0.13	—	201
Single Family Housing	—	—	—	—	—	—	—	—	88.3	630	719	0.41	0.21	—	790
Total	—	—	—	—	—	—	—	—	153	739	892	0.64	0.35	—	1,012

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	542	0.00	542	54.2	0.00	—	1,898

General Office Building	—	—	—	—	—	—	—	—	464	0.00	464	46.4	0.00	—	1,624
Single Family Housing	—	—	—	—	—	—	—	—	2,897	0.00	2,897	290	0.00	—	10,134
Total	—	—	—	—	—	—	—	—	3,903	0.00	3,903	390	0.00	—	13,656
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	542	0.00	542	54.2	0.00	—	1,898
General Office Building	—	—	—	—	—	—	—	—	464	0.00	464	46.4	0.00	—	1,624
Single Family Housing	—	—	—	—	—	—	—	—	2,897	0.00	2,897	290	0.00	—	10,134
Total	—	—	—	—	—	—	—	—	3,903	0.00	3,903	390	0.00	—	13,656
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	89.8	0.00	89.8	8.97	0.00	—	314
General Office Building	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Single Family Housing	—	—	—	—	—	—	—	—	480	0.00	480	47.9	0.00	—	1,678
Total	—	—	—	—	—	—	—	—	646	0.00	646	64.6	0.00	—	2,261

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	2.25	2.25
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	96.1	96.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	1.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	2.25	2.25
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	96.1	96.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	0.19	0.19
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.37	0.37
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	15.9	15.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	16.5	16.5

5. Activity Data

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	1377
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	5506
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
27179246.25	9,059,749	1,740,000	580,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO₂ and CH₄ and N₂O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO ₂	CH ₄	N ₂ O	Natural Gas (kBTU/yr)
Free-Standing Discount store	1,999,524	204	0.0330	0.0040	1,333,466
General Office Building	19,602,154	204	0.0330	0.0040	21,992,769
Single Family Housing	42,570,370	204	0.0330	0.0040	318,145,491

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Free-Standing Discount store	17,332,970	374
General Office Building	164,581,451	1,486
Single Family Housing	249,621,631	1,053,382,030

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Free-Standing Discount store	1,006	—
General Office Building	861	—
Single Family Housing	5,375	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Free-Standing Discount store	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Free-Standing Discount store	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5WPU - 2040 GP Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	5WPU - 2040 GP
Operational Year	2040
Lead Agency	City of San Jose
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.60
Location	37.35181352329869, -121.8635079693455
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1868
EDFZ	1
Electric Utility	San Jose Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Free-Standing Discount store	331	1000sqft	7.60	331,000	50.0	—	—	—

General Office Building	1,856	1000sqft	42.6	1,856,000	278	—	—	—
Single Family Housing	8,909	Dwelling Unit	2,893	17,372,550	104,349,843	—	26,638	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	560	151	12.1	0.00	12.1	12.0	0.00	12.0	6,369	232,661	239,029	571	3.53	131	254,482
Mit.	554	47.4	3.72	0.00	3.72	3.63	0.00	3.63	6,369	100,689	107,058	559	3.28	131	122,145
% Reduced	1%	69%	69%	—	69%	70%	—	70%	—	57%	55%	2%	7%	—	52%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	500	146	11.7	0.00	11.7	11.7	0.00	11.7	6,369	230,918	237,287	571	3.51	131	252,733
Mit.	494	41.9	3.33	0.00	3.33	3.33	0.00	3.33	6,369	98,947	105,316	559	3.27	131	120,396
% Reduced	1%	71%	72%	—	72%	72%	—	72%	—	57%	56%	2%	7%	—	52%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	528	120	9.60	0.00	9.60	9.55	0.00	9.55	6,369	195,185	201,554	570	3.45	131	216,966
Mit.	522	15.8	1.19	0.00	1.19	1.14	0.00	1.14	6,369	63,214	69,583	558	3.20	131	84,628
% Reduced	1%	87%	88%	—	88%	88%	—	88%	—	68%	65%	2%	7%	—	61%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	96.4	21.9	1.75	0.00	1.75	1.74	0.00	1.74	1,054	32,315	33,370	94.4	0.57	21.6	35,921
Mit.	95.3	2.88	0.22	0.00	0.22	0.21	0.00	0.21	1,054	10,466	11,520	92.5	0.53	21.6	14,011
% Reduced	1%	87%	88%	—	88%	88%	—	88%	—	68%	65%	2%	7%	—	61%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	553	35.0	2.78	—	2.78	2.69	—	2.69	0.00	39,260	39,260	0.78	0.09	—	39,305
Energy	6.76	116	9.34	—	9.34	9.34	—	9.34	—	189,854	189,854	21.8	1.34	—	190,798
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Total	560	151	12.1	0.00	12.1	12.0	0.00	12.0	6,369	232,661	239,029	571	3.53	131	254,482
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	494	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Energy	6.76	116	9.34	—	9.34	9.34	—	9.34	—	189,854	189,854	21.8	1.34	—	190,798

Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Total	500	146	11.7	0.00	11.7	11.7	0.00	11.7	6,369	230,918	237,287	571	3.51	131	252,733
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	521	3.42	0.25	—	0.25	0.21	—	0.21	0.00	1,784	1,784	0.05	0.01	—	1,788
Energy	6.76	116	9.34	—	9.34	9.34	—	9.34	—	189,854	189,854	21.8	1.34	—	190,798
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Total	528	120	9.60	0.00	9.60	9.55	0.00	9.55	6,369	195,185	201,554	570	3.45	131	216,966
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	95.1	0.62	0.05	—	0.05	0.04	—	0.04	0.00	295	295	0.01	< 0.005	—	296
Energy	1.23	21.2	1.71	—	1.71	1.71	—	1.71	—	31,432	31,432	3.60	0.22	—	31,589
Water	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860
Waste	—	—	—	—	—	—	—	—	902	0.00	902	90.1	0.00	—	3,155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	21.6	21.6
Total	96.4	21.9	1.75	0.00	1.75	1.74	0.00	1.74	1,054	32,315	33,370	94.4	0.57	21.6	35,921

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	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
Area	553	35.0	2.78	—	2.78	2.69	—	2.69	0.00	39,260	39,260	0.78	0.09	—	39,305
Energy	0.68	12.3	0.94	—	0.94	0.94	—	0.94	—	57,882	57,882	10.1	1.09	—	58,460
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Total	554	47.4	3.72	0.00	3.72	3.63	0.00	3.63	6,369	100,689	107,058	559	3.28	131	122,145
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	494	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Energy	0.68	12.3	0.94	—	0.94	0.94	—	0.94	—	57,882	57,882	10.1	1.09	—	58,460
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Total	494	41.9	3.33	0.00	3.33	3.33	0.00	3.33	6,369	98,947	105,316	559	3.27	131	120,396
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	521	3.42	0.25	—	0.25	0.21	—	0.21	0.00	1,784	1,784	0.05	0.01	—	1,788
Energy	0.68	12.3	0.94	—	0.94	0.94	—	0.94	—	57,882	57,882	10.1	1.09	—	58,460
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Total	522	15.8	1.19	0.00	1.19	1.14	0.00	1.14	6,369	63,214	69,583	558	3.20	131	84,628
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	95.1	0.62	0.05	—	0.05	0.04	—	0.04	0.00	295	295	0.01	< 0.005	—	296

Energy	0.12	2.25	0.17	—	0.17	0.17	—	0.17	—	9,583	9,583	1.67	0.18	—	9,679
Water	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860
Waste	—	—	—	—	—	—	—	—	902	0.00	902	90.1	0.00	—	3,155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	21.6	21.6
Total	95.3	2.88	0.22	0.00	0.22	0.21	0.00	0.21	1,054	10,466	11,520	92.5	0.53	21.6	14,011

4. Operations Emissions Details

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,255	1,255	0.26	0.03	—	1,271
General Office Building	—	—	—	—	—	—	—	—	—	17,438	17,438	3.55	0.43	—	17,655
Single Family Housing	—	—	—	—	—	—	—	—	—	24,456	24,456	4.98	0.60	—	24,760
Total	—	—	—	—	—	—	—	—	—	43,149	43,149	8.79	1.07	—	43,686
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,255	1,255	0.26	0.03	—	1,271
General Office Building	—	—	—	—	—	—	—	—	—	17,438	17,438	3.55	0.43	—	17,655
Single Family Housing	—	—	—	—	—	—	—	—	—	24,456	24,456	4.98	0.60	—	24,760
Total	—	—	—	—	—	—	—	—	—	43,149	43,149	8.79	1.07	—	43,686
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	208	208	0.04	0.01	—	210
General Office Building	—	—	—	—	—	—	—	—	—	2,887	2,887	0.59	0.07	—	2,923
Single Family Housing	—	—	—	—	—	—	—	—	—	4,049	4,049	0.82	0.10	—	4,099
Total	—	—	—	—	—	—	—	—	—	7,144	7,144	1.46	0.18	—	7,233

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,255	1,255	0.26	0.03	—	1,271

General Office Building	—	—	—	—	—	—	—	—	—	17,438	17,438	3.55	0.43	—	17,655
Single Family Housing	—	—	—	—	—	—	—	—	—	24,457	24,457	4.98	0.60	—	24,762
Total	—	—	—	—	—	—	—	—	—	43,151	43,151	8.79	1.07	—	43,688
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,255	1,255	0.26	0.03	—	1,271
General Office Building	—	—	—	—	—	—	—	—	—	17,438	17,438	3.55	0.43	—	17,655
Single Family Housing	—	—	—	—	—	—	—	—	—	24,457	24,457	4.98	0.60	—	24,762
Total	—	—	—	—	—	—	—	—	—	43,151	43,151	8.79	1.07	—	43,688
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	208	208	0.04	0.01	—	210
General Office Building	—	—	—	—	—	—	—	—	—	2,887	2,887	0.59	0.07	—	2,923
Single Family Housing	—	—	—	—	—	—	—	—	—	4,049	4,049	0.82	0.10	—	4,100
Total	—	—	—	—	—	—	—	—	—	7,144	7,144	1.46	0.18	—	7,233

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.51	0.04	—	0.04	0.04	—	0.04	—	605	605	0.05	< 0.005	—	606
General Office Building	0.65	11.8	0.90	—	0.90	0.90	—	0.90	—	14,127	14,127	1.25	0.03	—	14,166
Single Family Housing	6.08	104	8.41	—	8.41	8.41	—	8.41	—	131,973	131,973	11.7	0.25	—	132,339
Total	6.76	116	9.34	—	9.34	9.34	—	9.34	—	146,705	146,705	13.0	0.28	—	147,112
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.51	0.04	—	0.04	0.04	—	0.04	—	605	605	0.05	< 0.005	—	606
General Office Building	0.65	11.8	0.90	—	0.90	0.90	—	0.90	—	14,127	14,127	1.25	0.03	—	14,166
Single Family Housing	6.08	104	8.41	—	8.41	8.41	—	8.41	—	131,973	131,973	11.7	0.25	—	132,339
Total	6.76	116	9.34	—	9.34	9.34	—	9.34	—	146,705	146,705	13.0	0.28	—	147,112
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.01	0.09	0.01	—	0.01	0.01	—	0.01	—	100	100	0.01	< 0.005	—	100

General Office Building	0.12	2.16	0.16	—	0.16	0.16	—	0.16	—	2,339	2,339	0.21	< 0.005	—	2,345
Single Family Housing	1.11	19.0	1.53	—	1.53	1.53	—	1.53	—	21,850	21,850	1.93	0.04	—	21,910
Total	1.23	21.2	1.71	—	1.71	1.71	—	1.71	—	24,289	24,289	2.15	0.05	—	24,356

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.51	0.04	—	0.04	0.04	—	0.04	—	605	605	0.05	< 0.005	—	606
General Office Building	0.65	11.8	0.90	—	0.90	0.90	—	0.90	—	14,127	14,127	1.25	0.03	—	14,166
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.68	12.3	0.94	—	0.94	0.94	—	0.94	—	14,732	14,732	1.30	0.03	—	14,773
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.51	0.04	—	0.04	0.04	—	0.04	—	605	605	0.05	< 0.005	—	606
General Office Building	0.65	11.8	0.90	—	0.90	0.90	—	0.90	—	14,127	14,127	1.25	0.03	—	14,166

Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.68	12.3	0.94	—	0.94	0.94	—	0.94	—	14,732	14,732	1.30	0.03	—	14,773
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.01	0.09	0.01	—	0.01	0.01	—	0.01	—	100	100	0.01	< 0.005	—	100
General Office Building	0.12	2.16	0.16	—	0.16	0.16	—	0.16	—	2,339	2,339	0.21	< 0.005	—	2,345
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.12	2.25	0.17	—	0.17	0.17	—	0.17	—	2,439	2,439	0.22	< 0.005	—	2,446

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.73	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Consumer Products	419	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	73.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	59.5	5.47	0.39	—	0.39	0.30	—	0.30	—	1,743	1,743	0.07	0.01	—	1,749

Total	553	35.0	2.78	—	2.78	2.69	—	2.69	0.00	39,260	39,260	0.78	0.09	—	39,305
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.73	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Consumer Products	419	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	73.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	494	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.13	0.01	—	0.01	0.01	—	0.01	0.00	153	153	< 0.005	< 0.005	—	153
Consumer Products	76.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	13.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	5.36	0.49	0.04	—	0.04	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Total	95.1	0.62	0.05	—	0.05	0.04	—	0.04	0.00	295	295	0.01	< 0.005	—	296

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.73	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Consumer Products	419	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectur al	73.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	59.5	5.47	0.39	—	0.39	0.30	—	0.30	—	1,743	1,743	0.07	0.01	—	1,749
Total	553	35.0	2.78	—	2.78	2.69	—	2.69	0.00	39,260	39,260	0.78	0.09	—	39,305
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.73	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Consumer Products	419	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectur al Coatings	73.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	494	29.6	2.39	—	2.39	2.39	—	2.39	0.00	37,517	37,517	0.71	0.07	—	37,556
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.13	0.01	—	0.01	0.01	—	0.01	0.00	153	153	< 0.005	< 0.005	—	153
Consumer Products	76.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectur al Coatings	13.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	5.36	0.49	0.04	—	0.04	0.03	—	0.03	—	142	142	0.01	< 0.005	—	143
Total	95.1	0.62	0.05	—	0.05	0.04	—	0.04	0.00	295	295	0.01	< 0.005	—	296

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
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Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988
Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988
Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	6.13	8.25	14.4	0.02	0.01	—	19.0
General Office Building	—	—	—	—	—	—	—	—	58.2	78.3	137	0.22	0.13	—	180

Single Family Housing	—	—	—	—	—	—	—	—	88.3	501	589	0.41	0.21	—	660
Total	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988
Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988

Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	6.13	8.25	14.4	0.02	0.01	—	19.0
General Office Building	—	—	—	—	—	—	—	—	58.2	78.3	137	0.22	0.13	—	180
Single Family Housing	—	—	—	—	—	—	—	—	88.3	501	589	0.41	0.21	—	660
Total	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	767	0.00	767	76.7	0.00	—	2,684
General Office Building	—	—	—	—	—	—	—	—	930	0.00	930	93.0	0.00	—	3,255
Single Family Housing	—	—	—	—	—	—	—	—	3,749	0.00	3,749	375	0.00	—	13,117
Total	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	767	0.00	767	76.7	0.00	—	2,684
General Office Building	—	—	—	—	—	—	—	—	930	0.00	930	93.0	0.00	—	3,255
Single Family Housing	—	—	—	—	—	—	—	—	3,749	0.00	3,749	375	0.00	—	13,117
Total	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	127	0.00	127	12.7	0.00	—	444
General Office Building	—	—	—	—	—	—	—	—	154	0.00	154	15.4	0.00	—	539
Single Family Housing	—	—	—	—	—	—	—	—	621	0.00	621	62.0	0.00	—	2,172
Total	—	—	—	—	—	—	—	—	902	0.00	902	90.1	0.00	—	3,155

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand ing	—	—	—	—	—	—	—	—	767	0.00	767	76.7	0.00	—	2,684
General Office Building	—	—	—	—	—	—	—	—	930	0.00	930	93.0	0.00	—	3,255
Single Family Housing	—	—	—	—	—	—	—	—	3,749	0.00	3,749	375	0.00	—	13,117
Total	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	767	0.00	767	76.7	0.00	—	2,684
General Office Building	—	—	—	—	—	—	—	—	930	0.00	930	93.0	0.00	—	3,255
Single Family Housing	—	—	—	—	—	—	—	—	3,749	0.00	3,749	375	0.00	—	13,117
Total	—	—	—	—	—	—	—	—	5,447	0.00	5,447	544	0.00	—	19,056
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	127	0.00	127	12.7	0.00	—	444
General Office Building	—	—	—	—	—	—	—	—	154	0.00	154	15.4	0.00	—	539
Single Family Housing	—	—	—	—	—	—	—	—	621	0.00	621	62.0	0.00	—	2,172
Total	—	—	—	—	—	—	—	—	902	0.00	902	90.1	0.00	—	3,155

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.59	1.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	124	124
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.59	1.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	124	124
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.75	0.75
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	20.6	20.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	21.6	21.6

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.59	1.59
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	124	124
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.59	1.59

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	4.51	4.51
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	124	124
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	131	131
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.75	0.75
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	20.6	20.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	21.6	21.6

5. Activity Data

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	1782
Propane Fireplaces	0

Electric Fireplaces	0
No Fireplaces	7127
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	1782
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	7127
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
35179413.75	11,726,471	3,280,500	1,093,500	—

5.10.3. Landscape Equipment

Season	Unit	Value
--------	------	-------

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Free-Standing Discount store	2,828,386	162	0.0330	0.0040	1,886,228
General Office Building	39,288,983	162	0.0330	0.0040	44,080,538
Single Family Housing	55,100,890	162	0.0330	0.0040	411,791,105

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Free-Standing Discount store	2,828,386	162	0.0330	0.0040	1,886,228
General Office Building	39,288,983	162	0.0330	0.0040	44,080,538
Single Family Housing	55,104,714	162	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Free-Standing Discount store	17,332,970	374
General Office Building	164,581,451	1,486
Single Family Housing	249,621,631	1,053,382,030

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Free-Standing Discount store	17,332,970	374
General Office Building	164,581,451	1,486
Single Family Housing	249,621,631	1,053,382,030

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Free-Standing Discount store	1,424	—
General Office Building	1,726	—
Single Family Housing	6,957	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Free-Standing Discount store	1,424	—
General Office Building	1,726	—
Single Family Housing	6,957	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Free-Standing Discount store	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Free-Standing Discount store	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Free-Standing Discount store	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Free-Standing Discount store	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
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5WPU - 2040 Custom Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	5WPU - 2040
Operational Year	2040
Lead Agency	City of San Jose
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	1.60
Location	37.35181352329869, -121.8635079693455
County	Santa Clara
City	San Jose
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1868
EDFZ	1
Electric Utility	San Jose Clean Energy
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Free-Standing Discount store	302	1000sqft	6.93	302,000	45.0	—	—	—

General Office Building	1,464	1000sqft	33.6	1,464,000	220	—	—	—
Single Family Housing	14,909	Dwelling Unit	4,841	29,072,550	174,626,985	—	44,578	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-15	Require All-Electric Development

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	877	242	19.3	0.00	19.3	19.2	0.00	19.2	8,630	357,284	365,914	808	4.06	213	387,525
Mit.	867	67.7	5.26	0.00	5.26	5.13	0.00	5.13	8,630	136,432	145,062	788	3.64	213	166,060
% Reduced	1%	72%	73%	—	73%	73%	—	73%	—	62%	60%	2%	10%	—	57%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	791	233	18.8	0.00	18.8	18.8	0.00	18.8	8,630	354,706	363,337	807	4.04	213	384,938
Mit.	781	59.3	4.74	0.00	4.74	4.74	0.00	4.74	8,630	133,854	142,485	788	3.62	213	163,474
% Reduced	1%	75%	75%	—	75%	75%	—	75%	—	62%	61%	2%	10%	—	58%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	830	189	15.2	0.00	15.2	15.1	0.00	15.1	8,630	294,741	303,371	806	3.93	213	324,914
Mit.	820	15.2	1.10	0.00	1.10	1.04	0.00	1.04	8,630	73,889	82,519	787	3.52	213	103,450
% Reduced	1%	92%	93%	—	93%	93%	—	93%	—	75%	73%	2%	11%	—	68%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	152	34.5	2.77	0.00	2.77	2.76	0.00	2.76	1,429	48,798	50,227	133	0.65	35.3	53,793
Mit.	150	2.77	0.20	0.00	0.20	0.19	0.00	0.19	1,429	12,233	13,662	130	0.58	35.3	17,127
% Reduced	1%	92%	93%	—	93%	93%	—	93%	—	75%	73%	2%	11%	—	68%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	866	57.9	4.51	—	4.51	4.39	—	4.39	0.00	65,362	65,362	1.29	0.14	—	65,436
Energy	10.7	184	14.8	—	14.8	14.8	—	14.8	—	288,375	288,375	32.0	1.82	—	289,715
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Total	877	242	19.3	0.00	19.3	19.2	0.00	19.2	8,630	357,284	365,914	808	4.06	213	387,525
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	780	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Energy	10.7	184	14.8	—	14.8	14.8	—	14.8	—	288,375	288,375	32.0	1.82	—	289,715

Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Total	791	233	18.8	0.00	18.8	18.8	0.00	18.8	8,630	354,706	363,337	807	4.04	213	384,938
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	820	5.39	0.35	—	0.35	0.29	—	0.29	0.00	2,819	2,819	0.08	0.01	—	2,825
Energy	10.7	184	14.8	—	14.8	14.8	—	14.8	—	288,375	288,375	32.0	1.82	—	289,715
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Total	830	189	15.2	0.00	15.2	15.1	0.00	15.1	8,630	294,741	303,371	806	3.93	213	324,914
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	150	0.98	0.06	—	0.06	0.05	—	0.05	0.00	467	467	0.01	< 0.005	—	468
Energy	1.96	33.5	2.70	—	2.70	2.70	—	2.70	—	47,744	47,744	5.29	0.30	—	47,966
Water	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860
Waste	—	—	—	—	—	—	—	—	1,276	0.00	1,276	128	0.00	—	4,465
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	35.3	35.3
Total	152	34.5	2.77	0.00	2.77	2.76	0.00	2.76	1,429	48,798	50,227	133	0.65	35.3	53,793

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	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
Area	866	57.9	4.51	—	4.51	4.39	—	4.39	0.00	65,362	65,362	1.29	0.14	—	65,436
Energy	0.54	9.80	0.74	—	0.74	0.74	—	0.74	—	67,523	67,523	12.4	1.40	—	68,250
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Total	867	67.7	5.26	0.00	5.26	5.13	0.00	5.13	8,630	136,432	145,062	788	3.64	213	166,060
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	780	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Energy	0.54	9.80	0.74	—	0.74	0.74	—	0.74	—	67,523	67,523	12.4	1.40	—	68,250
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Total	781	59.3	4.74	0.00	4.74	4.74	0.00	4.74	8,630	133,854	142,485	788	3.62	213	163,474
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	820	5.39	0.35	—	0.35	0.29	—	0.29	0.00	2,819	2,819	0.08	0.01	—	2,825
Energy	0.54	9.80	0.74	—	0.74	0.74	—	0.74	—	67,523	67,523	12.4	1.40	—	68,250
Water	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Waste	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Total	820	15.2	1.10	0.00	1.10	1.04	0.00	1.04	8,630	73,889	82,519	787	3.52	213	103,450
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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
Area	150	0.98	0.06	—	0.06	0.05	—	0.05	0.00	467	467	0.01	< 0.005	—	468

Energy	0.10	1.79	0.14	—	0.14	0.14	—	0.14	—	11,179	11,179	2.05	0.23	—	11,300
Water	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860
Waste	—	—	—	—	—	—	—	—	1,276	0.00	1,276	128	0.00	—	4,465
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	35.3	35.3
Total	150	2.77	0.20	0.00	0.20	0.19	0.00	0.19	1,429	12,233	13,662	130	0.58	35.3	17,127

4. Operations Emissions Details

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,145	1,145	0.23	0.03	—	1,160
General Office Building	—	—	—	—	—	—	—	—	—	13,755	13,755	2.80	0.34	—	13,926
Single Family Housing	—	—	—	—	—	—	—	—	—	40,926	40,926	8.34	1.01	—	41,436
Total	—	—	—	—	—	—	—	—	—	55,826	55,826	11.4	1.38	—	56,521
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,145	1,145	0.23	0.03	—	1,160
General Office Building	—	—	—	—	—	—	—	—	—	13,755	13,755	2.80	0.34	—	13,926
Single Family Housing	—	—	—	—	—	—	—	—	—	40,926	40,926	8.34	1.01	—	41,436
Total	—	—	—	—	—	—	—	—	—	55,826	55,826	11.4	1.38	—	56,521
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	190	190	0.04	< 0.005	—	192
General Office Building	—	—	—	—	—	—	—	—	—	2,277	2,277	0.46	0.06	—	2,306
Single Family Housing	—	—	—	—	—	—	—	—	—	6,776	6,776	1.38	0.17	—	6,860
Total	—	—	—	—	—	—	—	—	—	9,243	9,243	1.88	0.23	—	9,358

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,145	1,145	0.23	0.03	—	1,160

General Office Building	—	—	—	—	—	—	—	—	—	13,755	13,755	2.80	0.34	—	13,926
Single Family Housing	—	—	—	—	—	—	—	—	—	40,928	40,928	8.34	1.01	—	41,437
Total	—	—	—	—	—	—	—	—	—	55,828	55,828	11.4	1.38	—	56,523
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	1,145	1,145	0.23	0.03	—	1,160
General Office Building	—	—	—	—	—	—	—	—	—	13,755	13,755	2.80	0.34	—	13,926
Single Family Housing	—	—	—	—	—	—	—	—	—	40,928	40,928	8.34	1.01	—	41,437
Total	—	—	—	—	—	—	—	—	—	55,828	55,828	11.4	1.38	—	56,523
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	190	190	0.04	< 0.005	—	192
General Office Building	—	—	—	—	—	—	—	—	—	2,277	2,277	0.46	0.06	—	2,306
Single Family Housing	—	—	—	—	—	—	—	—	—	6,776	6,776	1.38	0.17	—	6,860
Total	—	—	—	—	—	—	—	—	—	9,243	9,243	1.88	0.23	—	9,358

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.46	0.04	—	0.04	0.04	—	0.04	—	552	552	0.05	< 0.005	—	553
General Office Building	0.51	9.34	0.71	—	0.71	0.71	—	0.71	—	11,143	11,143	0.99	0.02	—	11,174
Single Family Housing	10.2	174	14.1	—	14.1	14.1	—	14.1	—	220,854	220,854	19.5	0.42	—	221,466
Total	10.7	184	14.8	—	14.8	14.8	—	14.8	—	232,549	232,549	20.6	0.44	—	233,194
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.46	0.04	—	0.04	0.04	—	0.04	—	552	552	0.05	< 0.005	—	553
General Office Building	0.51	9.34	0.71	—	0.71	0.71	—	0.71	—	11,143	11,143	0.99	0.02	—	11,174
Single Family Housing	10.2	174	14.1	—	14.1	14.1	—	14.1	—	220,854	220,854	19.5	0.42	—	221,466
Total	10.7	184	14.8	—	14.8	14.8	—	14.8	—	232,549	232,549	20.6	0.44	—	233,194
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	< 0.005	0.08	0.01	—	0.01	0.01	—	0.01	—	91.3	91.3	0.01	< 0.005	—	91.6

General Office Building	0.09	1.70	0.13	—	0.13	0.13	—	0.13	—	1,845	1,845	0.16	< 0.005	—	1,850
Single Family Housing	1.86	31.8	2.57	—	2.57	2.57	—	2.57	—	36,565	36,565	3.24	0.07	—	36,666
Total	1.96	33.5	2.70	—	2.70	2.70	—	2.70	—	38,501	38,501	3.41	0.07	—	38,608

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.46	0.04	—	0.04	0.04	—	0.04	—	552	552	0.05	< 0.005	—	553
General Office Building	0.51	9.34	0.71	—	0.71	0.71	—	0.71	—	11,143	11,143	0.99	0.02	—	11,174
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.54	9.80	0.74	—	0.74	0.74	—	0.74	—	11,695	11,695	1.03	0.02	—	11,727
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	0.03	0.46	0.04	—	0.04	0.04	—	0.04	—	552	552	0.05	< 0.005	—	553
General Office Building	0.51	9.34	0.71	—	0.71	0.71	—	0.71	—	11,143	11,143	0.99	0.02	—	11,174

Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.54	9.80	0.74	—	0.74	0.74	—	0.74	—	11,695	11,695	1.03	0.02	—	11,727
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	< 0.005	0.08	0.01	—	0.01	0.01	—	0.01	—	91.3	91.3	0.01	< 0.005	—	91.6
General Office Building	0.09	1.70	0.13	—	0.13	0.13	—	0.13	—	1,845	1,845	0.16	< 0.005	—	1,850
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.10	1.79	0.14	—	0.14	0.14	—	0.14	—	1,936	1,936	0.17	< 0.005	—	1,942

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2.89	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Consumer Products	660	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectur al Coatings	117	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	86.0	8.45	0.51	—	0.51	0.39	—	0.39	—	2,577	2,577	0.11	0.02	—	2,586

Total	866	57.9	4.51	—	4.51	4.39	—	4.39	0.00	65,362	65,362	1.29	0.14	—	65,436
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2.89	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Consumer Products	660	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	117	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	780	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.22	0.02	—	0.02	0.02	—	0.02	0.00	256	256	< 0.005	< 0.005	—	257
Consumer Products	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	7.74	0.76	0.05	—	0.05	0.04	—	0.04	—	210	210	0.01	< 0.005	—	211
Total	150	0.98	0.06	—	0.06	0.05	—	0.05	0.00	467	467	0.01	< 0.005	—	468

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2.89	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Consumer Products	660	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectur al	117	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	86.0	8.45	0.51	—	0.51	0.39	—	0.39	—	2,577	2,577	0.11	0.02	—	2,586
Total	866	57.9	4.51	—	4.51	4.39	—	4.39	0.00	65,362	65,362	1.29	0.14	—	65,436
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2.89	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Consumer Products	660	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectur al Coatings	117	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	780	49.5	4.00	—	4.00	4.00	—	4.00	0.00	62,784	62,784	1.18	0.12	—	62,849
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.01	0.22	0.02	—	0.02	0.02	—	0.02	0.00	256	256	< 0.005	< 0.005	—	257
Consumer Products	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectur al Coatings	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	7.74	0.76	0.05	—	0.05	0.04	—	0.04	—	210	210	0.01	< 0.005	—	211
Total	150	0.98	0.06	—	0.06	0.05	—	0.05	0.00	467	467	0.01	< 0.005	—	468

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988
Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988
Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	6.13	8.25	14.4	0.02	0.01	—	19.0
General Office Building	—	—	—	—	—	—	—	—	58.2	78.3	137	0.22	0.13	—	180

Single Family Housing	—	—	—	—	—	—	—	—	88.3	501	589	0.41	0.21	—	660
Total	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988
Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	37.0	49.8	86.9	0.14	0.08	—	115
General Office Building	—	—	—	—	—	—	—	—	352	473	825	1.30	0.78	—	1,090
Single Family Housing	—	—	—	—	—	—	—	—	533	3,024	3,558	2.45	1.24	—	3,988

Total	—	—	—	—	—	—	—	—	922	3,547	4,469	3.89	2.10	—	5,193
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	6.13	8.25	14.4	0.02	0.01	—	19.0
General Office Building	—	—	—	—	—	—	—	—	58.2	78.3	137	0.22	0.13	—	180
Single Family Housing	—	—	—	—	—	—	—	—	88.3	501	589	0.41	0.21	—	660
Total	—	—	—	—	—	—	—	—	153	587	740	0.64	0.35	—	860

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	700	0.00	700	70.0	0.00	—	2,449
General Office Building	—	—	—	—	—	—	—	—	734	0.00	734	73.3	0.00	—	2,567
Single Family Housing	—	—	—	—	—	—	—	—	6,274	0.00	6,274	627	0.00	—	21,951
Total	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	700	0.00	700	70.0	0.00	—	2,449
General Office Building	—	—	—	—	—	—	—	—	734	0.00	734	73.3	0.00	—	2,567
Single Family Housing	—	—	—	—	—	—	—	—	6,274	0.00	6,274	627	0.00	—	21,951
Total	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	116	0.00	116	11.6	0.00	—	405
General Office Building	—	—	—	—	—	—	—	—	121	0.00	121	12.1	0.00	—	425
Single Family Housing	—	—	—	—	—	—	—	—	1,039	0.00	1,039	104	0.00	—	3,634
Total	—	—	—	—	—	—	—	—	1,276	0.00	1,276	128	0.00	—	4,465

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand ing	—	—	—	—	—	—	—	—	700	0.00	700	70.0	0.00	—	2,449
General Office Building	—	—	—	—	—	—	—	—	734	0.00	734	73.3	0.00	—	2,567
Single Family Housing	—	—	—	—	—	—	—	—	6,274	0.00	6,274	627	0.00	—	21,951
Total	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	700	0.00	700	70.0	0.00	—	2,449
General Office Building	—	—	—	—	—	—	—	—	734	0.00	734	73.3	0.00	—	2,567
Single Family Housing	—	—	—	—	—	—	—	—	6,274	0.00	6,274	627	0.00	—	21,951
Total	—	—	—	—	—	—	—	—	7,708	0.00	7,708	770	0.00	—	26,968
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	116	0.00	116	11.6	0.00	—	405
General Office Building	—	—	—	—	—	—	—	—	121	0.00	121	12.1	0.00	—	425
Single Family Housing	—	—	—	—	—	—	—	—	1,039	0.00	1,039	104	0.00	—	3,634
Total	—	—	—	—	—	—	—	—	1,276	0.00	1,276	128	0.00	—	4,465

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.45	1.45
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	3.56	3.56
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	208	208
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.45	1.45
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	3.56	3.56
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	208	208
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Free-Stand Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.59	0.59
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	34.5	34.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	35.3	35.3

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.45	1.45
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	3.56	3.56
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	208	208
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	1.45	1.45

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	3.56	3.56
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	208	208
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	213	213
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Free-Stand ing Discount store	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24	0.24
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.59	0.59
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	34.5	34.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	35.3	35.3

5. Activity Data

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	2982
Propane Fireplaces	0

Electric Fireplaces	0
No Fireplaces	11927
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	2982
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	11927
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
58871913.75	19,623,971	2,649,000	883,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
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Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Free-Standing Discount store	2,580,582	162	0.0330	0.0040	1,720,969
General Office Building	30,990,879	162	0.0330	0.0040	34,770,425
Single Family Housing	92,210,032	162	0.0330	0.0040	689,122,639

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Free-Standing Discount store	2,580,582	162	0.0330	0.0040	1,720,969
General Office Building	30,990,879	162	0.0330	0.0040	34,770,425
Single Family Housing	92,213,856	162	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Free-Standing Discount store	17,332,970	374
General Office Building	164,581,451	1,486
Single Family Housing	249,621,631	1,053,382,030

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Free-Standing Discount store	17,332,970	374
General Office Building	164,581,451	1,486
Single Family Housing	249,621,631	1,053,382,030

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Free-Standing Discount store	1,299	—
General Office Building	1,362	—
Single Family Housing	11,642	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Free-Standing Discount store	1,299	—
General Office Building	1,362	—
Single Family Housing	11,642	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Free-Standing Discount store	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Free-Standing Discount store	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Free-Standing Discount store	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Free-Standing Discount store	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
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Attachment 2: CT-EMFAC2021

File Name: Santa Clara (SF) - 2015 - Annual.EF
 CT-EMFAC2021 Version: 1.0.2.0
 Run Date: 5/21/2024 3:09:49 PM
 Area: Santa Clara (SF)
 Analysis Year: 2015
 Season: Annual

Vehicle Category	VMT Fraction	Diesel VMT Fraction	Gas VMT Fraction
	Across Category	Within Category	Within Category
Truck 1	0.029	0.392	0.608
Truck 2	0.029	0.946	0.041
Non-Truck	0.942	0.011	0.976

Road Type: Major/Collector
 Silt Loading Factor: CARB 0.032 g/m2
 Precipitation Correction: CARB P = 63 days N = 365 days

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.028437	0.021717	0.015087	0.010842	0.008514	0.007219	
0.006372	0.005904	0.005782	0.005988	0.006520	0.007001	0.007295	0.007491
0.007491							
PM10	0.030131	0.022959	0.015944	0.011456	0.008991	0.007618	
0.006719	0.006223	0.006091	0.006304	0.006861	0.007368	0.007680	0.007890
0.007890							
NOx	1.085678	0.913865	0.718374	0.610839	0.552417	0.516361	
0.489873	0.471992	0.462130	0.459976	0.465464	0.477138	0.494203	0.502765
0.502765							
CO	4.051216	3.499319	3.053328	2.711904	2.443824	2.226962	
2.047285	1.898776	1.777865	1.683009	1.614699	1.575969	1.572792	1.588885
1.588894							
HC	0.502509	0.335607	0.219634	0.150839	0.113467	0.090423	
0.075353	0.065763	0.060243	0.058056	0.058934	0.062881	0.070113	0.075398
0.075399							
TOG	0.574564	0.386734	0.250704	0.170191	0.127842	0.101929	
0.084864	0.073930	0.067589	0.065034	0.065963	0.070303	0.078179	0.083945
0.083946							
ROG	0.427625	0.290092	0.187301	0.126278	0.094899	0.075806	
0.063170	0.055057	0.050366	0.048522	0.049314	0.052616	0.058523	0.062841
0.062842							
1,3-Butadiene	0.001614	0.001054	0.000720	0.000518	0.000393	0.000314	
0.000263	0.000231	0.000214	0.000208	0.000212	0.000227	0.000255	0.000255
0.000255							
Acetaldehyde	0.005378	0.003708	0.002531	0.001808	0.001393	0.001126	

0.000947	0.000829	0.000759	0.000728	0.000734	0.000772	0.000840	0.000842
0.000842	Acrolein	0.000166	0.000108	0.000075	0.000054	0.000041	0.000033
0.000028	0.000025	0.000023	0.000022	0.000023	0.000025	0.000028	0.000028
0.000028	Benzene	0.016978	0.011044	0.007519	0.005389	0.004075	0.003241
0.002708	0.002376	0.002191	0.002123	0.002162	0.002309	0.002585	0.002589
0.002589	Diesel PM	0.016979	0.016254	0.011491	0.008169	0.006716	0.005867
0.005301	0.005010	0.004993	0.005251	0.005788	0.006182	0.006269	0.006275
0.006275	Ethylbenzene	0.005325	0.003457	0.002356	0.001691	0.001278	0.001017
0.000850	0.000747	0.000689	0.000669	0.000682	0.000729	0.000818	0.000819
0.000819	Formaldehyde	0.012898	0.008806	0.006013	0.004299	0.003303	0.002664
0.002239	0.001962	0.001799	0.001729	0.001746	0.001842	0.002017	0.002020
0.002020	Naphthalene	0.001425	0.000923	0.000628	0.000449	0.000339	0.000269
0.000225	0.000197	0.000181	0.000176	0.000179	0.000191	0.000214	0.000214
0.000214	POM	0.000337	0.000226	0.000154	0.000110	0.000084	0.000068
0.000057	0.000050	0.000046	0.000044	0.000045	0.000047	0.000052	0.000052
0.000052	DEOG	0.101442	0.097733	0.054589	0.029301	0.021870	0.017772
0.014610	0.012298	0.010773	0.009987	0.009900	0.010160	0.010241	0.010245
0.010246	CO2	937.723282	768.608875	628.402935	525.041563	450.575636	401.425806
372.031876	358.423635	357.011684	364.677752	377.444794	391.613001	403.848816	407.860493
407.860493	N2O	0.042106	0.037946	0.032479	0.028615	0.025880	0.023891
0.022499	0.021320	0.020726	0.020407	0.020557	0.021167	0.021959	0.021960
0.021961	CH4	0.071404	0.049251	0.033781	0.024527	0.019098	0.015605
0.013283	0.011776	0.010881	0.010489	0.010555	0.011140	0.012223	0.013005
0.013005	BC	0.003670	0.002587	0.001834	0.001354	0.001068	0.000882
0.000757	0.000677	0.000632	0.000619	0.000635	0.000666	0.000709	0.000711
0.000711							

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type		<= 5 mph		10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph		
Gasoline	0.097754	0.079574	0.064967	0.054014	0.046187	0.041040			
0.037949	0.036791	0.036855	0.037934	0.039458	0.040842	0.042073	0.041978		
0.041978	Diesel	0.010755	0.010380	0.008468	0.007296	0.006519	0.005964		
0.005545	0.005226	0.005004	0.004892	0.004887	0.004959	0.005100	0.005101		
0.005101									

Fleet Average Natural Gas Consumption (diesel-equivalent gallons/veh-mile)

Type		<= 5 mph		10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph		

Natural Gas	0.000217	0.000217	0.000153	0.000122	0.000103	0.000091	
0.000081	0.000074	0.000069	0.000064	0.000061	0.000061	0.000061	0.000061
0.000061							

Fleet Average Electricity Consumption (kilowatt-hours/veh-mile)

Type	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
Electricity	0.009286	0.006349	0.005380	0.004988	0.004803	0.004206	
0.004452	0.004645	0.004284	0.004424	0.004412	0.004507	0.004712	0.006725
0.006725							

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	1.441628
TOG	1.541287
ROG	1.541287
1,3-Butadiene	0.000000
Benzene	0.022245
Ethylbenzene	0.014400
Naphthalene	0.000000
HFC	0.029032

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002161
PM10	0.008645

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.004472	0.005007	0.005528	0.006037	0.006302	0.006403	
0.006380	0.005835	0.004716	0.003626	0.002969	0.002667	0.002365	0.002365
0.002365							
PM10	0.012777	0.014306	0.015794	0.017249	0.018006	0.018295	
0.018228	0.016673	0.013476	0.010360	0.008483	0.007620	0.006756	0.006756
0.006756							

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.016375
PM10	0.109168

File Name: Santa Clara (SF) - 2015 - Annual.EM
CT-EMFAC2021 Version: 1.0.2.0
Run Date: 5/21/2024 3:13:32 PM
Area: Santa Clara (SF)
Analysis Year: 2015
Season: Annual

Vehicle Category	VTM Fraction	Diesel VTM Fraction		Gas VTM Fraction
	Across Category	Within Category	Within Category	
Truck 1	0.029	0.392	0.608	
Truck 2	0.029	0.946	0.041	
Non-Truck	0.942	0.011	0.976	

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 63 days N = 365 days

Road Length: 1.804532E+07 miles
Volume: 1 vehicles per hour
Number of Hours: 1 hours
VTM: 1.804532E+07 miles

VTM Distribution by Speed Bin (mph):

<= 5 mph	0.28%
10 mph	0.20%
15 mph	0.97%
20 mph	5.25%
25 mph	17.78%
30 mph	19.35%
35 mph	9.07%
40 mph	5.98%
45 mph	6.11%
50 mph	4.69%
55 mph	6.19%
60 mph	14.55%
65 mph	9.58%
70 mph	0.00%
75 mph	0.00%

Summary of Emissions

	Running Exhaust	Running Loss	Tire Wear	Brake Wear	Road Dust	Total
Total	Total					

Pollutant Name (pounds)	(grams) (US tons)	(grams)	(grams)	(grams)	(grams)	(grams)	(grams)
PM2.5	134,175.7	-	38,995.9	89,085.8	295,492.2	557,749.6	1,229.627
PM10	141,491.8	-	156,001.8	254,535.4	1,969,971.9	2,522,001.0	5,560.060
NOx	9,204,677.3	-	-	-	9,204,677.3	20,292.839	10.146
CO	36,496,423.2	-	-	-	-	36,496,423.2	80,460.835
HC	1,560,629.3	836,474.3	-	-	-	2,397,103.6	5,284.708
TOG	1,755,852.9	894,299.3	-	-	-	2,650,152.2	5,842.585
ROG	1,307,475.6	894,299.3	-	-	-	2,201,774.9	4,854.082
1,3-Butadiene	5,459.1	0.0	-	-	-	5,459.1	12.035
Acetaldehyde	19,159.1	-	-	-	-	19,159.1	42.239
Acrolein	579.9	-	-	-	-	579.9	1.278
Benzene	56,224.2	12,907.2	-	-	-	69,131.4	152.409
Diesel PM	110,795.1	-	-	-	-	110,795.1	244.261
Ethylbenzene	17,672.9	8,355.3	-	-	-	26,028.2	57.382
Formaldehyde	45,496.6	-	-	-	-	45,496.6	100.303
Naphthalene	4,668.3	0.0	-	-	-	4,668.3	10.292
POM	1,162.1	-	-	-	-	1,162.1	2.562
DEOG	291,143.9	-	-	-	-	291,143.9	641.862
CO2	7,375,797,794.3	-	-	-	-	-7,375,797,794.3	16,260,849.596
N2O	419,201.7	-	-	-	-	419,201.7	924.181
CH4	267,790.7	-	-	-	-	267,790.7	590.377
BC	15,262.8	-	-	-	-	15,262.8	33.649
HFC	-	16,845.2	-	-	-	16,845.2	37.137

Summary of GHG Emissions

Pollutant Name	Emissions (metric tons)	CO2e (metric tons)
CO2	7,375.798	7,375.798
N2O	0.419	124.922
CH4	0.268	6.695
BC	0.015	7.021
HFC	0.017	24.089
Total CO2e	-	7,538.524

Summary of Consumptions

Gasoline	760,441.472	gallons
Diesel	102,721.402	gallons
Natural Gas	1,485.801	diesel-equivalent gallons
Electricity	82,136.459	kilowatt-hours

=====END=====

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File Name: 2040 GP - Annual.EF
CT-EMFAC2021 Version: 1.0.2.0
Run Date: 5/21/2024 3:18:45 PM
Area: Santa Clara (SF)
Analysis Year: 2040
Season: Annual

Vehicle Category	VMT Fraction		Diesel VMT Fraction		Gas VMT Fraction	
	Across Category	Within Category	Within Category	Within Category	Within Category	Within Category
Truck 1	0.029	0.285	0.349			
Truck 2	0.029	0.714	0.024			
Non-Truck	0.942	0.005	0.893			

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 63 days N = 365 days

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name		<= 5 mph		10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph		
PM2.5		0.003829	0.002536	0.001762	0.001293	0.000994	0.000810		
0.000706	0.000660	0.000663	0.000708	0.000792	0.000917	0.001087	0.001134		
0.001134									
PM10		0.004140	0.002738	0.001899	0.001392	0.001069	0.000871		
0.000757	0.000707	0.000708	0.000754	0.000843	0.000975	0.001155	0.001205		
0.001205									
NOx		0.224174	0.166186	0.116789	0.093203	0.075714	0.061845		
0.051057	0.043253	0.038371	0.036375	0.037249	0.041008	0.047652	0.048537		
0.048537									
CO		0.966726	0.855874	0.763070	0.689383	0.627853	0.574634		
0.528080	0.487285	0.451565	0.420404	0.393356	0.370637	0.351313	0.343923		
0.343923									
HC		0.062882	0.040187	0.026533	0.018796	0.014161	0.011236		
0.009347	0.008138	0.007413	0.007071	0.007071	0.007480	0.008305	0.008883		
0.008883									
TOG		0.068666	0.043925	0.029005	0.020560	0.015515	0.012327		
0.010258	0.008928	0.008125	0.007741	0.007732	0.008166	0.009056	0.009669		
0.009669									
ROG		0.046366	0.029502	0.019605	0.013862	0.010413	0.008232		
0.006821	0.005923	0.005393	0.005158	0.005190	0.005506	0.006161	0.006606		
0.006606									
1,3-Butadiene		0.000217	0.000138	0.000092	0.000065	0.000049	0.000038		
0.000032	0.000027	0.000025	0.000024	0.000025	0.000026	0.000030	0.000030		
0.000030									
Acetaldehyde		0.000733	0.000506	0.000351	0.000258	0.000202	0.000166		

0.000140	0.000121	0.000108	0.000100	0.000095	0.000099	0.000108	0.000108
0.000108	Acrolein	0.000023	0.000015	0.000010	0.000007	0.000005	0.000004
0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003
0.000003	Benzene	0.002222	0.001416	0.000946	0.000666	0.000497	0.000393
0.000323	0.000280	0.000257	0.000247	0.000250	0.000268	0.000302	0.000302
0.000302	Diesel PM	0.000553	0.000498	0.000408	0.000344	0.000294	0.000266
0.000260	0.000275	0.000313	0.000373	0.000454	0.000558	0.000679	0.000680
0.000680	Ethylbenzene	0.000701	0.000445	0.000296	0.000208	0.000155	0.000122
0.000100	0.000087	0.000080	0.000077	0.000078	0.000084	0.000095	0.000095
0.000095	Formaldehyde	0.001751	0.001194	0.000823	0.000600	0.000467	0.000382
0.000320	0.000277	0.000249	0.000230	0.000222	0.000233	0.000254	0.000254
0.000254	Naphthalene	0.000185	0.000117	0.000078	0.000055	0.000041	0.000032
0.000026	0.000023	0.000021	0.000020	0.000021	0.000022	0.000025	0.000025
0.000025	POM	0.000049	0.000031	0.000021	0.000015	0.000012	0.000009
0.000008	0.000007	0.000006	0.000006	0.000006	0.000006	0.000007	0.000007
0.000007	DEOG	0.003910	0.003444	0.002244	0.001667	0.001395	0.001196
0.001030	0.000892	0.000782	0.000698	0.000640	0.000673	0.000722	0.000722
0.000722	CO2	594.552208	484.746967	396.950514	332.654121	286.271502	255.260665
236.604411	227.996409	227.178361	232.134888	240.399087	249.770627	258.199916	261.079007
261.079007	N2O	0.015094	0.013999	0.011770	0.010440	0.009490	0.008803
0.008267	0.007886	0.007677	0.007582	0.007691	0.007929	0.008251	0.008227
0.008227	CH4	0.016155	0.010917	0.007315	0.005382	0.004217	0.003463
0.002958	0.002619	0.002399	0.002274	0.002230	0.002318	0.002488	0.002610
0.002610	BC	0.000905	0.000593	0.000410	0.000299	0.000228	0.000185
0.000153	0.000133	0.000123	0.000117	0.000119	0.000127	0.000141	0.000141
0.000141							

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type		<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	
Gasoline	0.061760	0.050211	0.041104	0.034187	0.029290	0.026513		
0.024206	0.023422	0.023738	0.024356	0.025471	0.026435	0.027210	0.026400	
0.026400	Diesel	0.005652	0.005433	0.004485	0.003958	0.003601	0.003334	
0.003132	0.002992	0.002915	0.002900	0.002949	0.003047	0.003195	0.003196	
0.003196								

Fleet Average Natural Gas Consumption (diesel-equivalent gallons/veh-mile)

Type		<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	

Natural Gas	0.000380	0.000377	0.000265	0.000211	0.000178	0.000156	
0.000140	0.000127	0.000118	0.000110	0.000103	0.000103	0.000103	0.000103
0.000103							

Fleet Average Electricity Consumption (kilowatt-hours/veh-mile)

Type	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
Electricity	0.108125	0.073921	0.062234	0.057318	0.054563	0.046740	
0.049513	0.050718	0.049387	0.050713	0.049766	0.050142	0.052194	0.067482
0.067482							

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	0.700002
TOG	0.748393
ROG	0.748393
1,3-Butadiene	0.000000
Benzene	0.010801
Ethylbenzene	0.006992
Naphthalene	0.000000
HFC	0.001988

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002159
PM10	0.008637

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003979	0.004509	0.005026	0.005533	0.005792	0.005861	
0.005818	0.005302	0.004266	0.003256	0.002639	0.002345	0.002052	0.002052
0.002052							
PM10	0.011369	0.012883	0.014361	0.015810	0.016547	0.016747	
0.016624	0.015149	0.012189	0.009303	0.007541	0.006701	0.005862	0.005862
0.005862							

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.016971
PM10	0.113139

File Name: 2040 GP - Annual.EM
CT-EMFAC2021 Version: 1.0.2.0
Run Date: 5/21/2024 3:22:23 PM
Area: Santa Clara (SF)
Analysis Year: 2040
Season: Annual

Vehicle Category	VMT Fraction	Diesel VMT Fraction	Gas VMT Fraction
	Across Category	Within Category	Within Category
Truck 1	0.029	0.285	0.349
Truck 2	0.029	0.714	0.024
Non-Truck	0.942	0.005	0.893

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 63 days N = 365 days

Road Length: 2.632433E+07 miles
Volume: 1 vehicles per hour
Number of Hours: 1 hours
VMT: 2.632433E+07 miles

VMT Distribution by Speed Bin (mph):

<= 5 mph	0.72%
10 mph	3.21%
15 mph	4.98%
20 mph	9.26%
25 mph	19.48%
30 mph	18.63%
35 mph	8.83%
40 mph	4.95%
45 mph	4.86%
50 mph	3.83%
55 mph	4.05%
60 mph	10.21%
65 mph	6.99%
70 mph	0.00%
75 mph	0.00%

Summary of Emissions

	Running Exhaust	Running Loss	Tire Wear	Brake Wear	Road Dust	Total
Total	Total					

Pollutant Name (pounds)	(grams) (US tons)	(grams)	(grams)	(grams)	(grams)	(grams)	(grams)	(grams)
0.723	PM2.5	26,772.3	-	56,834.2	125,150.4	446,750.2	655,507.2	1,445.146
3.959	PM10	28,725.8	-	227,363.3	357,582.0	2,978,308.7	3,591,979.8	7,918.959
	NOx	1,753,196.5	-	-	-	1,753,196.5	3,865.136	1.933
16.040	CO	14,551,015.0	-	-	-	-	14,551,015.0	32,079.495
1.225	HC	346,067.6	765,092.5	-	-	-	1,111,160.1	2,449.688
1.319	TOG	378,820.7	817,983.2	-	-	-	1,196,803.9	2,638.501
1.182	ROG	254,319.9	817,983.2	-	-	-	1,072,303.0	2,364.023
0.001	1,3-Butadiene	1,191.9	0.0	-	-	-	1,191.9	2.628
	Acetaldehyde	4,793.7	-	-	-	4,793.7	10.568	0.005
	Acrolein	127.0	-	-	-	127.0	0.280	< 0.001
0.026	Benzene	12,193.3	11,805.3	-	-	-	23,998.6	52.908
	Diesel PM	9,683.6	-	-	-	9,683.6	21.349	0.011
0.013	Ethylbenzene	3,806.6	7,642.2	-	-	-	11,448.8	25.240
0.012	Formaldehyde	11,136.0	-	-	-	-	11,136.0	24.551
0.001	Naphthalene	1,002.4	0.0	-	-	-	1,002.4	2.210
	POM	282.1	-	-	-	282.1	0.622	< 0.001
	DEOG	32,756.0	-	-	-	32,756.0	72.215	0.036
8,099.666	CO2	7,347,893,820.1	-	-	-	-	7,347,893,820.1	16,199,331.867
	N2O	239,056.3	-	-	-	239,056.3	527.029	0.264
	CH4	102,439.9	-	-	-	102,439.9	225.841	0.113
	BC	5,547.4	-	-	-	5,547.4	12.230	0.006
	HFC	-	2,172.9	-	-	2,172.9	4.790	0.002

Summary of GHG Emissions

Pollutant Name	Emissions (metric tons)	CO2e (metric tons)
CO2	7,347.894	7,347.894
N2O	0.239	71.239
CH4	0.102	2.561
BC	0.006	2.552
HFC	0.002	3.107
Total CO2e	-	7,427.353

Summary of Consumptions

Gasoline	761,564.307	gallons
Diesel	91,051.093	gallons
Natural Gas	4,259.127	diesel-equivalent gallons
Electricity	1,392,642.312	kilowatt-hours

=====END=====

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File Name: 2040GP_5WPU - Annual.EF
CT-EMFAC2021 Version: 1.0.2.0
Run Date: 5/21/2024 4:04:19 PM
Area: Santa Clara (SF)
Analysis Year: 2040
Season: Annual

Vehicle Category	VTM Fraction	Diesel VMT Fraction		Gas VMT Fraction
	Across Category	Within Category	Within Category	Within Category
Truck 1	0.029	0.285	0.349	
Truck 2	0.029	0.714	0.024	
Non-Truck	0.942	0.005	0.893	

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 63 days N = 365 days

Fleet Average Running Exhaust Emission Factors (grams/veh-mile)

Pollutant Name		<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	
PM2.5	0.000706	0.000660	0.000663	0.000708	0.000792	0.000917	0.001087	0.001134
	0.001134							
	PM10	0.004140	0.002738	0.001899	0.001392	0.001069	0.000871	
NOx	0.000757	0.000707	0.000708	0.000754	0.000843	0.000975	0.001155	0.001205
	0.001205							
	NOx	0.224174	0.166186	0.116789	0.093203	0.075714	0.061845	
CO	0.051057	0.043253	0.038371	0.036375	0.037249	0.041008	0.047652	0.048537
	0.048537							
	CO	0.966726	0.855874	0.763070	0.689383	0.627853	0.574634	
HC	0.528080	0.487285	0.451565	0.420404	0.393356	0.370637	0.351313	0.343923
	0.343923							
	HC	0.062882	0.040187	0.026533	0.018796	0.014161	0.011236	
TOG	0.009347	0.008138	0.007413	0.007071	0.007071	0.007480	0.008305	0.008883
	0.008883							
	TOG	0.068666	0.043925	0.029005	0.020560	0.015515	0.012327	
ROG	0.010258	0.008928	0.008125	0.007741	0.007732	0.008166	0.009056	0.009669
	0.009669							
	ROG	0.046366	0.029502	0.019605	0.013862	0.010413	0.008232	
1,3-Butadiene	0.006821	0.005923	0.005393	0.005158	0.005190	0.005506	0.006161	0.006606
	0.006606							
	1,3-Butadiene	0.000217	0.000138	0.000092	0.000065	0.000049	0.000038	
Acetaldehyde	0.000032	0.000027	0.000025	0.000024	0.000025	0.000026	0.000030	0.000030
	0.000030							
	Acetaldehyde	0.000733	0.000506	0.000351	0.000258	0.000202	0.000166	

0.000140	0.000121	0.000108	0.000100	0.000095	0.000099	0.000108	0.000108
0.000108	Acrolein	0.000023	0.000015	0.000010	0.000007	0.000005	0.000004
0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003	0.000003
0.000003	Benzene	0.002222	0.001416	0.000946	0.000666	0.000497	0.000393
0.000323	0.000280	0.000257	0.000247	0.000250	0.000268	0.000302	0.000302
0.000302	Diesel PM	0.000553	0.000498	0.000408	0.000344	0.000294	0.000266
0.000260	0.000275	0.000313	0.000373	0.000454	0.000558	0.000679	0.000680
0.000680	Ethylbenzene	0.000701	0.000445	0.000296	0.000208	0.000155	0.000122
0.000100	0.000087	0.000080	0.000077	0.000078	0.000084	0.000095	0.000095
0.000095	Formaldehyde	0.001751	0.001194	0.000823	0.000600	0.000467	0.000382
0.000320	0.000277	0.000249	0.000230	0.000222	0.000233	0.000254	0.000254
0.000254	Naphthalene	0.000185	0.000117	0.000078	0.000055	0.000041	0.000032
0.000026	0.000023	0.000021	0.000020	0.000021	0.000022	0.000025	0.000025
0.000025	POM	0.000049	0.000031	0.000021	0.000015	0.000012	0.000009
0.000008	0.000007	0.000006	0.000006	0.000006	0.000006	0.000007	0.000007
0.000007	DEOG	0.003910	0.003444	0.002244	0.001667	0.001395	0.001196
0.001030	0.000892	0.000782	0.000698	0.000640	0.000673	0.000722	0.000722
0.000722	CO2	594.552208	484.746967	396.950514	332.654121	286.271502	255.260665
236.604411	227.996409	227.178361	232.134888	240.399087	249.770627	258.199916	261.079007
261.079007	N2O	0.015094	0.013999	0.011770	0.010440	0.009490	0.008803
0.008267	0.007886	0.007677	0.007582	0.007691	0.007929	0.008251	0.008227
0.008227	CH4	0.016155	0.010917	0.007315	0.005382	0.004217	0.003463
0.002958	0.002619	0.002399	0.002274	0.002230	0.002318	0.002488	0.002610
0.002610	BC	0.000905	0.000593	0.000410	0.000299	0.000228	0.000185
0.000153	0.000133	0.000123	0.000117	0.000119	0.000127	0.000141	0.000141
0.000141							

Fleet Average Fuel Consumption (gallons/veh-mile)

Fuel Type		<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	
Gasoline	0.061760	0.050211	0.041104	0.034187	0.029290	0.026513		
0.024206	0.023422	0.023738	0.024356	0.025471	0.026435	0.027210	0.026400	
0.026400	Diesel	0.005652	0.005433	0.004485	0.003958	0.003601	0.003334	
0.003132	0.002992	0.002915	0.002900	0.002949	0.003047	0.003195	0.003196	
0.003196								

Fleet Average Natural Gas Consumption (diesel-equivalent gallons/veh-mile)

Type		<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph	

Natural Gas	0.000380	0.000377	0.000265	0.000211	0.000178	0.000156	
0.000140	0.000127	0.000118	0.000110	0.000103	0.000103	0.000103	0.000103
0.000103							

Fleet Average Electricity Consumption (kilowatt-hours/veh-mile)

Type	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
Electricity	0.108125	0.073921	0.062234	0.057318	0.054563	0.046740	
0.049513	0.050718	0.049387	0.050713	0.049766	0.050142	0.052194	0.067482
0.067482							

Fleet Average Running Loss Emission Factors (grams/veh-hour)

Pollutant Name	Emission Factor
HC	0.700002
TOG	0.748393
ROG	0.748393
1,3-Butadiene	0.000000
Benzene	0.010801
Ethylbenzene	0.006992
Naphthalene	0.000000
HFC	0.001988

Fleet Average Tire Wear Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.002159
PM10	0.008637

Fleet Average Brake Wear Factors (grams/veh-mile)

Pollutant Name	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph
40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2.5	0.003979	0.004509	0.005026	0.005533	0.005792	0.005861	
0.005818	0.005302	0.004266	0.003256	0.002639	0.002345	0.002052	0.002052
0.002052							
PM10	0.011369	0.012883	0.014361	0.015810	0.016547	0.016747	
0.016624	0.015149	0.012189	0.009303	0.007541	0.006701	0.005862	0.005862
0.005862							

Fleet Average Road Dust Factors (grams/veh-mile)

Pollutant Name	Emission Factor
PM2.5	0.016971
PM10	0.113139

File Name: 2040GP_5WPU - Annual.EM
CT-EMFAC2021 Version: 1.0.2.0
Run Date: 5/21/2024 4:07:00 PM
Area: Santa Clara (SF)
Analysis Year: 2040
Season: Annual

Vehicle Category	VMT Fraction	Diesel VMT Fraction		Gas VMT Fraction
	Across Category	Within Category	Within Category	
Truck 1	0.029	0.285	0.349	
Truck 2	0.029	0.714	0.024	
Non-Truck	0.942	0.005	0.893	

Road Type: Major/Collector
Silt Loading Factor: CARB 0.032 g/m2
Precipitation Correction: CARB P = 63 days N = 365 days

Road Length: 2.63146E+07 miles
Volume: 1 vehicles per hour
Number of Hours: 1 hours
VMT: 2.63146E+07 miles

VMT Distribution by Speed Bin (mph):

<= 5 mph	0.72%
10 mph	3.22%
15 mph	4.96%
20 mph	9.27%
25 mph	19.53%
30 mph	18.58%
35 mph	8.83%
40 mph	4.99%
45 mph	4.74%
50 mph	3.85%
55 mph	4.09%
60 mph	10.20%
65 mph	7.02%
70 mph	0.00%
75 mph	0.00%

Summary of Emissions

	Running Exhaust	Running Loss	Tire Wear	Brake Wear	Road Dust	Total
Total	Total					

Pollutant Name (pounds)	(grams) (US tons)	(grams)	(grams)	(grams)	(grams)	(grams)	(grams)	
0.722	PM2.5	26,769.9	-	56,813.2	125,079.3	446,585.0	655,247.4	1,444.573
3.958	PM10	28,723.1	-	227,279.2	357,378.6	2,977,207.4	3,590,588.3	7,915.892
	NOx	1,752,894.1	-	-	-	1,752,894.1	3,864.470	1.932
16.034	CO	14,545,406.3	-	-	-	-	14,545,406.3	32,067.130
1.225	HC	346,002.8	764,891.1	-	-	-	1,110,893.9	2,449.102
1.319	TOG	378,749.2	817,767.8	-	-	-	1,196,517.0	2,637.868
1.182	ROG	254,273.4	817,767.8	-	-	-	1,072,041.3	2,363.446
0.001	1,3-Butadiene	1,191.7	0.0	-	-	-	1,191.7	2.627
	Acetaldehyde	4,792.5	-	-	-	4,792.5	10.566	0.005
	Acrolein	127.0	-	-	-	127.0	0.280	< 0.001
0.026	Benzene	12,191.1	11,802.2	-	-	-	23,993.3	52.896
	Diesel PM	9,684.1	-	-	-	9,684.1	21.350	0.011
0.013	Ethylbenzene	3,806.0	7,640.1	-	-	-	11,446.1	25.234
0.012	Formaldehyde	11,133.4	-	-	-	-	11,133.4	24.545
0.001	Naphthalene	1,002.2	0.0	-	-	-	1,002.2	2.210
	POM	282.1	-	-	-	282.1	0.622	< 0.001
	DEOG	32,747.2	-	-	-	32,747.2	72.195	0.036
8,097.586	CO2	7,346,006,147.4	-	-	-	-	7,346,006,147.4	16,195,170.262
	N2O	238,985.1	-	-	-	238,985.1	526.872	0.263
	CH4	102,417.1	-	-	-	102,417.1	225.791	0.113
	BC	5,546.2	-	-	-	5,546.2	12.227	0.006
	HFC	-	2,172.3	-	-	2,172.3	4.789	0.002

Summary of GHG Emissions

Pollutant Name	Emissions (metric tons)	CO2e (metric tons)
CO2	7,346.006	7,346.006
N2O	0.239	71.218
CH4	0.102	2.560
BC	0.006	2.551
HFC	0.002	3.106
Total CO2e	-	7,425.442

Summary of Consumptions

Gasoline	761,363.505	gallons
Diesel	91,025.001	gallons
Natural Gas	4,257.810	diesel-equivalent gallons
Electricity	1,392,293.288	kilowatt-hours

=====END=====

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Daily VMT by Speed Bin %

Daily VMT

From " 5WUV Data.xlsx" "VMT.Speed.Data " tab

Daily VMT (Project Influence Area)						
Speed Bin	2015 Base Year		2040			
	Existing	%	General Plan	%	GP + 5WUV	%
<5	50,651	0.281%	190,655	0.724%	190,060	0.722%
10	35,328	0.196%	845,319	3.211%	846,616	3.217%
15	175,337	0.972%	1,311,434	4.982%	1,304,563	4.958%
20	947,132	5.249%	2,437,357	9.259%	2,439,372	9.270%
25	3,208,025	17.778%	5,128,608	19.482%	5,139,412	19.531%
30	3,492,047	19.352%	4,902,786	18.625%	4,890,624	18.585%
35	1,637,483	9.074%	2,324,145	8.829%	2,322,967	8.828%
40	1,078,346	5.976%	1,302,867	4.949%	1,312,912	4.989%
45	1,102,762	6.111%	1,280,287	4.864%	1,247,030	4.739%
50	846,415	4.690%	1,006,811	3.825%	1,014,079	3.854%
55	1,117,804	6.194%	1,067,280	4.054%	1,075,615	4.088%
60	2,625,660	14.550%	2,687,152	10.208%	2,683,201	10.197%
65	1,728,334	9.578%	1,839,630	6.988%	1,848,147	7.023%
70		0.000%		0.000%		0.000%
>70		0.00%		0.00%		0.000%
TOTAL	18,045,324	100.00%	26,324,331	100%	26,314,598	100%
Change			8,279,007		-9,733	
Truck %	5.80		5.80		5.80	

Existing

Pollutant Name	Total (Grams)	Total (Tons)	Total (Pounds)	Exhaust (Grams)	Non-Exhaust (Grams)	PM TOTAL (Tons)
PM2.5	557,749.60	0.61	1229.627385	134,175.70	423,573.90	0.61
PM10	2,522,001.00	2.78	5560.060457	141,491.80	2,380,509.10	2.78
NOx	9,204,677.30	10.15	20292.8398			
CO	36,496,423.20	40.23	80460.8402			
HC	2,397,103.60	2.64	5284.708823			
TOG	2,650,152.20	2.92	5842.585491			
ROG	2,201,774.90	2.43	4854.082753			
1,3-Butadiene	5,459.10	0.01	12.03525535			
Acetaldehyde	19,159.10	0.02	42.23858527			
Acrolein	579.90	0.00	1.278460658			
Benzene	69,131.40	0.08	152.4086483			
Diesel PM	110,795.10	0.12	244.2613838			
Ethylbenzene	26,028.20	0.03	57.38235853			
Formaldehyde	45,496.60	0.05	100.3028336			
Naphthalene	4,668.30	0.01	10.29183979			
POM	1,162.10	0.00	2.561991949			
DEOG	291,143.90	0.32	641.8624282			
CO2	7,375,797,794.30	8,130.43	16260850.67			
N2O	419,201.70	0.46	924.1815509			
CH4	267,790.70	0.30	590.3774351			
BC	15,262.80	0.02	33.64871415			
HFC	16,845.20	0.02	37.13730899			

Pollutant Name	Total (Grams)	Total (US Tons)	Total (Pounds)	Exhaust (Grams)	Non-Exhaust (Grams)	Total (Tons)
PM2.5	655,507.20	0.722573	1445.146002	26,772.30	628,734.80	0.72
PM10	3,591,979.80	3.959480	7918.959924	28,725.80	3,563,254.00	3.96
NOx	1,753,196.50	1.932568	3865.136664			1.932568
CO	14,551,015.00	16.039748	32079.49684			16.039748
HC	1,111,160.10	1.224844	2449.688693	346,067.60	765,092.50	1.224844346
TOG	1,196,803.90	1.319250	2638.500952	378,820.70	817,983.20	1.319250476
ROG	1,072,303.00	1.182012	2364.023451	254,319.90	817,983.20	1.182012
1,3-Butadiene	1,191.90	0.001314	2.627689703	1,191.90	0	0.001314
Acetaldehyde	4,793.70	0.005284	10.56829946	4,793.70	-	0.005284
Acrolein	127.00	0.000140	0.279987073	127.00	-	0.000140
Benzene	23,998.60	0.026454	52.90785645	12,193.30	11,805.30	0.026454
Diesel PM	9,683.60	0.010674	21.34868362			0.010674
Ethylbenzene	11,448.80	0.012620	25.24028347	3,806.60	7,642.20	0.012620
Formaldehyde	11,136.00	0.012275	24.55067752	11,136.00	-	0.012275
Naphthalene	1,002.40	0.001105	2.209913716	1,002.40	0.00	0.001105
POM	282.10	0.000311	0.621924042			0.000311
DEOG	32,756.00	0.036107	72.2146186			0.036107
CO2	7,347,893,820.10	8,099.666469	16199332.94			8099.666469
N2O	239,056.30	0.263514	527.0289269			0.263514
CH4	102,439.90	0.112921	225.8413209			0.112921
BC	5,547.40	0.006115	12.22992353			0.006115
HFC	2,172.90	0.002395	4.790424495			0.002395

Pollutant Name	Total (Grams)	Total (US Tons)	Total (Pounds)	Exhaust (Grams)	Non-Exhaust (Grams)	Total (Tons)
PM2.5	655,247.40	0.722287	1444.573241	26,769.90	628,477.50	0.72
PM10	3,590,588.30	3.957946	7915.892192	28,723.10	3,561,865.20	3.96
NOx	1,752,894.10	1.932235	3864.469987			1.932235
CO	14,545,406.30	16.033566	32067.13177			16.033566
HC	1,110,893.90	1.224551	2449.101822	346,002.80	764,891.10	1.224550911
TOG	1,196,517.00	1.318934	2637.868446	378,749.20	817,767.80	1.318934223
ROG	1,072,041.30	1.181723	2363.446502	254,273.40	817,767.80	1.181723
1,3-Butadiene	1,191.70	0.001314	2.627248778	1,191.70	0.00	0.001314
Acetaldehyde	4,792.50	0.005283	10.56565392	4,792.50	-	0.005283
Acrolein	127.00	0.000140	0.279987073	127.00	-	0.000140
Benzene	23,993.30	0.026448	52.89617195	12,191.10	11,802.20	0.026448
Diesel PM	9,684.10	0.010675	21.34978593			0.010675
Ethylbenzene	11,446.10	0.012617	25.23433099	3,806.00	7,640.10	0.012617
Formaldehyde	11,133.40	0.012272	24.5449455	11,133.40	-	0.012272
Naphthalene	1,002.20	0.001105	2.209472792	1,002.20	0.00	0.001105
POM	282.10	0.000311	0.621924042			0.000311
DEOG	32,747.20	0.036098	72.19521792			0.036098
CO2	7,346,006,147.40	8,097.585666	16195171.33			8097.585666
N2O	238,985.10	0.263436	526.8719577			0.263436
CH4	102,417.10	0.112896	225.7910555			0.112896
BC	5,546.20	0.006114	12.22727799			0.006114
HFC	2,172.30	0.002395	4.789101721			0.002395

Total Emissions

		2015	2040	2040	
General		Existing	General Plan	GP + 5WUV	
	PM _{2.5}	0.615	0.723	0.722	tons/day
	PM ₁₀	2.780	3.959	3.958	tons/day
	NO _x	10.146	1.933	1.932	tons/day
	CO	40.230	16.040	16.034	tons/day
	ROG	2.427	1.182	1.182	tons/day

Total Emissions

		2015 Existing	2040 General Plan	2040 GP + 5WUV	
General					
	PM _{2.5}	1,229.6	1,445.1	1,444.6	pounds/day
	PM ₁₀	5,560.1	7,919.0	7,915.9	pounds/day
	NO _x	20,292.8	3,865.1	3,864.5	pounds/day
	CO	80,460.8	32,079.5	32,067.1	pounds/day
	ROG	4,854.1	2,364.0	2,363.4	pounds/day

		2015	2040	2040	
GHGS		Existing	General Plan	GP + 5WUV	
	CO ₂	8130.43	8099.67	8097.59	tons/day
	N ₂ O	0.46	0.26	0.26	tons/day
	CH ₄	0.30	0.11	0.11	tons/day
	BC	0.017	0.0061	0.0061	tons/day
	HFCs	0.019	0.00240	0.00239	tons/day

		2015 Existing	2040 General Plan	2040 GP + 5WUV	
GHGS					
	CO ₂	7,376	7,348	7,346	Metric Tons CO ₂ e/Day
	N ₂ O	124.92	71.24	71.22	Metric Tons CO ₂ e/Day
	CH ₄	6.70	2.56	2.56	Metric Tons CO ₂ e/Day
	BC	7.02	2.55	2.55	Metric Tons CO ₂ e/Day
	HFCs	24.09	3.11	3.11	Metric Tons CO ₂ e/Day
	CO2e (Daily MT)	7,539	7,427	7,425	Metric Tons CO ₂ e/Day
	Difference		-111	-1.91	Metric Tons CO ₂ e/Day
	CO2e (Annual MT)	2,751,561	2,710,984	2,710,286	Metric Tons CO ₂ e/Year
	Difference			-698	Metric Tons CO ₂ e/Year
	Changes over Existing		-40,577	-41,275	Metric Tons CO ₂ e/Year
	US ton to Metric Ton Conversion Rate	1.102			

		2015	2040	2040	
MSATS		Existing	General Plan	GP + 5WUV	
	1,3-Butadiene	0.006	0.001	0.001	tons/day
	Acetaldehyde	0.021	0.005	0.005	tons/day
	Acrolein	0.001	0.000	0.000	tons/day
	Benzene	0.076	0.026	0.026	tons/day
	Diesel PM	0.122	0.011	0.011	tons/day
	Ethylbenzene	0.029	0.013	0.013	tons/day
	Formaldehyde	0.050	0.012	0.012	tons/day
	Naphthalene	0.0051	0.0011	0.0011	tons/day
	POM	0.00128	0.00031	0.00031	tons/day
	DEOG	0.321	0.036	0.036	tons/day

		2015 Existing	2040 General Plan	2040 GP + 5WUV	
MSATS					
	1,3-Butadiene	12.04	2.63	2.63	pounds/day
	Acetaldehyde	42.24	10.57	10.57	pounds/day
	Acrolein	1.28	0.28	0.28	pounds/day
	Benzene	152.41	52.91	52.90	pounds/day
	Diesel PM	244.26	21.35	21.35	pounds/day
	Ethylbenzene	57.38	25.24	25.23	pounds/day
	Formaldehyde	100.30	24.55	24.54	pounds/day
	Naphthalene	10.29	2.21	2.21	pounds/day
	POM	2.56	0.62	0.62	pounds/day
	DEOG	641.86	72.21	72.20	pounds/day
	Daily VMT	18,045,324	26,324,331	26,314,598	
	Annual VMT*	6,261,727,428	9,134,542,857	9,131,165,506	
	*multiply by 347				
	Difference (Daily)			-9,733	

Attachment 3: Existing Stationary Source Information

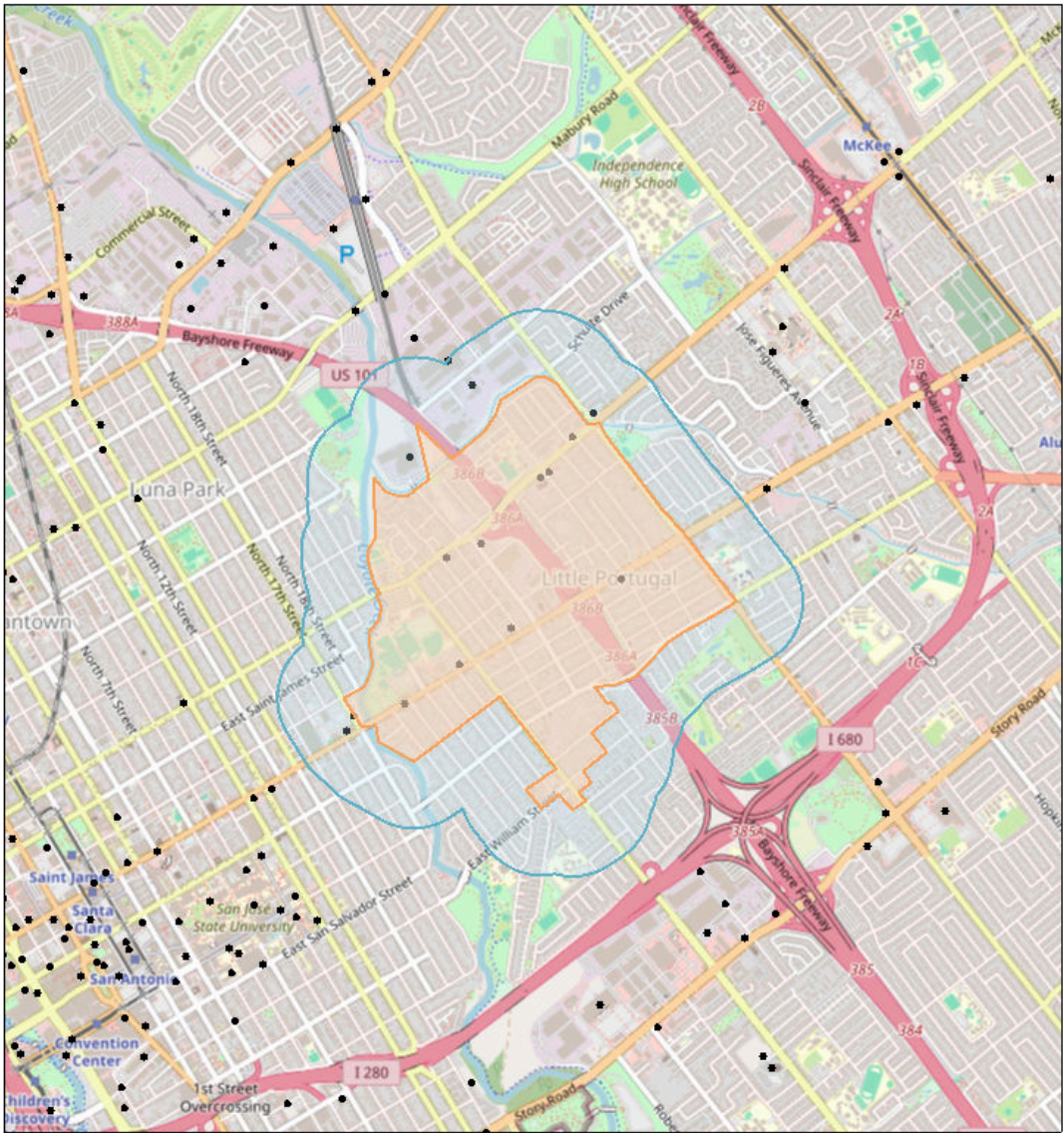


Screening Report

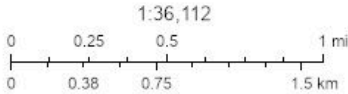
Area of Interest (AOI) Information

Area : 57,761,970.13 ft²

Apr 23 2024 15:24:02 Pacific Daylight Time



• Permitted Stationary Sources



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Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	15	N/A	N/A

Permitted Stationary Sources

#	Facility_I	Facility_N	Address	City	State
1	5582	Eggo Company	475 Eggo Way	San Jose	CA
2	6351	Pacific Auto Body	934 E Santa Clara St	San Jose	CA
3	18356	Verizon Wireless (Hwy 101/Julian)	1401 E Santa Clara St	San Jose	CA
4	18486	San Jose Fire Dept	1634 Las Plumas Ave Bldg#1	San Jose	CA
5	19802	San Jose Water Company	86 N 17th Street	San Jose	CA
6	21375	Tough Auto Body	15 N 27th St	San Jose	CA
7	21945	Tac Auto Repair	1119 E Santa Clara St	San Jose	CA
8	23495	Downtown San Jose - Valley Health Clinic	777 E Santa Clara St	San Jose	CA
9	100630	Gas & Shop	1590 McKee Rd	San Jose	CA
10	110368	Valero Refining Co SS#7760	1705 McKee Rd	San Jose	CA
11	110689	Speedway No. 4068	1256 E Julian St	San Jose	CA
12	110854	Therma LLC	1601 Las Plumas Ave	San Jose	CA
13	110970	Arco	1604 McKee Rd	San Jose	CA
14	111830	Shell SS#68202	1598 Alum Rock Ave	San Jose	CA
15	112363	Gas and Shop	1655 McKee Rd	San Jose	CA

#	Zip	County	Latitude	Longitude	Details
1	95116	Santa Clara	37.356514	-121.871505	No Data
2	95116	Santa Clara	37.345051	-121.871814	No Data
3	95116	Santa Clara	37.352487	-121.867351	Generator
4	95133	Santa Clara	37.359856	-121.867839	Generator
5	95112	Santa Clara	37.344475	-121.874784	Generator
6	95116	Santa Clara	37.348560	-121.865580	No Data
7	95116	Santa Clara	37.346882	-121.868603	No Data
8	95112	Santa Clara	37.343810	-121.875186	Generator
9	95116	Santa Clara	37.355579	-121.863854	Gas Dispensing Facility
10	95116	Santa Clara	37.358578	-121.860751	Gas Dispensing Facility
11	95116	Santa Clara	37.351852	-121.869370	Gas Dispensing Facility
12	95133	Santa Clara	37.360985	-121.869258	Gas Dispensing Facility
13	95116	Santa Clara	37.355791	-121.863396	Gas Dispensing Facility
14	95116	Santa Clara	37.350855	-121.859124	Gas Dispensing Facility
15	95116	Santa Clara	37.357427	-121.862012	Gas Dispensing Facility

#	NAICS	NAICS_Sect	NAICS_Sub	NAICS_Indu	Cancer_Ris
1	311211	Manufacturing	Food Manufacturing	Flour Milling	2.906000
2	811121	Other Services (except Public Administration)	Repair and Maintenance	Automotive Body, Paint, and Interior Repair and Maintenance	0.000000
3	517210	Information	Telecommunications	Wireless Telecommunications Carriers (except Satellite)	1.139000
4	922190	Public Administration	Justice, Public Order, and Safety Activities	Other Justice, Public Order, and Safety Activities	18.396000
5	221310	Utilities	Utilities	Water Supply and Irrigation Systems	144.491000
6	811121	Other Services (except Public Administration)	Repair and Maintenance	Automotive Body, Paint, and Interior Repair and Maintenance	0.000000
7	811121	Other Services (except Public Administration)	Repair and Maintenance	Automotive Body, Paint, and Interior Repair and Maintenance	0.000000
8	621111	Health Care and Social Assistance	Ambulatory Health Care Services	Offices of Physicians (except Mental Health Specialists)	0.939000
9	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	66.021000
10	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	7.128000
11	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	0.026000
12	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	2.702000
13	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	48.293000
14	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	35.945000
15	447110	Retail Trade	Gasoline Stations	Gasoline Stations with Convenience Stores	13.963000

#	Chronic_Ha	PM25	Count
1	0.007000	0.290000	1
2	0.001000	0.000000	1
3	0.000000	0.002000	1
4	0.005000	0.025000	1
5	0.067000	0.193000	1
6	0.001000	0.000000	1
7	0.000000	0.000000	1
8	0.004000	0.001000	1
9	0.286000	0.000000	1
10	0.031000	0.000000	1
11	0.000000	0.000000	1
12	0.012000	0.000000	1
13	0.210000	0.000000	1
14	0.156000	0.000000	1
15	0.061000	0.000000	1

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.