

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

ROBSON HOMES PLANNED DEVELOPMENT – GILMAN AVENUE

60 DILLON AVENUE, AND 57, 63, 71, 85, 101 GILMAN AVENUE, CAMPBELL, CA 95008

FEBRUARY 2024

PREPARED BY:

THE INTERWEST GROUP

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PREPARED FOR:

THE CITY OF CAMPBELL

70 NORTH FIRST STREET,

CAMPBELL, CA 95008

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▪ **PURPOSE OF ENVIRONMENTAL REVIEW**

This Initial Study (IS) has been prepared to identify potentially significant environmental impacts that would result from a multi-family residential project proposed at 57 - 101 Gilman Avenue and 60 Dillon Avenue (Project) that requires a Planned Development Permit, Affordable Housing Density Bonus, Vesting Tentative Subdivision Map, and Tree Removal Permit (Case No. PLN2023-125) that would be applied to the 1.15-acre (50,094 SF) project site at 60 Dillon Avenue and 57, 63, 71, 85, 101 Gilman Avenue, Campbell, CA 95008. This IS will also identify mitigation measures necessary to reduce any such impacts to a level considered less than significant.

A Mitigated Negative Declaration has been prepared based upon the information presented in this Initial Study, which determined that the proposed project would not have any significant impacts or that such impacts can be mitigated to a level considered less than significant. If it is determined that the proposed project would have one or more significant impacts that cannot be adequately mitigated, the lead agency (City) will require the preparation of an Environmental Impact Report (EIR).

Environmental Procedures

This IS has been prepared in accordance with the California Environmental Quality Act (CEQA), (Public Resources Code, sections 21000, et seq.), and the California Environmental Quality Act Guidelines (California Code of Regulations, title 14, sections 15000, et seq.) This report complies with the rules, regulations, and procedures for the implementation of the California Environmental Quality Act as adopted by the City of Campbell.

Lead Agency/Contact Persons

In accordance with Sections 15050 and 15367 of the State CEQA Guidelines, the City of Campbell has been designated the "lead agency" which is defined as the "public agency that has the principal responsibility for carrying out or disapproving a project". Robson Homes LLC, represented by Richard Yee (ryee@robsonhomes.com) is the project applicant.

Lead Agency: City of Campbell, Daniel Fama, Senior Planner, 70 N. First St, Campbell, CA 95008
Phone: 408-866-2193. Email: Danielf@campbellca.gov

Project Applicant: Robson Homes, 2185 The Alameda, #150, San Jose, CA 95126.

RESPONSIBLE/TRUSTEE AGENCIES

Responsible Agencies are those which have discretionary approval over one or more actions involved with development of the proposed project site. Trustee Agencies are state agencies having discretionary approval or jurisdiction by law over material resources affected by the project. Due to its size and character, there are no Responsible or Trustee Agencies associated with the Project.

▪ **BACKGROUND**

Robson Homes, represented by Richard Yee, is the applicant and is proposing to construct 25 townhomes with 3-bedroom and 2-bedroom floor plans, with 12 of the townhomes including Junior Accessory Dwelling Units of 322 SF to 328 SF, and a 10-unit apartment building with 1-bedroom and 2-bedroom units. 23 of the townhomes will be sold at market rate, one will be sold at the moderate-income level, and one will be sold at the very low-income level. Two of the apartments will rent at the very low-income level.

Location

The 1.15-acre (50,094 SF) project site is located at 60 Dillon Avenue and 57, 63, 71, 85, 101 Gilman Avenue, Campbell, CA 95008 and consists of six lots.

Address	Assessor Parcel Number
57 Gilman Avenue	412-09-032
63 Gilman Avenue	412-09-033
71-79 Gilman Avenue	412-09-034
85 Gilman Avenue	412-09-035
101 Gilman Avenue	412-09-036
60 Dillon Avenue	412-09-026

The project site is currently occupied by residential and industrial buildings. The proposed project involves demolition of the existing structures and improvements, followed by construction of residential units including townhomes, duets, and an apartment building. Associated improvements will include underground utilities, landscaping, exterior flatwork, driveways, and on-site streets.

▪ **Introduction**

Pursuant to Government Code §65941.1, Senate Bill 330, and Senate Bill 8, the applicant filed a preliminary application that vests their right to submit a formal development application under the standards and policies in effect at the time the preliminary application was accepted (March 20, 2023). The project is therefore subject to General Plan policies and Zoning District designations, as well as the General Plan Environmental Impact Report, that have since been replaced. At the time of preapplication, the project site was zoned P-D (Planned Development); the majority of the project site, with the exception of the 60 Dillon Avenue parcel, was located in the former South of Campbell Area Plan (SOCA), which has since been rescinded; the 60 Dillon Avenue parcel is located within the East Campbell Area Master Plan (ECAMP). This Initial Study has been prepared in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code 21000 et seq.) and the State CEQA Guidelines (California Administrative Code 15000 et seq.), as amended January 1, 2023. According to Section 15070 of the CEQA Guidelines,

“A public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

- (a) The Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or
- (b) The Initial Study identified potentially significant effects, but:
 - i. Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
 - ii. There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant impact on the environment.

The CEQA Guidelines Section 15382 defines “significant effect on the environment” as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, mineral, flora, fauna, ambient noise, and object of historic aesthetic significance.

An Initial Study is a preliminary analysis prepared by the lead agency to determine whether an EIR or Negative Declaration must be prepared and to identify the significant effects to be analyzed in an EIR (CEQA Guidelines Sec. 15365).

The Initial Study for the proposed project will serve to focus on effects determined to be potentially significant. This document has been prepared as an objective, full-disclosure document to inform agency decision-makers and the general public of the direct and indirect physical environmental effects of the proposed action and any measures to reduce or eliminate potential adverse impacts.

The environmental checklist, approved by the City and consistent with CEQA Guidelines, is used to focus this study on physical, social, and economic factors that may be further impacted by the proposed project. The checklist indicates one of the following determinations for each specified potential impact under each category of impact included on the checklist:

- "potentially significant impact"
- "potentially significant unless mitigation incorporated"
- "less than significant impact"
- "no impact"

e) Initial Study-Environmental Checklist, California Environmental Quality Act (CEQA)

1. Project title: Robson Homes Planned Development – Gilman Avenue.
2. Lead agency name and address: City of Campbell, 70 North First Street, Campbell, CA 95008.
3. Contact person and phone number: Daniel Fama
Senior Planner
City of Campbell
408-866-2100
4. Project location: 60 Dillon Avenue and 57, 63, 71, 85, 101 Gilman Avenue, Campbell, CA 95008. Figure 1 is the vicinity map and Figure 2 shows the project location within Campbell, CA.
5. Project sponsor's name and address: Richard Yee, Robson Homes, 2185 The Alameda, #150, San Jose, CA 95126.

6. General plan designation:

Existing	Proposed
Commercial / Medium-High Density Residential	Commercial / Medium-High Density Residential

7. Zoning:

Existing	Proposed
Planned Development (P-D)	Planned Development (P-D)

8. Description of Proposed Project:

The project proposes 25 townhomes with 3-bedroom and 2-bedroom floor plans, with 12 of the townhomes including Junior Accessory Dwelling Units of 322 SF to 328 SF, and a 10-unit apartment building with 1-bedroom and 2-bedroom units. 23 of the townhomes will be sold at market rate, one will be sold at the moderate-income level, and one will be sold at the very low-income level, and two of the apartments will rent at the very low-income level. The site plan includes 50 covered and 14 uncovered parking spaces, internal driveways, and landscaping, and will cover 26,884 SF of the 50,094 SF site (54% coverage).

A complete analysis of the design and layout of the proposed project will be prepared and processed through the City's Planned Development Permit and Vesting Tentative Subdivision Map processes and will be required to comply with all applicable design and development standards.

9. Setting and surrounding land uses:

Site Plan

The proposed project will demolish the existing, antiquated, single-family residences and industrial buildings and redevelop the site with a 35-unit subdivision consisting of townhomes, apartments, junior accessing dwelling units (JADU), affordable housing units, and associated site improvements in compliance with current city codes and development standards. The proposed residences are modern style buildings with high quality materials, craftsmanship, and detailing, and the site plan was designed to be pedestrian friendly, with internal driveways and easy access to the City's downtown and transit station.

Site Context / Surrounding Community

The 1.15-acre (50,094 SF) project site is located south of Campbell Ave between Dillon Ave and Gilman Ave, at 60 Dillon Avenue and 57, 63, 71, 85, 101 Gilman Avenue, Campbell, CA 95008 and consists of six lots (APNs: 412-09-026; 412-09-032;-33;-34;-35;-36). As proposed, the site is ideal for a multi-family subdivision which is in compliance with the existing Commercial/Medium-High Density Residential land use designation and Planned Development zoning.

The contextual land use and zoning designations are summarized below.

Direction	Land Use	Zoning
North	Central Business Mixed Use	Condominium Planned Development
East	Open Space	Open Space
South	General Commercial Mixed Use	Planned Development
West	Commercial Corridor Mixed Use	Commercial Corridor Mixed Use

The project site is within proximity to neighborhood schools, Campbell Park, the Pruneyard shopping center, Downtown Campbell, and a VTA transit station.

Figure 1 – Vicinity Map

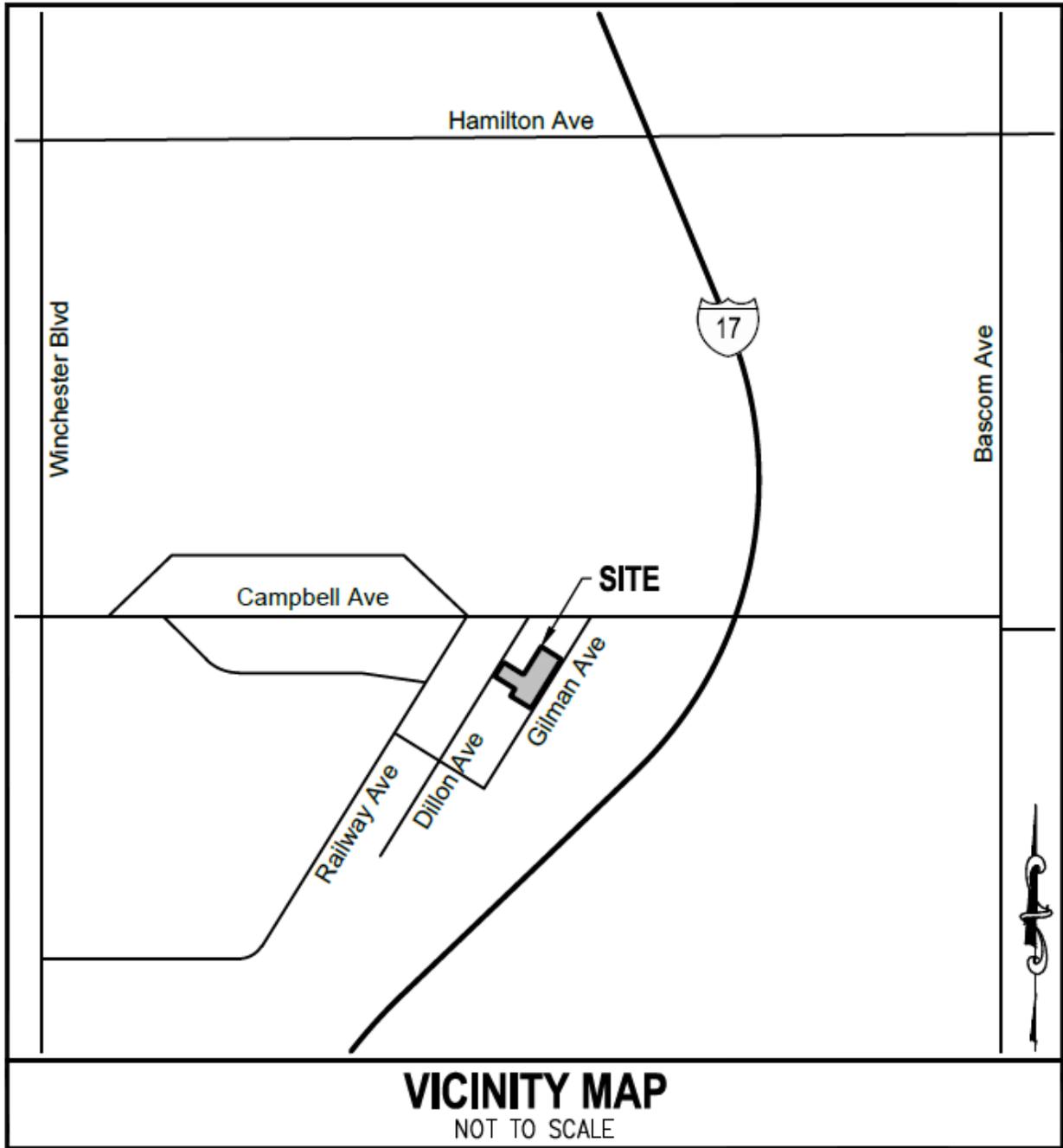
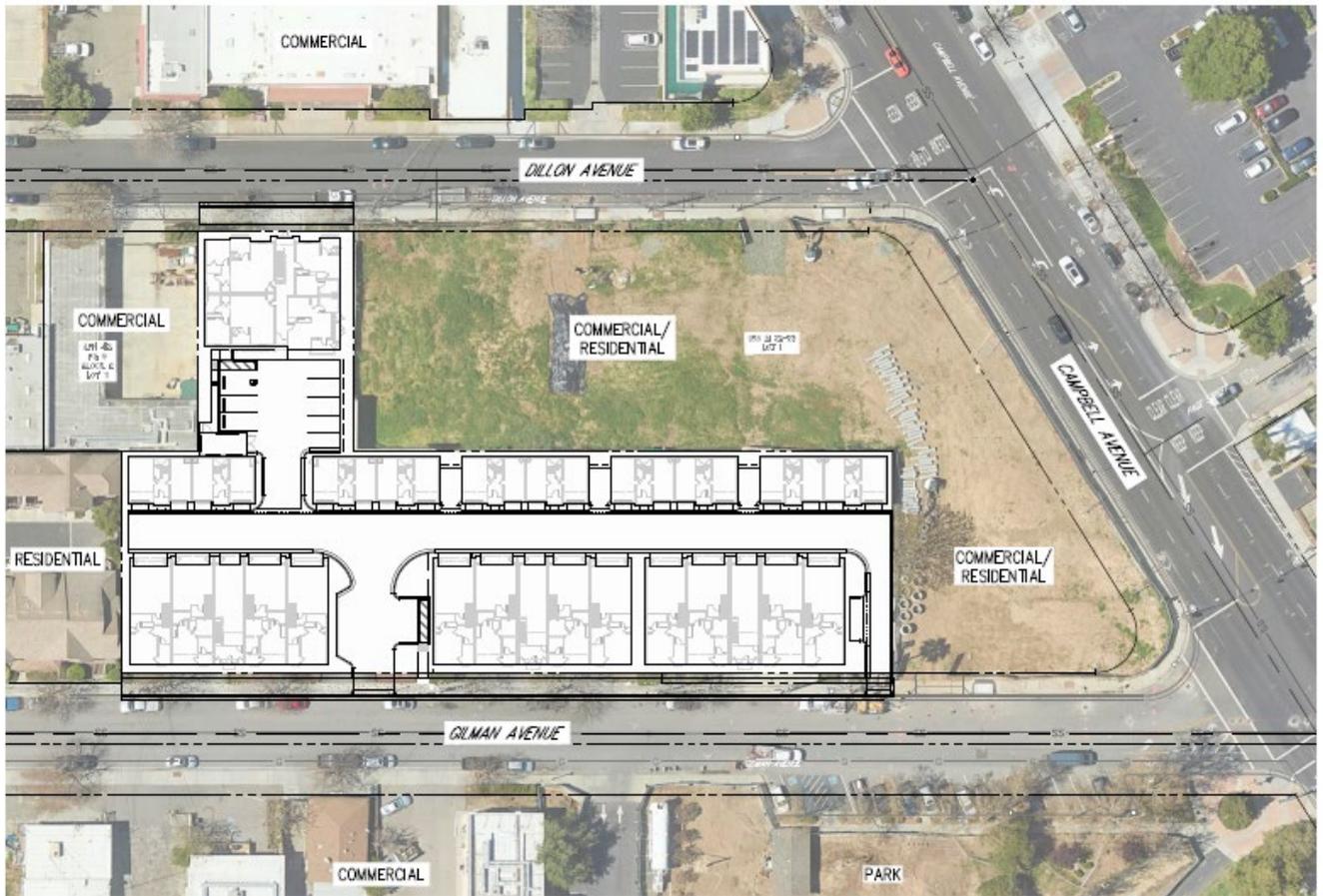


Figure 2 – Project Location Map



ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
X	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Daniel Fama, Senior Planner

Date

f) Checklist Responses and Environmental Analysis

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they

address site-specific conditions for the project.

- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
 - a. the significance criteria or threshold, if any, used to evaluate each question; and
 - b. the mitigation measure identified, if any, to reduce the impact to less than significance.

The City of Campbell General Plan Environmental Impact Report (SCH# 2001042063) was certified by the City Council in September 2001. The General Plan EIR examines the potential effects resulting from implementing designated land uses and policies in the proposed General Plan. Therefore, this project IS-MND will tier under the General Plan EIR to assess the potential for project site specific impacts and assign mitigation measures to reduce any potential impacts to a less than significant level.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic			X	

buildings within a state scenic highway?				
c) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

- a) The General Plan and EIR (GPEIR) do not identify any scenic vistas within the city’s boundaries and stated that impacts on scenic vistas are expected to be less than significant. The project site currently supports antiquated single-family residences and industrial buildings and is surrounded by commercial and industrial buildings and uses which do not provide scenic vistas.

The proposed multi-family housing project is consistent with existing zoning and will not impact scenic values. Therefore, the project will have a less than significant impact on a scenic vista.

- b) The General Plan and GPEIR do not identify any designated or eligible scenic highways in Campbell. A search on the Caltrans State Scenic Highways System Map confirmed that the closest officially designated scenic highway is a 3.4-mile section of Route 9 in unincorporated Santa Clara County, which is not visible from the project site. Therefore, the project will have a less than significant impact on scenic resources.

- c) A complete analysis of the design and layout of the proposed project will be prepared and processed through the City’s Planned Development Permit and Vesting Tentative Subdivision Map processes and will be required to comply with all applicable design and development standards. Therefore, the project will not conflict with applicable zoning and other regulations governing scenic quality and will have a less than significant impact.

- d) The project will be required to comply with the lighting standards contained in section 21.16.060 - Outdoor light and glare of the Campbell Municipal Code, which include criteria to eliminate light and glare.

Therefore, the project will not create a new source of substantial light or glare and will have a less than significant impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<p>II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				X

d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

- a) According to the Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), the project site and surrounding areas are designated as Urban and Built-Up Land. Therefore, the project will not Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. Therefore, there will be no impact.
- b) The existing project site zoning is Planned Development (P-D) which permits the proposed multi-family housing project. Therefore, the project will not conflict with existing zoning for agricultural use, or a Williamson Act contract. Therefore, there will be no impact.
- c) The existing project site zoning is Planned Development (P-D) which permits the proposed multi-family housing project. Therefore, the project will not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Therefore, there will be no impact.
- d) The 1.15-acre (50,094 SF) project site currently supports antiquated single-family residences and industrial buildings and is surrounded by commercial and industrial buildings and uses. The existing project site zoning is Planned Development (P-D) which permits the proposed multi-family housing project. Therefore, the project will not result in the loss of forest land or conversion of forest land to non-forest use. Therefore, there will be no impact.
- e) According to the Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP), the project site and surrounding areas are designated as Urban and Built-Up Land. The project site has a Commercial / Medium-High Density Residential land use designation and Planned Development (P-D) zoning. The project site could not result in the conversion of farmland or forest land. Therefore, there will be no impact.

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

b) Construction

In June 2010, the Bay Area Air Quality Management District (BAAQMD) adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. BAAQMD thresholds were updated in 2022; however, relevant air quality thresholds were unchanged.

Project impacts related to increased health risk can occur either by generating

emissions of toxic air contaminants (TACs) and air pollutants and by introducing a new sensitive receptor in proximity to an existing source of TACs. Temporary project construction activity would generate emissions of diesel particulate matter (DPM) from equipment and trucks and generate dust on a temporary basis that could affect nearby sensitive receptors. Additionally, the project could introduce new residents that are sensitive receptors who would be exposed to existing sources of TACs and localized air pollutants in the vicinity of the project. Therefore, the impact of the existing sources of TACs upon the existing sensitive receptors and new incoming sensitive receptors was assessed.

As indicated in Table 3, predicted unmitigated annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction. Therefore, impacts will be less than significant.

Table 3. Construction Period Emissions

Year	ROG	NOx	PM ₁₀ Exhaust	PM _{2.5} Exhaust
<i>Construction Emissions (Tons)</i>				
2023	0.06	2.31	0.04	0.03
2024	0.64	4.98	0.08	0.06
<i>Average Daily Construction Emissions (pounds/day)</i>				
2023 (195 construction workdays)	0.62	23.69	1.07	0.31
2024 (243 construction workdays)	5.27	40.99	0.55	0.49
<i>BAAQMD Thresholds (pounds per day)</i>	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	No	No	No	No

Source: Construction Health Risk Assessment, Illingworth & Rodkin Inc, 2/8/23. (Appendix A)

Operation

Development of the project site will be completed in compliance with the Bay Area Air Quality Management District (BAAQMD) Air Quality Guidelines. The BAAQMD's preliminary screening provides lead agencies with a conservative indication of whether implementing the proposed project could result in the generation of operational criteria air pollutants or precursors that exceed the thresholds of significance based on number of units. If all the screening criteria are met, the operation of the proposed project would result in a less-than-significant impact related to criteria air pollutants and precursors. The residential thresholds for Condo-Townhouse and Apartments are both 416 dwelling units.

The Air Quality Chapter of the General Plan EIR includes the following policy and strategy:

- Policy CNR-11.3: Air Quality Improvement Programs Support regional, State and federal programs to improve air quality.
- Strategy CNR-11.3b: Environmental Document Assess the adequacy of environmental documents for projects proposed in the City utilizing the

thresholds established in the BAAQMD guidelines.

The proposed project will construct 25 townhomes and 10 apartment units, for a total of 35 units, which is well below the 416 dwelling unit threshold. BAAQMD thresholds will not be exceeded, and no further analysis is required. Therefore, there will be no impact.

- c) The GPEIR states that construction activity completed in accordance with the General Plan would cause temporary, short-term emissions of various air pollutants. ROG and NO_x, which are ozone precursors, as well as particulate matter (PM₁₀ and PM_{2.5}) would be emitted by construction equipment during various activities, such as grading and excavation, infrastructure construction, building demolition, and a variety of construction activities. The GPEIR states that actual significance would be determined on a project-by project basis as future development applications are submitted. As stated in response a) above, the BAAQMD thresholds will not be exceeded, and no further analysis is required. Therefore, there will be no impact.

- d) -d) Development of the site with townhomes and an apartment building will result in the demolition of single-family homes and industrial buildings. Demolition of buildings is subject to BAAQMD Regulations and Rules specific to Asbestos Demolition, Renovation, and Manufacturing. The Regulations and Rules are intended to limit asbestos emissions from demolition and the associated disturbance of asbestos-containing waste material generated or handled during demolition. All asbestos-containing material found on the site must be removed prior to demolition in accordance with all applicable BAAQMD Regulations and Rules, including specific requirements for surveying, notification, removal, and disposal of material containing asbestos. By complying with the BAAQMD's rules, demolition activity would not result in a significant impact to air quality.

The BAAQMD CEQA Guidelines focuses on prevention of construction-related emissions, as they are generally short-term in duration. Fine particulate matter ("PM₁₀") is the pollutant of greatest concern with respect to construction activities. PM₁₀ emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction-related emissions can cause substantial increases in localized concentrations of PM₁₀. Particulate emissions from construction activities can lead to adverse health effects as well as nuisance concerns such as reduced visibility and soiling of exposed surfaces.

Construction emissions of PM₁₀ can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions and other factors. Despite this variability in emissions, experience has shown that there are several feasible control measures that can be reasonably

implemented to significantly reduce PM10 emissions from construction activity. The BAAQMD's approach to CEQA analyses of construction impacts is to emphasize implementation of effective and comprehensive control measures rather than detailed quantification of emissions. The District has identified a set of feasible PM10 control measures for construction activities on sites greater than 4 acres. While the project site is less than 4 acres, it is possible that demolition and grading activities on the site will be disruptive to sensitive receptors within proximity of the project site, including Campbell Park, and neighborhood residences. Therefore, the following mitigation measures should be implemented.

Mitigation Measures:

AQ-1: BAAQMD Basic Control Measures

- 1) Water all active construction areas at least twice daily.
- 2) Cover all trucks hauling soil, sand, and other loose materials *or* require all trucks to maintain at least two feet of freeboard.
- 3) Sweep all paved access roads, parking areas and staging areas at construction sites as required to prevent soil material from being carried onto adjacent streets.
- 4) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- 5) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- 6) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- 7) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- 8) All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for particulate matter (PM10 and PM2.5), if feasible, otherwise, use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 30 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment.
- 9) Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 30 percent or greater. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with				X

the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

a)-d) The 1.15-acre (50,094 SF) project site is in an urbanized area that is currently improved with single-family homes, industrial buildings, and associated improvements. The site is not on or near any migratory wildlife corridors nor would construction impede access to any native wildlife nursery sites since there are none near the site, and the site is not within a habitat conservation plan area. The project site is not near any sensitive natural community identified in local or regional plans, policies, and regulations or by any state or by the California Department of Fish and Game or US Fish and Wildlife Service.

GPEIR Chapter 3.4-Biological Resources states – “Subsequent development projects will be required to comply with the General Plan and adopted Federal, State, and local regulations for the protection of sensitive natural communities, including protected wetlands.” Implementation of the following General Plan policy would result in a less than significant impact.

e)-f) A Tree Inventory, Assessment, and Protection Report was completed for the project site on February 17, 2023, by Monarch Consulting Arborist (Appendix B). The report summary states – “The inventory contains thirteen trees comprised of five different species. There are seven “Street Trees” (Chinese pistache (*Pistacia chinensis*). Six trees are in good condition and the remaining seven fair. All eight

Street Trees have fair suitability for preservation while the remaining five specimens located inside the lots are all poorly suited for retention. All the trees are to be removed including the Street Trees. Four of the five interior trees are considered protected by the ordinance.” The report includes the following recommendations:

- Place tree numbers on all the plans.
- Provide a landscape plan to account for the loss of trees and obtain all necessary permits prior to removing anything.

The Biological Resources chapter of the General Plan includes the following policy – COS-7.4 - Conserve existing native trees and vegetation where possible and integrate regionally native plant species into development and infrastructure projects where appropriate.

Chapter 21.32 – Tree Protection Regulations of the Campbell Municipal Code includes permitting requirements for the removal of protected trees. The applicant has requested and will secure a Tree Removal permit with the applicable tree replacement ratios to ensure compliance with the applicable General Plan policies, Municipal Code Regulations, and Arborist recommendations. Therefore, the project will not conflict with any local policies or ordinances protecting biological resources and will have no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?			X	
c) Disturb any human remains, including those		X		

interred outside of formal cemeteries?				
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- a) Thirty-seven cultural resources have been identified within the City of Campbell, according to files maintained by the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS).

The City of Campbell Historic Resource Inventory was approved in September 2022 and includes 20 Designated Historic Landmark properties, 35 Designated Historic District properties, and 89 Designated Structures of Merit. The project site does not include any of the properties or structures listed on the City’s Historic Resources Inventory. Therefore, the project will not impact a historical resource as defined in §15064.5.

- c) The project site was previously excavated and improved with single-family residences, industrial buildings, and associated improvements. Therefore, the project is not anticipated to have an impact on archaeological resources as defined in §15064.5. The following General Plan strategy would reduce potential impacts to archaeological resources to a less than significant level.

- Strategy CNR-1./b: Archaeological Resources In accordance with CEQA and the State Public Resources Code, require the preparation of a resource mitigation plan and monitoring program by a licensed archaeologist if archaeological resources are found on any sites within the City.
- The 1.15-acre development site is zoned Planned Development and has been improved with single-family residences, industrial buildings, and associated improvements. The project site is not recognized near, adjacent to, or within a cemetery or unique archeological feature and is unlikely to contain human remains.

State code requires that if a unique archeological resource or site or human remains are found during excavation during any grading or earth-moving activities, all work will be suspended until the area has been thoroughly examined by a qualified archeologist. Therefore, impacts will be less than significant with mitigation.

Mitigation Measures:

CULT-1: Pursuant to the California Health and Safety Code Section 7050.5, and the CEQA Guidelines Section 15064.5, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the coroner determines the remains to be Native American or has reason

to believe that they are Native American, the coroner shall contact by telephone within 24-hours of the Native American Heritage Commission to determine the Most Likely Descendent (MLD).

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

a-b) The proposed project will be reviewed by city departments for compliance with all applicable codes, including the Campbell Municipal Code Chapter 18.26 – Green Building Standards Code, which implements the 2022 California Green Building Standard Code. The proposed project will also require a Planned Development Permit and Vesting Tentative Subdivision Map approvals to ensure compliance with all required energy efficiency standards, including Low Impact Development (LID), solar, and electric vehicle charging, and other green/sustainable features that will be defined during the design review processes. Therefore, impacts to energy resources are expected to be less than significant.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact

VII. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or			X	

property?				
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Responses to the above CEQA questions, specific to Geology and Soils, were provided by the Geotechnical Study completed on June 28, 2023, by Geo-Logic Associates. (Appendix C)

ai-iv) Ground Rupture

The project site is not located in an Alquist-Priolo Earthquake Fault Zone. Because no active or potentially active faults are known to cross the site, it is reasonable to conclude that the risk of fault rupture through the project site is low.

Seismic Shaking

The project site is located in an area of high seismicity. Based on general knowledge of the site seismicity, it should be anticipated that, during their useful life, the proposed structures will be subject to at least one severe earthquake (magnitude 7 to 8+) that could cause considerable ground shaking at the site. It is also anticipated that the site will periodically experience small to moderate magnitude earthquakes.

Liquefaction

The project site is not located in a California Geological Survey (CGS) Earthquake Zones of Required Investigation for liquefaction. The site is also not located in a Santa Clara County liquefaction zone. In our opinion, the potential for liquefaction at the site is low because groundwater is deeper than 50 feet below ground surface (bgs).

Therefore, project impacts will be less than significant.

b) The GPEIR states that existing urban areas, including the project site, have a very low soil erosion potential. The Planned Development Permit and Vesting Tentative Subdivision Map will be reviewed for compliance with the CBSC, General Plan,

Zoning Ordinance, and other applicable regulations. In addition to compliance with city standards and policies the Regional Water Quality Control Board will require a project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for the project because it will disturb more than one acre in area. Therefore, project impacts will be less than significant.

- c)-d) The results of an Atterberg limits test performed on a near-surface soil sample indicate the soil has an intermediate plasticity which generally corresponds to a medium expansion potential.

Expansive soils are characterized by their ability to undergo significant volume change (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from rainfall, landscape irrigation, perched groundwater, drought or other factors. Changes in soil moisture may result in unacceptable settlement or heave of structures, concrete slabs and pavements supported on these materials. Depending on the extent and location below finished subgrade, these soils could have a detrimental effect on the proposed construction.

The proposed buildings will be supported on post-tensioned (PT) slab foundations. The PT slabs should be designed for the potential effects of the underlying medium expansion potential soils as recommended in Section 6.2.2 of this report. Exterior concrete slabs should be constructed on a layer of "non-expansive" fill or proper moisture-conditioned subgrade soil. Therefore, project impacts will be less than significant.

- According to the project plans set, the site will be fully connected to all utilities, including sanitary/sewer in compliance with city specifications and standards. Therefore, there will be no impact from soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. Therefore, there will be no impact.
- The project site was previously excavated and graded and supports existing single-family residences, industrial buildings, and associated improvements, is zoned Planned Development, and is not recognized as a unique paleontological or a unique geologic feature. However, as stated in the geology and soils section above, if a unique paleontological resource or site or unique geologic feature are found during excavation, all work will be suspended until the area has been thoroughly examined. Therefore, there will be no impact.

Mitigation Measures:

The Geotechnical Study completed on June 28, 2023, by Geo-Logic Associates includes the following Geotechnical Recommendations 5.1 through 5.6 which are recommended mitigation measures.

1. 5.1 – Earthwork
2. 5.2 – Foundations
3. 5.3 – Concreate Slabs on Grade
4. 5.4 - Retaining Walls
5. 5.5 – Vehicle Pavements
6. 5.6 - Surface and Subsurface Drainage

Therefore, compliance with all RWQCB and city requirements, and geotechnical recommendations will result in a less than significant impact.

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

Greenhouse gases (GHGs) are present in the atmosphere naturally, released by natural sources, and released by human driven sources. The six gases that contribute to human-induced global climate change are:

- Carbon dioxide (CO₂);
- Methane (CH₄);
- Nitrous oxide (N₂O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF₆).

These gases vary considerably in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is measured relative to CO₂. GHG emissions are typically measured in terms of pounds or tons of CO₂ equivalents (CO₂e).

Responses to the above CEQA questions, specific to Greenhouse Gas Emissions, were provided by the CalEEMod model outputs for the proposed project.

a) This section describes the proposed project's construction and operation GHG emissions and contribution to global climate change.

Construction. During construction, GHGs would be emitted through operation of construction equipment and from worker and vendor vehicles. The BAAQMD has not established a threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions. As shown in Table 4 below, CalEEMod calculations estimate that construction of the proposed project would generate approximately 203.13 metric tons of CO₂e (refer to Appendix A for model outputs).

Table 4: Construction Emissions

Year	Emissions			
	CO ₂	CH ₄	N ₂ O	CO ₂ e
2024	201.9	<0.1	0.0	203.12
2025	37.3	<0.1	<0.1	37.5
			Maximum	203.12

Implementation of Mitigation Measure AQ-1 and AQ-2 would reduce GHG emissions by reducing the amount of construction vehicle idling and requiring the use of properly maintained equipment. Implementation of BAAQMD's GHG specific construction related best practices will further reduce emissions. Therefore, GHG impacts associated with construction would be less than significant with mitigation.

Mitigation Measures:

GHG-1: Implement the following construction best practices:

- 1) Use zero-emission and hybrid-powered equipment if reasonably available, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area or Assembly Bill 617 community.
- 2) Require all diesel-fueled off-road construction equipment be equipped with EPA Tier 4 Final compliant engines or better as a condition of contract.
- 3) 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 the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
- 4) Prohibit off-road diesel-powered equipment from being in the “on” position for more than 10 hours per day.
 - 5) Require all construction equipment is maintained and properly tuned in accordance with manufacturer’s specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.
 - 6) Where grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
 - 7) Where grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.
 - 8) Reduce electricity use in the construction office by using LED bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.
 - 9) Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15% more by weight than the diversion requirement in Title 24.
 - 10) Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials and based on volume for roadway, parking lot, sidewalk and curb materials).
 - 11) Use low-carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix.
 - 12) Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.
 - 13) Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

Operational Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks), area sources (e.g., maintenance activities), stationary sources (e.g., generators), indirect emissions from sources associated with energy consumption, waste sources (waste disposal), and water sources (water supply and conveyance). The project is not anticipated to have any stationary sources. Following guidance from the BAAQMD, GHG emissions were estimated using CalEEMod. As shown in Table 5 below, CalEEMod calculations estimate that construction of the proposed project would generate approximately 3,776 metric tons of CO₂e (refer to Appendix A for model outputs). Incorporation of solar panels, affordable housing, higher densities, and access to transit, all of which the project proposes, will reduce emissions to 2,578 metric tons of CO₂e.

The proposed Project would generate minimal area-source, waste source, and water source emissions. Trip generation rates for the project were based on the project's Transportation Impact Analysis, which estimates that the proposed project would generate approximately 231 net new trips per day. The proposed project will incorporate solar panels that will provide approximately 30% of residential energy needs. As California's grid becomes more reliant on renewable energy, energy source emissions from the project will decrease. Therefore, the proposed project would generate minimal energy source emissions. The project is located within 0.1 miles of transit access, which will reduce operational emissions due to mobile sources.

Table 5: Mitigated Operational Emissions

Emissions Source	Operational Emissions				
	CO ₂	CH ₄	N ₂ O	CO ₂ e	Percent of Total
Area Source	0.43	<0.1	0.0	0.43	0.1
Energy Source	43.3	<0.1	<0.1	43.6	1.6
Mobile Source	2,477.5	<0.18	<0.13	2,521	97.8
Stationary Source Emissions	0	<0.1	0.0	0	0.3
Waste Source Emissions	3.2	0.19	0.0	8.1	0.1
Water Source Emissions	2.3	<0.1	<0.1	4.7	0.1
Total Annual Emissions				2,578	100

BAAQMD's approach to developing thresholds of significance for climate impacts is to use a "fair share" approach for determining whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve the State's long-term GHG reduction goals, then the lead agency can find that the project's impact is not significant. BAAQMD has identified design elements required of new land use projects in order to achieve California's long-term climate goal of carbon neutrality by 2045. If these design elements are incorporated into the design and construction of a project, then the Project would not make a cumulatively considerable contribution to global climate change. The project must include one of the two design elements. These guidelines are:

- Projects must include, at a minimum, the following project design elements:
 - Buildings:
 - The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
 - The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis

required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

- Transportation
 - The project will 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 that reflects the recommendations provided in the Governor’s Office of Planning and Research’s Technical Advisory:
- Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

The project does not include any natural gas appliances or plumbing. Conformance with California Green Building Code and Energy Code standards will ensure the project does not result in any wasteful, inefficient, or unnecessary energy use. The project site is located 0.10 miles from the Hamilton Light Rail (LRT) Station and therefore meets the City’s VMT screening criteria, discussed further in the Transportation section. Therefore, GHG impacts associated with operations would be less than significant.

b) This section describes the proposed project’s consistency with applicable plans, policies or regulations adopted for the purpose of reducing the emissions of greenhouse gases.

The City of Campbell does not have an adopted Climate Action Plan or local GHG reduction targets. Compliance with California Green Building Code and Energy Code standards will ensure the project is consistent with state requirements for energy efficiency and contributes to reaching statewide GHG emission reduction goals. Therefore, the proposed Project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This impact would be less than significant.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:				
a) Create a significant hazard				X

to the public or the environment through the routine transport, use, or disposal of hazardous materials?				
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires?				X

- a) The project includes 25 townhomes with 12 of the townhomes including Junior Accessory Dwelling Units, a 10-unit apartment building, 64 parking spaces, and associated improvements on a 1.15-acre (50,094 SF) site, and will not involve the transport, use, or disposal of hazardous materials. Therefore, there will be no impact.
- b) An EnviroStor search at the California Department of Toxic Substances Control confirmed that there is an active Assessment & Interim Remedial Action at the project site (GeoTracker ID T10000020779) which was opened on January 9, 2023, and is being managed by Ross Steenson-Senior Engineering Geologist at the San Francisco Bay Regional Water Quality Control Board (RWQCB). On November 21, 2023, the RWQCB approved the Current Conditions Report (CCR) and Corrective Action Plan (CAP) for this case (Appendix E), and included the following next steps:
 - a. Excavation of shallow soil to address metals and dieldrin following building demolition.
 - b. Submission of a CAP completion report deemed acceptable by the Regional Water Board.

Once complete, the Site will be eligible for a no further action (NFA) determination from the RWQCB. Therefore, compliance with the following mitigation measure will ensure impacts are less than significant.

Mitigation:

- Applicant shall submit a proposal for no further action (NFA) and obtain a NFA determination from the RWQCB.
https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/sitecleanup/Low_Threat_Closure_Assessment_Tool.pdf
- c) There is one school located within 0.25-miles (1,320-ft) from the project site, which is Nelly’s Childcare and Preschool located 950-ft from the project site, at 202 Railway Ave Building B, Campbell, CA 95008. However, as stated above, the proposed project includes 25 townhomes with 12 of the townhomes including

Junior Accessory Dwelling Units, a 10-unit apartment building, 64 parking spaces, and associated improvements on a 1.15-acre (50,094 SF) site that will not emit hazardous emissions or handle hazardous materials, substances, or waste. Therefore, there will be no impact.

- d) An EnviroStor search at the California Department of Toxic Substances Control confirmed that there is an active Assessment & Interim Remedial Action at the project site (GeoTracker ID T10000020779) which was opened on January 9, 2023, and is being managed by Ross Steenson-Senior Engineering Geologist at the San Francisco Bay Regional Water Quality Control Board. On November 21, 2023, the RWQCB approved the Current Conditions Report (CCR) and Corrective Action Plan (CAP) for this case (Appendix E), and included the following next steps:
 - a. Excavation of shallow soil to address metals and dieldrin following building demolition.
 - b. Submission of a CAP completion report deemed acceptable by the Regional Water Board.

Once complete, the Site will be eligible for a no further action (NFA) determination from the RWQCB. Therefore, there will be no impact.

- e) The project site is not located within an airport land use plan. The closest airport is San Jose International, approximately 4.4-miles northeast of the project site. Therefore, there will be no impact.
- f) The project site fronts onto Dillon Avenue and Gilman Avenue but will not alter traffic operations on those roads. Therefore, the proposed 47 residences would not physically interfere with any emergency response plan or emergency evacuation plan. Therefore, there will be no impact.
- g) A search of the fire hazard severity zones viewer at CalFire confirmed that the project site is not located within, or within proximity to a Very High Fire Hazard Severity Zone (VHFHSZ). The closest VHFHSZ is located on the eastern edge of the Fremont Open Space Preserve area, approximately 7-miles west of the project site. The project site is in a Local Responsibility Area (LRA), and the site and structures will be constructed in compliance with applicable fire codes and standards. Therefore, there will be no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact

		Incorporation		
X. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources			X	

of polluted runoff?				
f) Impede or redirect flood flows?			X	
g) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
h) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

- a) Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, sedimentation, and soil compaction. The proposed project will be reviewed by city departments for compliance with all applicable codes, including the City of Campbell Municipal Code Chapter 14.02 – Stormwater Pollution Control which provides the minimum requirements designed to control the discharge of pollutants into the City’s municipal storm drain system and to assure that discharges comply with applicable provisions of the current NPDES Permit.

Andrew Quan-Assistant Engineer II at Valley Water confirmed the following – “Valley Water records indicate that 3 active wells are located on the project site. If the wells will continue to be used following permitted activity, they must be protected so that they do not become lost or damaged during completion of permitted activity. If the wells will not be used following permitted activity, they must be properly destroyed under a valid permit from Valley Water.” (Appendix H) Therefore, compliance with this requirement is a project condition of approval.

Furthermore, the project site is greater than 1-acre in area and is required to prepare a detailed project specific drainage plan, Water Quality Management Plan, and a Storm Water Pollution Prevention Plan (SWPPP) that will control storm water runoff and erosion, both during and after construction. The SWPPP will include project specific best management measures that are designed to control drainage and erosion. Therefore, compliance with all applicable codes will result in a less than significant impact.

- b) The GPEIR states – “No potentially significant impacts to hydrology and water quality associated with implementation of the Draft General Plan would be expected to occur. Existing programs and ordinances would be expected to

adequately mitigate potential impacts that may be associated with development under the Draft General Plan.”

The project site is improved and fully serviced, and the proposed project will connect to all existing utilities. Therefore, there will be no impact.

- c) The existing project site is improved with single-family residences, industrial buildings, and associated site and stormwater improvements. As stated in response a) above, the project is required to prepare a detailed project specific drainage plan, Water Quality Management Plan, and a Storm Water Pollution Prevention Plan (SWPPP) that will control storm water runoff and erosion, both during and after construction.

Furthermore, no stream or rivers exist near the site whose courses could be altered by alterations to the drainage pattern of the site. Therefore, the project will not alter the existing drainage pattern of the site or area which would result in erosion or siltation on- or off-site. Therefore, there will be a less than significant impact.

- d) According to the FEMA Flood Insurance Rate Map (FIRM No. 06085C0237H), the project site is located in flood zone X, described as an area of minimal flood hazard. . The project site is not located within a 100-year flood hazard area and none of the structures or buildings surrounding the site are within a 100-year flood hazard. The project is required to comply with the city stormwater management requirements cited in question a) above. Therefore, the project will have a less than significant impact.

- e)-h) As stated above, the project will be constructed in compliance with all applicable water quality control plans, including the National Pollutant Discharge Elimination System (NPDES), California Storm Water Best Management Practices Handbook and corresponding Best Management Practices (BMPs), applicable General Plan policies and municipal codes. Therefore, there will be a less than significant impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				X
b) Cause a significant				X

environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				
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- a) The project site fronts onto Dillon Avenue and Gilman Avenue to Lower Sacramento Road and will not divide any existing community. Surrounding land uses are mixed-use, commercial, and open space.

The project has been designed in full compliance with all applicable design guidelines and development standards to be compatible with and enhance the surrounding land uses and will include linkages to adjacent uses. Therefore, the project will not physically divide an established community and there will be no impact.

- b) The discretionary approvals required to build the 25 townhomes, 12 Junior Accessory Dwelling Units, and 10-unit apartment building project include:

- a) Planned Development Permit,
- b) Density Bonus Request,
- c) Vesting Tentative Subdivision Map, and
- d) Tree Removal Permit.

Approval of the discretionary approvals will enable the applicant to construct a well-designed multi-family residential project. Therefore, the project will not cause a significant environmental impact due to a conflict with a land use plan or policy but will fulfill several policies of the City of Campbell General Plan Land Use Element. Therefore, there will be no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and				X

the residents of the state?				
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

9) The GPEIR states the following specific to potential impacts to mineral resources – “There are no known mineral resources in the City of Campbell. Therefore, the proposed *Draft General Plan* would not have an effect on mineral resources.” Therefore, the proposed project would have no impact on mineral resources.

10) The Planning Area does not contain sites designated as a locally important mineral resource recovery site by the City’s General Plan. The Santa Clara County General Plan identifies important mineral resources within its Planning Area and outside of the City of Campbell. Implementation of the proposed General Plan would not result in the loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, the proposed project would have no impact on mineral resources.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIII. NOISE -- Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or			X	

groundborne noise levels?				
c) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

- a) Activities involved in construction would typically generate maximum noise levels ranging from 85 to 90 dB at a distance of 50 feet. Construction could result in periods of significant ambient noise level increases and the potential for annoyance. However, the General Plan includes policies and actions that are intended to reduce construction noise. Specifically, Policy CNR-10.1 and Strategy CNR-10.1a through CNR-10.1k would reduce construction noise. Implementation of these policies and actions will ensure noise impacts from construction are less than significant.

The following analysis and recommended mitigation measures were provided by the noise technical study completed by Salter Inc, February 3, 2023. (Appendix F)

Campbell General Plan

- Policy N-1.40 of the Campbell General Plan requires traffic-related noise be reduced to CNEL 45 dB indoors, which is consistent with the California Building Code requirement.
- Policy N-1.8 also has a CNEL 60 dB goal for outdoor noise in noise sensitive outdoor activity areas. Noise-sensitive outdoor activity areas are typically considered rear yard, common-use courtyard, etc. Section 21.16.070 E of the City of Campbell Municipal Code does not explicitly refer to private balconies as noise sensitive outdoor activity areas. As such, this requirement was applied to the 2,200 square foot common open space behind the building at 60 Dillon Avenue, but not at 2nd floor private balconies.

Existing Noise Environment

The noise environment at the site is influenced primarily by traffic on Campbell Avenue, Dillon Avenue, Gillman Avenue, and SR-17.

To quantify the existing noise environment, multiday measurements were conducted at the site between 6 and 11 October 22. Table 1 below shows the maximum measured CNEL, Leq(h)2, and a description of the approximate monitor locations.

Table 1: Measured Noise Levels

Monitor	Location	Date	Measured Noise Level
L-1	Dillon Ave Monitor 25 feet east of Dillon Ave centerline 385 feet south of Campbell Ave centerline 12 feet above grade	6 to 11 October 2022	CNEL 66 dB ³ L _{eq} (h) 66 dB
L-2	Gilman Ave Monitor 25 feet west of Gilman Ave centerline 190 feet south of Campbell Ave centerline, 12 feet above grade		CNEL 63 dB L _{eq} (h) 66 dB
S-1	Mid Site Spot Measurement 140 feet west of Gilman 230 feet south of Campbell Ave centerline 5/25 feet above grade	6 October 2022 10:45-11:00	CNEL 57/61 dB L _{eq} (h) 60/64 dB
S-2	Gilman Ave Spot Measurement 25 feet east of Dillon Ave centerline 385 feet south of Campbell Ave centerline 12 feet above grade	6 October 2022 11:15-11:30	CNEL 59 dB L _{eq} (h) 62 dB

To account for future traffic volumes, a 1 dB increase in environmental noise was added across the site for our estimates.

Interior Residential Noise

Exterior building assemblies will need to be sound-rated to reduce environmental noise to meet the California Building Code and Campbell General Plan criteria inside residences. Estimates suggest minimum STC 28 exterior windows and doors will be needed throughout the site, which is based on the following:

- Site Plan dated 13 January 2023, and floor plans and elevations dated 23 December 2022.
- Residences will have hard finish floors.
- The exterior wall assembly will be equivalent to a single stud assembly with a 3-coat stucco system, or comparable with a cementitious or wood siding finish.

Sound insulation (STC) ratings should be for the complete assembly, including glass and frame, and should be based on laboratory test reports of similar sized samples from an NVLAP accredited laboratory. Only tested sound-rated assemblies should be used. For reference, typical construction-grade windows generally achieve STC 28.

Since windows will need to be closed to meet the interior noise criteria, the mechanical design should meet ventilation requirements with windows in the closed position, and the ventilation system will need to be designed such that it does not compromise sound insulation of the building shell.

Outdoor Use Space

The project includes an approximately 2,200 square foot open space behind the building at 60 Dillon Avenue. Estimated noise levels for a standing receiver at the open space are below CNEL 60 dB, which falls within the City’s target.

Recommended Mitigation Measures

- Noise-1: Minimum STC 28 exterior windows and doors will be needed throughout the site.
 - Noise-2: The ventilation system will need to be designed such that it does not compromise sound insulation of the building shell.
- b) Policies of the General Plan require acoustical studies and any necessary vibration mitigation where development is proposed within proximity to an existing railroad. The proposed multi-family residential development is not located within proximity to an existing railroad.

Temporary construction noise will have less than significant noise and vibration impacts. The Campbell Municipal Code, section 21.16.070 prohibits unnecessary, excessive, and annoying sound levels from all sources, and limits the use of powered equipment to the hours of eight a.m. and seven p.m. Monday through Friday, and between the hours of nine a.m. and six p.m. Saturday, Sunday and nationally recognized holidays. Compliance with the noise regulations of the municipal code will result in less than significant noise and vibration impacts from construction activities. Therefore, impacts will be less than significant.

- c) The project site is not located within proximity of an airstrip or airport. The closest airstrip or airport is San Jose International, approximately 4.4-miles northeast of the project site. Therefore, there will be no impact.

XIV. Population / Housing -- Would the project result in:				
Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension				X

XIV. Population / Housing -- Would the project result in:				
Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
of roads or other infrastructure)?				
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

- a) In 2000, the Bay Area had 2.5 million households, an increase of approximately 9 percent over the 1990 count of 2.3 million households. Average household size in the Bay Area has increased only slightly, from 2.61 persons per household in 1990 to 2.69 persons per household in 2000. Santa Clara County had an average household size of 2.92 persons per household in 2000, an increase over the previous 10 years, when the average was 2.81 persons. (U.S. Census, 1990 and 2000. 1990 STFI A Database, Census 2000.)

Campbell's population increased by nearly 6 percent between 1990 and 2000, from 36,048 to 38,138. ABAG projected that the City's population would be 40,400 in 2000 and projects the City's population will rise to 44,900 by the year 2020. (U.S. Census, 1990 and 2000. 1990 STFI A Database, Census 2000; ABAG, 1999. Projections 2000: Forecasts for the San Francisco Bay Area. December.) However, the General Plan projects an increase in population to only 41,946. Since Campbell is largely built-out, most of this increase will result from redevelopment projects that include housing units, and possible increases in household size.

In 1990, the City's housing stock consisted of 15,860 units. In 2000, the total number of units rose to 16,286, an increase of 426 units (2.6%). The GPEIR Table IV.B-2: Regional Housing Needs 1999-2006 Allocation (RHNA) states that an average yearly need of 104 units is required to fulfill the RHNA requirements. The project proposes 25 townhomes, 12 Junior Accessory Dwelling Units, and a 10-unit apartment building, for a total of 47 dwelling units. Therefore, the proposed project will fulfill goals and objective of the General Plan and will have no impact.

- b) Two market rate single-family homes currently exist on the 1.15-acre project site. The project proposes a multi-family housing complex that will provide 47 residential units,

a net increase of 45 dwelling units. Because the project will result in a substantial overall increase in dwellings the project will not displace existing people or housing. Therefore, there will be no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XV. Public Services -- Would the project result in:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: 1. Fire protection? 2. Police protection? 3. Schools? 4. Parks? 5. Other public facilities?			X	

Fire Protection

The Santa Clara County Fire Department (SCCFD) maintains 15 fire stations, an administrative headquarters, a maintenance facility, and five other support facilities. The SCCFD offers fire resources and services that are divided into five major sections: Fire Suppression and Rescue, Fire Investigation, Emergency Medical Services, Special Operations Task Force / Haz-Mat, and Wildland Urban Interface.

The SCCFD operates two fire stations within the City of Campbell, as shown on Figure 3.13-1. Both stations are City-owned facilities.

- A. Campbell Fire Station, at 123 Union Avenue, Campbell.
- B. Sunnyoaks Fire Station / McCormack Training Center, at 485 West Sunnyoaks Avenue, Campbell.

Daily emergency response staffing consists of 70 career fire personnel on a 24-hour shift assignment, operating 19 pieces of first-line apparatus, plus three 3 Battalion Chief command vehicles, operating from 15 fire stations.

The project site is not located within, or within proximity to, a Very High Fire Hazard Severity Zone (VHFHSZ). Furthermore, the project plans will be reviewed for compliance with all applicable fire codes, and the site will be constructed in compliance with applicable fire district development standards and design guidelines. Therefore, there will be no impact.

Police Protection

The Campbell Police Department (CPD) headquarters is located at 70 North First Street in Campbell. The Department has 70 full-time employees and is comprised of four divisions: Administrative, Field Services, Special Enforcement, and Support Services.

The Administrative Services Division consists of sworn and professional employees whose purpose is to provide internal support and supervision to each division within the organization, and is comprised of the Chief, two Captains, Support Services Manager, Executive Assistant, Communications & Public Engagement Coordinator, and a halftime Training Coordinator.

The Field Services Division (FSD) is managed by a Captain, four Sergeants, four Agents, 20 Police Officers, and two Community Service Officers, and is primarily responsible for responding to calls for service in the City of Campbell. Officers handle approximately 35,000 calls for service, 5,500 crime reports, and 1,800 arrests each year.

The Special Enforcement Division (SED) includes the Investigative Services Unit and the Traffic Unit and is comprised of one Sergeant, one Agent, one Robbery/Homicide Investigator, one Sexual Assault Investigator, one Property/Financial Crimes Investigator, two Arson/General Crimes Investigators, and two Regional Task Force Investigators.

The Support Services Division is comprised of the Communications (Dispatch) Unit, the Records Unit, and Property & Evidence Unit, and is managed by the Support Services Division Manager.

As stated in the Population / Housing section above, GPEIR Table IV.B-2: Regional Housing Needs 1999-2006 Allocation (RHNA) states that an average yearly need of 104 units is required to fulfill the RHNA requirements. The proposed multi-family residential project will include 47 new residential units, which will not result in a significant increase in demand for police services. Therefore, there will be no impact.

Schools

The City of Campbell is served by the Campbell Union School District (Pre K-5 and K-5 elementary schools and 5-8 middle schools), the Campbell Union High School District (9-12 high schools), the Moreland School District (MSD), and the Cambrian School District (K through middle school). The MSD operates four public schools which serve the City of Campbell, all of which are located in the City of San Jose: George C. Payne Elementary School, Baker Elementary School, Latimer School, and Moreland Middle School. Two schools within the Cambrian School District serve Campbell students east of Highway 17: Bagby Elementary School and Farnham Charter School. The CUSD has an annual operating budget of \$1.06 million.

Parks, and Other public facilities

Parks, trails, and recreational facilities in the City of Campbell are managed and maintained by the Recreation and Community Services Department and the Public Works Department. With a City population of approximately 43,000 and 82.6 acres of parkland, the City currently provides just under 2.0 acres of parkland for every 1,000 people, which is below the City's goal of 3.0 acres for every 1,000 people.

The project site currently supports single family residences, industrial buildings, and associated improvements. The proposed 47-unit multi-family project will include a Tract Map which will include conditions of approval for parkland dedication and impact fees for public services. Therefore, there will be a less than significant impact on public services.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. Recreation -- Would the project result in:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. Recreation -- Would the project result in:				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

a)-b) The project site currently supports single family residences, industrial buildings, and associated improvements. The proposed 47-unit multi-family project will include a Tract Map which will include conditions of approval for parkland dedication and impact fees for public services. Furthermore, 47 new residential units are not anticipated to have a significant impact. Therefore, there will be a less than significant impact on Recreation.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVII. Transportation -- Would the project result in:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				X
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	

Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVII. Transportation -- Would the project result in:				
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?				X

I. -b) The General Plan Transportation Element includes the following applicable goals.

- Goal LUT-11: A physically connected, efficient community with safe access and linkages throughout the City for a variety of transportation modes and users.
- Goal LUT-2: Balanced and functional transportation system.

Transit

Transit service in Campbell and surrounding communities is provided by the Santa Clara Valley Transportation Authority (VTA). VTA provides express and local bus and light rail service. There are three frequent bus routes (routes 26, 60, and 61), three local bus routes (routes 27, 37, and 56), one express bus route (Express 101), and one light rail transit route (Green Line) serving Campbell.

Bicycle

The City of Campbell has a bicycle facilities network that provides dedicated and shared street space for bicycling. The four classes of bikeways in Campbell are described in the Santa Clara Countywide Bike Plan (2018). These descriptions are based on California Department of Transportation (Caltrans) classifications of bikeways from California Assembly Bill 1193 and the Highway Design Manual (Chapter 1000: Bikeway Planning and Design). Each bikeway is intended to provide bicyclists with enhanced riding conditions.

Trip Generation

Trip generation for the Project was determined based on average rates from Institute of Transportation Engineer's (ITE) publication, Trip Generation, 11th Edition. The following ITE Land Use Codes were used to estimate the project trip generation.

- a) Single-Family Attached Housing (215)
- b) Multifamily Housing (Low-Rise) (220)

The proposed project will generate 231 daily trips, with 17 peak hour trips in the AM and 21 peak hour trips in the PM.

Project Trip Generation¹
Robson Homes Development

Project Land Use	ITE Land Use (Land Use Code) ²	Units ²	Daily ²	AM Peak Hour ²			PM Peak Hour ²		
				In	Out	Total	In	Out	Total
Townhome	Single-Family Attached Housing (215)	25 DUs	180	3	9	12	8	6	14
Apartment	Multifamily Housing (Low-Rise) (220) ³	10 DUs	47	1	3	4	4	2	6
JADU ⁴	Single-Family Attached Housing (215), adjusted ⁵	12 Dus	4	0	1	1	1	0	1
Total		47 DUs	231	4	13	17	13	8	21

¹ Source: Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition

² DU = Dwelling Unit, Daily Rate = Vehicles per Day (vpd), AM/PM Peak Hour Rates = Vehicles per Hour (vph)

³ Close to Rail Transit

⁴ JADU = Junior Accessory Dwelling Unit, a self-contained unit within a Townhome unit, with separate access.

⁵ Since there are no ITE rates for JADUs, but they are related to the townhomes, the Single-Family Attached Housing rates were used with a factor of 0.05 applied, representing the relative floor area of a JADU compared to the total floor area of a Townhome. Since the result is that the AM/PM PeakHours each have a total of less than 1 vph, the totals were rounded up to 1 vph.

Trip Generation Rates^{1,6}

Single-Family Attached Housing (215) - Based on Average Rates

Daily: T = 7.2(X) 50% entering, 50% exiting

AM Peak Hour: T = 0.48(X) 25% entering, 75% exiting

PM Peak Hour: T = 0.57(X) 59% entering, 41% exiting

Multifamily Housing (Low-Rise) (220), Close to Rail - Based on Average Rates

Daily: T = 4.72(X) 50% entering, 50% exiting

AM Peak Hour: T = 0.38(X) 29% entering, 71% exiting

PM Peak Hour: T = 0.61(X) 60% entering, 40% exiting

⁶ T = Trip Ends, X = Number of DUs

For purposes of CEQA review, impacts resulting from new trips associated with a project are considered a significant impact unless the total projected vehicle miles traveled (VMT) is reduced by at least 15 percent below similar projects existing in the agency. The City of Campbell has a VMT Policy to Comply with California Senate Bill 743 (SB 743) which states the following – “Projects shall be presumed to have a less-than-significant transportation impact if they meet any of the following screening criteria:

- Transit Screening: All land-use projects located within ½-mile of a light-rail station shall be presumed to have a less-than-significant transportation impact on VMT presuming these projects are consistent with the General Plan.”

The project site is located 0.10 miles from the Downtown Campbell LRT Station and therefore meets the City’s VMT screening criteria. Therefore, impacts associated with VMT will be less than significant impacts.

c)-d) A complete analysis of the design and layout of the proposed project will be prepared and processed through the City’s Planned Development Permit and Vesting Tentative Subdivision Map processes and will be required to comply with all applicable design and development standards. Therefore, the project will not substantially increase hazards due to a geometric design feature or result in inadequate emergency access. Therefore, there will be no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIX. Tribal Cultural Resources -- Would the project result in:				
<p>a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</p> <p>i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or</p> <p>ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public</p>				<p>X</p> <p>X</p> <p>X</p>

Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				
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a-i) As stated in detail in the Cultural Resources section of this MND, the project site was previously excavated and improved with single-family residences, industrial buildings, and associated improvements, and the project site does not include any of the City’s Historic Properties or potentially eligible historic properties. Therefore, the project will have no impact on historical resources as defined in Public Resources Code section 5020.1(k).

a-ii) California Assembly Bill (AB 52) requires public agencies to consult with tribes during the CEQA process. The City of Campbell Native American Heritage Commission Tribal Consultation List for Santa Clara County was updated on 10/20/2023 and provides the contact information for 145 tribes for the purposes of tribal consultation in compliance with AB 52. Tribal consultation with the 14 tribes was initiated on 11/20/23 (Appendix G), and as of the date of this MND not one request for tribal consultation was received by the lead agency.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XX. Utilities and Service Systems -- Would the project result in:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				X

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XX. Utilities and Service Systems -- Would the project result in:				
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X

a)-e) The increase in demand for utilities from development of the 47-unit multi-family housing project will be de-minimis. The project site will connect to existing utilities for water, sewer, electric power, natural gas, telecommunications, and storm water drainage services. As stated on the project plans, all services will be installed in

compliance with all applicable codes, specifications, and standards. The project will also be required to pay all applicable impact fees to the City of Campbell associated with the connections to services and utilities. Therefore, there will be no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XXI. Wildfire -- Would the project result in:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XXI. Wildfire -- Would the project result in:				
d) Expose people or structures to significant, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

a)-c) A search of the fire hazard severity zones at CalFire confirmed that the project site is not located within, or within proximity to, a Very High Fire Hazard Severity Zone (VHFHSZ). The closest VHFHSZ is located on the eastern edge of the Fremont Open Space Preserve area, approximately 7-miles west of the project site. The project site is located in a Local Responsibility Area (LRA), and the site and structures will be constructed in compliance with applicable fire codes and standards. Therefore, there will be no impact.

d) According to the FEMA Flood Insurance Rate Map (FIRM), the project site is located in flood zone X, described as 0.2% Annual Chance Flood Hazard. The project site is not located within a 100-year flood hazard area and none of the structures or buildings surrounding the site are within a 100-year flood hazard. The project is required to comply with the city stormwater management requirements. Therefore, the project will not impede or redirect flood flows and there will be no impact.

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XXII. Mandatory Findings of Significance -- Would the project result in:				
a) Does the project have the potential to substantially degrade the quality of the				X

Issues:	Summary of Impacts:			
	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XXII. Mandatory Findings of Significance -- Would the project result in:				
environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

- a) The 1.15-acre project site is in an urbanized area and is currently improved with single-family residences, industrial buildings, and associated site improvements. The

site is not on or near any migratory wildlife corridors nor would construction impede access to any native wildlife nursery sites since there are none near the site. The site is not within a habitat conservation plan area and does not contain any natural drainage courses or wetlands. The project site is not near any sensitive natural community identified in local or regional plans, policies, and regulations or by any state or by the California Department of Fish and Game or US Fish and Wildlife Service. Therefore, the project will have no impact on habitats or wetlands or interfere with migratory fish or wildlife.

The project site was previously excavated and improved with single-family residences, industrial buildings, and associated improvements, and the project site does not include any of the City's Historic Properties or potentially eligible historic properties. Therefore, the project will not impact a historical resource as defined in §15064.5.

- b) None of the standards for mandatory findings of significance are met. With regard to cumulative impacts, development of the multi-family housing project would not result in any significant environmental impacts. Likewise, the project would not result in any incremental effects that would be cumulatively considerable when viewed in combination with past and probably future projects. Thus, the cumulative impacts of this project are less than significant.
- c) The project will require mitigation measures to reduce impacts to a less than significant level. Of those mitigation measures, eight of them are recommended mitigation measures and are not required to mitigate a known environmental impact. Therefore, the project will have no impact on human beings, either directly or indirectly.

g) Mitigation Monitoring or Reporting Program

Section 21081.6 of the Public Resources Code and Section 15097 of the State CEQA Guidelines require a lead agency that approves or carries out a project, where a CEQA document has identified significant environmental effects, to adopt a “reporting or monitoring program for the changes to the project which it has adopted or made a condition of a project approval in order to mitigate or avoid significant effects on the environment.”

The MMRP contained herein is intended to satisfy the requirements of CEQA as they relate to the MND prepared for the proposed project. This MMRP is intended to be used by City of Campbell staff and mitigation monitoring personnel to ensure compliance with mitigation measures during project implementation. Mitigation measures identified in this MMRP were developed in the Draft MND.

Impact No.	Impact	Mitigation Measure	Responsibility	Timing	Verify
III. Air Quality					
c)	Expose sensitive receptors to substantial pollutant concentrations	AQ-1: BAAQMD Basic Control Measures: 1) Water all active construction areas at least twice daily. 2) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard. 3) Sweep all paved access roads, parking areas and staging areas at construction sites as required to prevent soil material from being carried onto adjacent streets. 4) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph). 5) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). 6) Clear signage shall be provided for construction workers at all access points.	City and contractors	Prior to and during construction	City

		<p>7) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.</p> <p>8) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</p> <p>9) All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for particulate matter (PM10 and PM2.5), if feasible, otherwise, use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 30 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment.</p> <p>10) Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 30 percent or greater.</p> <p>11) Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air</p>			
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		District's phone number shall also be visible to ensure compliance with applicable regulations.			
V. Cultural Resources					
c)	Disturb any human remains, including those interred outside of formal cemeteries.	CULT-1: Pursuant to the California Health and Safety Code Section 7050.5, and the CEQA Guidelines Section 15064.5, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the coroner determines the remains to be Native American or has reason to believe that they are Native American, the coroner shall contact by telephone within 24-hours of the Native American Heritage Commission to determine the Most Likely Descendent (MLD).	Contractors	During construction	City
VII. Geology and Soils					
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	The Geotechnical Study completed on June 28, 2023, by Geo-Logic Associates includes the following Geotechnical Recommendations 5.1 through 5.6 which are recommended mitigation measures. <ul style="list-style-type: none"> ▪ 5.1 – Earthwork ▪ 5.2 – Foundations ▪ 5.3 – Concreate Slabs on Grade ▪ 5.4 - Retaining Walls ▪ 5.5 – Vehicle Pavements ▪ 5.6 - Surface and Subsurface Drainage 	City and contractors	During plan check and construction	City
VIII. Greenhouse Gas Emissions					
a)	Generate greenhouse gas emissions, either	GHG-1: Implement the following construction best practices:			

	<p>directly or indirectly, that may have a significant impact on the environment?</p>	<ol style="list-style-type: none"> 1) Use zero-emission and hybrid-powered equipment if reasonably available, particularly if emissions are occurring near sensitive receptors or located within a BAAQMD-designated Community Air Risk Evaluation (CARE) area or Assembly Bill 617 community. 2) Require all diesel-fueled off-road construction equipment be equipped with EPA Tier 4 Final compliant engines or better as a condition of contract. 3) 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 the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure. 4) Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day. 5) Require all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation. 6) Where grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as 			
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		<p>saws, drills and compressors, and using electric tools whenever feasible.</p> <p>7) Where grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.</p> <p>8) Reduce electricity use in the construction office by using LED bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.</p> <p>9) Recycle or salvage nonhazardous construction and demolition debris, with a goal of recycling at least 15% more by weight than the diversion requirement in Title 24.</p> <p>10) Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials and based on volume for roadway, parking lot, sidewalk and curb materials).</p> <p>11) Use low-carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix.</p> <p>12) Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.</p> <p>13) Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.</p>			
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IX. Hazardous Materials					
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	HAZARD-1: Applicant shall submit a proposal for no further action (NFA) and obtain a NFA determination from the RWQCB.	Applicant	Prior to grading permit issuance.	City
XIII. Noise					
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	<ul style="list-style-type: none"> ▪ NOISE-1: Minimum STC 28 exterior windows and doors will be needed throughout the site. ▪ NOISE-2: The ventilation system will need to be designed such that it does not compromise sound insulation of the building shell. 	City and contractors	During plan check	City

APPENDICES

- A. Construction Health Risk Assessment
- B. Tree Inventory
- C. Geotechnical Report
- D. CalEEMod Outputs
- E. RWQCB CCR/CAP
- F. Noise Study
- G. AB 52 Consultation
- H. Draft MND Comments

***57-101 GILMAN AVENUE & 60
DILLON AVENUE
CONSTRUCTION HEALTH
RISK ASSESSMENT***

Campbell, California

February 8, 2023

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I&R Project#: 22-168

Introduction

The purpose of this report is to address the potential health risk impacts associated with the construction of a proposed residential development located at 57-101 Gilman Avenue and 60 Dillon Avenue in Campbell, California. The air quality impacts from this project would be associated with demolition of the existing land uses and construction of the residential buildings. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential health risk impacts from existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).¹

Project Description

The existing project site comprises 1.14-acres across the parcels of 57-101 Gilman Avenue and 60 Dillon Avenue. These parcels are occupied by a mixture of single-family residences and industrial buildings. The project proposes to demolish the existing uses of the site to construct 29 dwelling units. The 29 dwelling units would be made up of 10 duplexes, three 5-plexes, and one 4-plex. Construction is expected to begin in April of 2023 to be completed by December of 2024.

Setting

The project is located 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. The Bay 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}).

Air Pollutants of Concern

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

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

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

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 See *Attachment 1* for a detailed description of the health risk modeling methodology used in this assessment.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, 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 infants and small children. The closest sensitive receptors to the project site are the residents in the multi-family housing adjacent to the southwest of the project site. There is also single-family housing located to the north. Nelly's Childcare and Preschool is located southwest of the project site. Additional sensitive receptors are located at further distances from the site. The project would introduce new sensitive receptors (i.e., residents) to the area.

Bay Area Air Quality Management District (BAAQMD)

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

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.

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 and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.³ The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco.

Additionally, overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.⁴ The project site is located in a CARE area but isn't within an overburdened area as identified by CalEnviroScreen as the Project site is scored at the 21st percentile.⁵

The BAAQMD California Environmental Quality Act (CEQA) *Air Quality Guidelines*⁶ were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed health risk modeling methodology.

³ See BAAQMD: <https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program> , accessed 2/18/2021.

⁴ 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.

⁵ OEHHA, CalEnviroScreen 4.0 Indicator Maps <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>

⁶ Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.

Draft Envision Campbell 2040 General Plan Update

The Draft Envision Campbell 2040 General Plan Update⁷ includes goals, policies, and actions to improve air quality and GHG emissions and meet the State and National ambient air quality standards and GHG goals. The following goals, policies, and actions are applicable to the project:

Energy Conservation

Goal OSC-8 Conserve energy and other natural resources through consumption reduction programs and the maximum use of renewable resources.

Policy OSC-8.5 Continue to participate in Silicon Valley Clean Energy (SVCE) whereby city-owned facilities, parks, and streetlights will run on 100% renewable energy sources like wind and solar, and motivate and encourage Campbell residents and businesses to participate in SVCE to reduce greenhouse gas emissions and support statewide alternative energy use.

Air Quality

Goal OSC-10 Improve air quality in Campbell and the region through reductions in air pollutants and greenhouse gas (GHG) emissions in accordance with the direction provided in the City's Climate Action Plan.

Policy OSC-10.1 Improve air quality through continuing to require a development pattern that focuses growth in and around existing urbanized areas, locates new housing near places of employment, encourages alternative modes of transportation, supports efficient parking strategies, reduces vehicle miles traveled, and requires projects to mitigate significant air quality impacts.

Policy OSC-10.2 Align the City's local GHG reduction targets with the statewide GHG reduction targets of Assembly Bill 32, and align the City's GHG reduction goal with the statewide GHG reduction goal of Executive Order S-03-05.

Policy OSC-10.4 Require projects to adhere to the requirements of the Bay Area Air Quality Management District (BAAQMD), including standards related to fireplaces, wood stoves, heaters, dust control, and abatement measures.

Policy OSC-10.5 Reduce adverse air quality impacts of municipal operations.

Policy OSC-10.6 Use the City's development review process and the California Environmental Quality Act (CEQA) to evaluate and mitigate the local and cumulative effects of new development on air quality.

⁷ City of Campbell, *Envision Campbell General Plan Update, General Plan 2040 Council Review Draft*, August 2020. Web: https://static1.squarespace.com/static/5727860527d4bd23efd96db/t/5f88bfe6e0a5a0661d7b2621/1602797595489/CampbellGPU_Draft--8-4-20_reduced+size.pdf

- Policy OSC-10.7 Coordinate with the California Air Resources Board (CARB) and the BAAQMD to properly measure air quality at emission sources and enforce the standards of the Clean Air Act.
- Policy OSC-10.8 Comply with regional, state, and federal standards and programs for control of all airborne pollutants and noxious odors, regardless of source.
- Policy OSC-10.9 Coordinate with Santa Clara County and nearby cities to implement regional GHG reduction plans and consolidate efforts to reduce GHGs throughout the county.

Actions in Support of Goal OSC-10

- Action OSC-10a Review all new industrial and commercial development projects for potential air quality impacts to residences and other sensitive receptors. The City shall ensure that mitigation measures and best management practices are implemented to reduce significant emissions of criteria pollutants. Adopt an ordinance codifying these requirements into the Campbell Municipal Code.
- Action OSC-10b Review development, infrastructure, and planning projects for consistency with BAAQMD requirements during the CEQA review process. Require project applicants to prepare air quality analyses to address BAAQMD and General Plan requirements, which includes analysis and identification of:
- Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions;
 - Potential exposure of sensitive receptors to toxic air contaminants;
 - Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions; and
 - Mitigation measures to reduce significant impacts to less than significant or the maximum extent feasible where impacts cannot be mitigated to less than significant.
- Action OSC-10c Implement the City’s Climate Action Plan and review and update the plan as necessary to achieve the GHG reduction targets specified in the Plan.
- Action OSC-10f Continue implementation of the City’s Municipal Code Chapter 18.70, Woodburning Appliances, in order to improve and maintain air quality conditions in the City and enhance the health and quality of life of its citizens.
- Action OSC-10g Require adequate buffering or other mitigation of all potential air pollutant sources, including commercial and industrial emissions.
- Action OSC-10h Assist the BAAQMD and Santa Clara County in their efforts to achieve compliance with existing air quality regulations.

Action OSC-10i Assess the adequacy of environmental documents for projects proposed in the City utilizing the thresholds established in the BAAQMD guidelines.

Significance Thresholds

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

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	
	Average Daily Emissions (lbs./day)	
ROG	54	
NO _x	54	
PM ₁₀	82 (Exhaust)	
PM _{2.5}	54 (Exhaust)	
CO	Not Applicable	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	
Health Risks and Hazards	Single Sources Within 1,000-foot Zone of Influence	Combined Sources (Cumulative from all sources within 1000-foot zone of influence)
Excess Cancer Risk	10 per one million	100 per one million
Hazard Index	1.0	10.0
Incremental annual PM _{2.5}	0.3 µg/m ³	0.8 µg/m ³
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.		

Construction Health Risk Impacts and Mitigation Measures

Project impacts related to increased health risk can occur either by generating emissions of TACs and air pollutants and by introducing a new sensitive receptor in proximity to an existing source of TACs. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors.

Additionally, the project could introduce new residents that are sensitive receptors, who would be exposed to existing sources of TACs and localized air pollutants in the vicinity of the project. Therefore, the impact of the existing sources of TAC upon the existing sensitive receptors and new incoming sensitive receptors was assessed.

Health risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual PM_{2.5} concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary health risk impact issues associated with construction emissions are cancer risk and exposure to PM_{2.5}. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and PM_{2.5}.⁸ This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated. The methodology for computing health risks impacts is contained in *Attachment 1*.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2022.1.1.5 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 2*.

CalEEMod Modeling

Land Use Inputs

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

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Condo/Townhouse	29	Dwelling Unit	73,630	1.14

⁸ DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Construction Inputs

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

Within each of the CalEEMod construction phases, the quantity of equipment to be used along with the average hours per day and total number of workdays were provided by the project applicant. The construction schedule assumed that the earliest possible start date would be April 2023 and would be completed over a period of approximately 20 months, or 438 construction workdays.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the concrete and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for worker and vendor trips were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and soil import/export were estimated by CalEEMod using the demolition and grading volumes provided.⁹ The number of concrete trips were provided by the project applicant while the asphalt trips were estimated based on the volume of asphalt provided by the applicant.

Summary of Computed Construction Period Emissions

Average daily emissions were annualized for each year of construction by dividing the annual construction emissions by the number of active construction workdays that year. Table 4 shows the unmitigated annualized average daily construction emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust during construction. As indicated in Table 3, predicted unmitigated annualized project construction emissions would not exceed the BAAQMD significance thresholds during any year of construction.

⁹ CalEEMod assumes each truck can carry 10 tons per load or 10 cubic yards of material.

Table 3. Construction Period Emissions

Year	ROG	NOx	PM ₁₀ Exhaust	PM _{2.5} Exhaust
<i>Construction Emissions (Tons)</i>				
2023	0.06	2.31	0.04	0.03
2024	0.64	4.98	0.08	0.06
<i>Average Daily Construction Emissions (pounds/day)</i>				
2023 (195 construction workdays)	0.62	23.69	1.07	0.31
2024 (243 construction workdays)	5.27	40.99	0.55	0.49
<i>BAAQMD Thresholds (pounds per day)</i>	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM₁₀ and PM_{2.5}. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices.*

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

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

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne

toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

Mitigation Measure AQ-1 represents standard mitigation measures that would achieve greater than a 50 percent reduction in on-site fugitive PM_{2.5} emissions. The measures above are consistent with BAAQMD-recommended "best management practices" for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Community Health Risk from Project Construction

A project can have health risk impacts by either generating TAC emissions and/or by introducing a new sensitive receptor in proximity to an existing source of TACs. A community health risk assessment was prepared to address project construction impacts on the existing off-site sensitive receptors near the project site (CEQA Health Risk Assessment) and impacts from existing sources of TACs on the new project residents (Non-CEQA Health Risk Assessment).

Project construction activity is temporary but would generate emissions of DPM from equipment and trucks and generate dust that could affect nearby sensitive receptors. Additionally, the project would introduce new residents (i.e., sensitive receptors) who would be exposed to existing sources of TACs in the vicinity of the project. Therefore, the impact of existing sources of TAC upon the new incoming sensitive receptors was assessed.

Construction Health Risk Impacts Analysis

Construction Period Emissions

The CalEEMod model emissions provided total annual PM₁₀ exhaust emissions (assumed to be DPM) for the off-road construction equipment and exhaust emission rates from on-road vehicles. The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Total uncontrolled DPM emissions from onsite construction activities was estimated to be 0.03 tons (66 pounds). Uncontrolled fugitive dust (PM_{2.5}) emissions were calculated by CalEEMod as 0.01 tons (26 pounds) for the project.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and PM_{2.5} concentrations at sensitive receptors (i.e., residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.^{10,11} Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive PM_{2.5} dust emissions.

Construction Sources

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and PM_{2.5} concentrations at sensitive receptors (residences and schools) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.¹²

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area sources.¹³ The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

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

¹⁰ BAAQMD, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May. Web: <https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en>

¹¹ BAAQMD, 2020, *BAAQMD Health Risk Assessment Modeling Protocol*. December. Web: https://www.baaqmd.gov/~media/files/ab617-community-health/facility-risk-reduction/documents/baaqmd_hra_modeling_protocol-pdf.pdf?la=en

¹² Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May.

¹³ California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: <https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm>

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from the San Jose Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. to 4:00 p.m. when the majority of construction activity is expected to occur. Annual DPM and PM_{2.5} concentrations from construction activities during the 2023 and 2024 period were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) were used to represent the breathing height of residences on the first and second floors in nearby single and multi-family residences.¹⁴ A receptor height of 3 feet (1 meter) was used to represent the breathing height of children at Nelly's Childcare and Preschool.

Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impact



¹⁴ Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: <https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en>

Summary of Construction Health Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the OEHHA guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1*). Non-cancer health hazards (HI) and maximum PM_{2.5} concentrations were also calculated and identified. Recommended age-sensitivity factors that reflect the greater sensitivity of infants and small children to cancer causing TACs were used in calculating increased cancer risks. Third-trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period, while infant and child exposures were assumed to occur at the daycare.

The maximum modeled annual PM_{2.5} concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation reference exposure level of 5 µg/m³.

The maximum modeled annual DPM and PM_{2.5} concentrations were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction MEI was located on the second floor of an adjacent home south of the project site. After mitigation was applied, the annual PM_{2.5} concentration MEI moved to the first floor at the same receptor. The cancer risk MEI did not move after mitigation was applied. Table 4 summarizes the maximum cancer risks, PM_{2.5} concentrations, and HI for project's construction activities at the MEIs. *Attachment 3* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Additionally, modeling was conducted to predict the cancer risks, non-cancer health hazards, and maximum PM_{2.5} concentrations associated with construction activities at the nearby daycare. The maximum increased cancer risks were adjusted using infant and child exposure parameters. The maximum cancer risk, PM_{2.5} concentrations and HIs at Nelly's Childcare and Preschool would not exceed their respective BAAQMD single-source significance thresholds, as shown in Table 4.

As shown in Table 4, the maximum cancer risk exceeds its respective BAAQMD single-source threshold due to project construction. However, with the implementation of *Mitigation Measure AQ-1 and AQ-2*, the maximum cancer risk would no longer exceed its single-source threshold. The annual PM_{2.5} concentration and HI from uncontrolled (i.e., unmitigated) construction activities at the MEI location would not exceed the BAAQMD single-source thresholds.

Table 4. Construction Risk Impacts at the Off-site MEI

Source		Cancer Risk (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index
<i>Project Impact</i>				
Project Construction	Unmitigated	12.07 (infant)	0.05	0.01
	Mitigated	2.01 (infant)	0.03	<0.01
<i>BAAQMD Single-Source Threshold</i>		<i>10</i>	<i>0.3</i>	<i>1.0</i>
<i>Exceed Threshold?</i>	Unmitigated	<i>Yes</i>	<i>No</i>	<i>No</i>
	Mitigated	<i>No</i>	<i>No</i>	<i>No</i>
<i>Nelly's Childcare and Preschool</i>				
Project Construction	Unmitigated	0.32 (child)	<0.01	<0.01
<i>BAAQMD Single-Source Threshold</i>		<i>10</i>	<i>0.3</i>	<i>1.0</i>
<i>Exceed Threshold?</i>	Unmitigated	<i>No</i>	<i>No</i>	<i>No</i>

Mitigation Measure AQ-2: Use construction equipment that has low diesel particulate matter exhaust to minimize emissions and limit use of diesel-powered stationary equipment.

Implement a feasible plan to reduce DPM emissions by 30 percent such that increased cancer risk and annual PM_{2.5} concentrations from construction would be reduced below TAC significance levels as follows:

1. All construction equipment larger than 25 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for particulate matter (PM₁₀ and PM_{2.5}), if feasible, otherwise,
 - a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 30 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination).
2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 30 percent or greater. Elements of the plan could include a combination of some of the following measures:
 - Implementation of No. 1 above to use Tier 4 engines or alternatively fueled equipment,
 - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
 - Use of electrically-powered equipment,
 - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
 - Change in construction build-out plans to lengthen phases, and
 - Implementation of different building techniques that result in less diesel equipment usage.

Such a construction operations plan would be subject to review by an air quality expert and approved by the City prior to construction.

Effectiveness of Mitigation Measure AQ-1 and AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 Interim engine standards and BAAQMD best management practices for construction were included. With these measures implemented, the project's construction cancer risk impact, assuming infant exposure, would be reduced by 84 percent to 2.01 per million at the residential MEI. A plan that reduces DPM emissions by 30 percent would reduce cancer risk to below the single-source threshold. As a result, the project's construction cancer risk would be reduced below the BAAQMD single-source threshold.

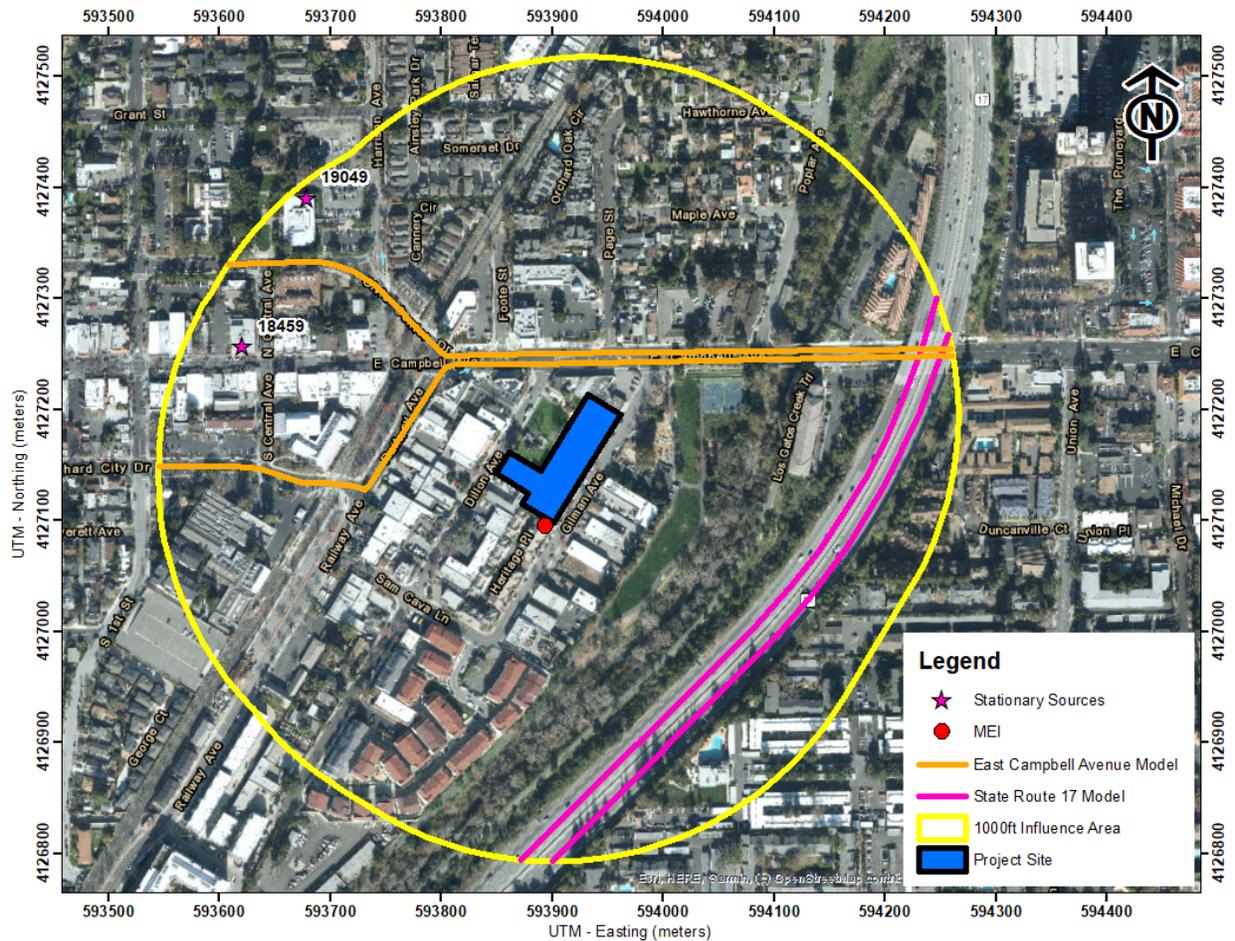
Cumulative Health Risks of all TAC Sources at the Off-Site Project MEI

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

A review of the project area using traffic data collected by Santa Clara County¹⁵ indicated that two roadways within the influence area, State Route 17 and East Campbell Avenue, would have traffic exceeding 10,000 vehicles per day. A review of BAAQMD's *Permitted Stationary Sources 2020* geographic information systems (GIS) map tool identified two stationary sources with the potential to affect the project site and MEI. Figure 2 shows the project area included within the influence area. Details of the modeling and health risk calculations are included in *Attachment 4*.

¹⁵ Santa Clara County Traffic Counts, web:
<https://www.arcgis.com/apps/mapviewer/index.html?layers=709ef12897bc42aa8e3d87f4505641c0>

Figure 2. Project Site, Nearby Existing TAC Sources, and 1,000-foot Influence Area



Highways – State Route 17

The project MEI is approximately 600 feet northwest of State Route 17. A refined analysis of the impacts of TACs and PM_{2.5} to the MEI receptor is necessary to evaluate potential cancer risks and PM_{2.5} concentrations from State Route 17. A review of the traffic information reported by Caltrans indicates that State Route 17 traffic includes 122,000 vehicles per day (based on an annual average)¹⁶ that are about 3.1 percent trucks, of which 1.6 percent are considered diesel heavy duty trucks and 1.5 percent are medium duty trucks.¹⁷

Local Roadways – East Campbell Avenue

A refined analysis of potential health impacts from vehicle traffic on East Campbell Avenue was conducted. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on the roadway near the project site and using an atmospheric dispersion model to predict exposure to TACs. The associated cancer risks are then computed based on the modeled

¹⁶ Caltrans. 2022. *2020 Traffic Volumes California State Highways*.

¹⁷ Caltrans. 2022. *2020 Annual Average Daily Truck Traffic on the California State Highway System*.

exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Traffic Emissions Modeling

This analysis involved the development of DPM, organic TACs, and PM_{2.5} emissions for traffic on State Route 17 and East Campbell Avenue using the Caltrans version of the CARB EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM.¹⁸ Emission processes modeled include running exhaust for DPM, PM_{2.5} and total organic compounds (TOG), running evaporative losses for TOG, and tire and brake wear and fugitive road dust for PM_{2.5}. All PM_{2.5} emissions from all vehicles were used, rather than just the PM_{2.5} fraction from diesel powered vehicles, because all vehicle types (i.e., gasoline and diesel powered) produce PM_{2.5}. Additionally, PM_{2.5} emissions from vehicle tire and brake wear from re-entrained roadway dust were included in these emissions. DPM emissions are projected to decrease in the future and are reflected in the CT-EMFAC2017 emissions data. Inputs to the model include region (Santa Clara County), type of road (freeway and major/collector), traffic mix assigned by CT-EMFAC2017 for the county, adjusted for the local truck mix on State Route 17 and truck percentage for non-state highways in Santa Clara County (3.51 percent)¹⁹ for the East Campbell Avenue, year of analysis (2023 – construction start year), and season (annual).

To estimate TAC and PM_{2.5} emissions over the 30-year exposure period used for calculating the increased cancer risks for sensitive receptors at the MEI, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2023 (construction start year). Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CT-EMFAC2017. Year 2023 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated since, as discussed above, overall vehicle emissions, and in particular diesel truck emissions, will decrease in the future.

The ADT volumes and truck percentages were based on Caltrans data for State Route 17. Traffic volumes were assumed to increase 1 percent per year for a total of 125,660 vehicles. Hourly traffic distributions specific to these segments of State Route 17 were obtained from Caltrans Performance Measurement System (PeMS). PeMS data is collected in real-time from nearly 40,000 individual detectors spanning the freeway system across all major metropolitan areas of California.²⁰ The fraction of traffic volume each hour was calculated and applied to the 2023 average daily traffic volumes estimate to estimate hourly traffic emission rates for State Route 17.

¹⁸ The CT-EMFAC2017 version was used in the analysis because Caltrans has not yet release a CT-EMFAC version with the updated EMFAC2021 emissions that would provide TAC emission rates.

¹⁹ Bay Area Air Quality Management District, 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May. Web: <https://www.baaqmd.gov/~media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en>

²⁰ <https://dot.ca.gov/programs/traffic-operations/mpr/pems-source>

Based on traffic data from the Caltrans PeMS, traffic speeds during the daytime and nighttime periods were identified. For all traffic in both directions at all hours of the day, a 65mph speed limit was assumed.

The ADT for East Campbell Avenue was calculated based on traffic data found on the Santa Clara County Traffic Count GIS website.²¹ Assuming a 1 percent per year increase, the predicted ADT on East Campbell Avenue was 20,244 vehicles. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,²² which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for each roadway. An average travel speed of 30 mph on East Campbell Avenue was used for all hours of the day based on posted speed limit signs on the roadway.

This analysis involved the development of DPM, organic TACs, and PM_{2.5} emissions for future traffic on State Route 17 and East Campbell Avenue and using these emissions with an air quality dispersion model to calculate TAC and PM_{2.5} concentrations at the project MEI receptor locations. Maximum increased lifetime cancer risks and annual PM_{2.5} concentrations for the receptors were then computed using modeled TAC and PM_{2.5} concentrations and BAAQMD methods and exposure parameters described in *Attachment 1*.

BAAQMD Permitted Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Permitted Stationary Sources 2020* GIS website,²³ which identifies the location of nearby stationary sources and their estimated risk and hazard impacts, including emissions and adjustments to account for new OEHHA guidance. Two sources, a generator and a coffee and tea manufacturer, were identified using this tool. A Stationary Source Information Form (SSIF) containing one of the sources was prepared and submitted to BAAQMD. BAAQMD provided updated emissions data and screening risk values for the source.²⁴ The screening level risks and hazards provided by BAAQMD for these sources were adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for a Diesel Backup Generator and Generic Equipment*. Community risk impacts from stationary sources upon the MEI are reported in Table 5.

Summary of Health Risks at the Project MEI

Table 5 reports both the project and cumulative community risk impacts at the sensitive receptor most affected by the project (i.e., the MEI). The health risks from project activities would exceed the maximum increased cancer risk single-source threshold. However, the cumulative source thresholds would not be exceeded.

²¹ Santa Clara County Traffic Count, web:

<https://www.arcgis.com/apps/mapviewer/index.html?layers=709ef12897bc42aa8e3d87f4505641c0>

²² The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2021 does not include Burden type output with hour by hour traffic volume information.

²³ BAAQMD,

<https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3>

²⁴ Correspondence with Alison Kirk, BAAQMD, January 13, 2023.

Table 5. Cumulative Community Risk Impacts at the Location of the Project MEI

Source		Cancer Risk (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	12.07 (infant)	0.05	0.01
	Mitigated	2.01 (infant)	0.03	<0.01
<i>BAAQMD Single-Source Threshold</i>		<i>10</i>	<i>0.3</i>	<i>1.0</i>
<i>Exceed Threshold?</i>	Unmitigated	<i>Yes</i>	<i>No</i>	<i>No</i>
	Mitigated	<i>No</i>	<i>No</i>	<i>No</i>
Existing Cumulative Sources				
State Route 17 – ADT 125,660		3.56	0.17	<0.01
East Campbell Avenue – ADT 20,244		0.67	0.06	<0.01
City of Campbell (Facility ID #19049, Generator), MEI at 1000+ feet		<0.01	<0.01	<0.01
Orchard Valley Coffee (Facility ID #18459, Manufacturing), MEI at 970 feet		<0.01	<0.01	<0.01
<i>Combined Sources</i>	Unmitigated	16.32	0.30	<0.05
	Mitigated	6.26	0.28	<0.05
<i>BAAQMD Cumulative Source Threshold</i>		<i>100</i>	<i>0.8</i>	<i>10.0</i>
<i>Exceed Threshold?</i>	Unmitigated	<i>No</i>	<i>No</i>	<i>No</i>
	Mitigated	<i>No</i>	<i>No</i>	<i>No</i>

Non-CEQA: On-Site Community Risk Assessment for TAC Sources - New Project Residences

A health risk assessment was completed to assess the impact that the existing TAC sources would have on the new proposed sensitive receptors (residents) introduced by the project. The same existing TAC sources identified above in Table 5 were used.²⁵ Figure 3 shows the on-site sensitive receptors in relation to the nearby TAC sources. The cumulative on-site health risk assessment results are listed in Table 6. *Attachment 4* includes risk calculations for TAC source impacts upon the proposed on-site sensitive receptors.

Nearby Highways and Roadways – State Route 17 and East Campbell Avenue

The highway and roadway analysis for the new project residents was conducted in the same manner as described above for the off-site MEI. However, year 2025 (operational year) emission factors were conservatively assumed as being representative of future conditions, instead of 2023 (construction year). An analysis based on 2025 resulted in an increased ADT on State Route 17 of 128,100 vehicles and 20,623 vehicles on East Campbell Avenue. The project set of receptors were placed throughout the project area where homes are planned to be constructed. Highway and roadway impacts were modeled at receptor heights of 5 feet (1.5 meters) and 15 feet (4.5 meters) representing sensitive receptors on the first and second floors of the homes. The portions of State Route 17 and East Campbell Avenue included in the modeling are shown in Figure 3 along with the project site and receptor locations where impacts were modeled.

Maximum increased cancer risks were calculated for the residents at the project site using the maximum modeled TAC concentrations. A 30-year exposure period was used in calculating cancer risks assuming the residents would include third trimester pregnancy and infants/children and were assumed to be in the new housing area for 24 hours per day for 350 days per year. The maximum impacts from State Route 17 occurred at a first-floor receptor in the southeast corner of the project site. The maximum impacts from East Campbell Avenue occurred at a first-floor receptor in the northwest corner of the project site. Cancer risks associated with each roadway are greatest closest to each respective roadway and decrease with distance from the road. The highway and roadway community risk impacts at the project site are shown in Table 6. Risk values were computed using modeled DPM and PM_{2.5} concentrations and BAAQMD recommended methods and exposure parameters described in *Attachment 1*. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 4*.

²⁵ We note that to the extent this analysis considers *existing* air quality issues in relation to the impact on *future residents* of the Project, it does so for informational purposes only pursuant to the judicial decisions in *CBIA v. BAAQMD* (2015) 62 Cal.4th 369, 386 and *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473, which confirm that the impacts of the environment on a project are excluded from CEQA unless the project itself “exacerbates” such impacts.

Stationary Sources

The stationary source screening analysis for the new project sensitive receptors was conducted in the same manner as described above for the construction MEI. Two sources were located within the project's 1,000-foot influence area. Table 6 shows the health risk assessment results from the stationary sources upon the project residents.

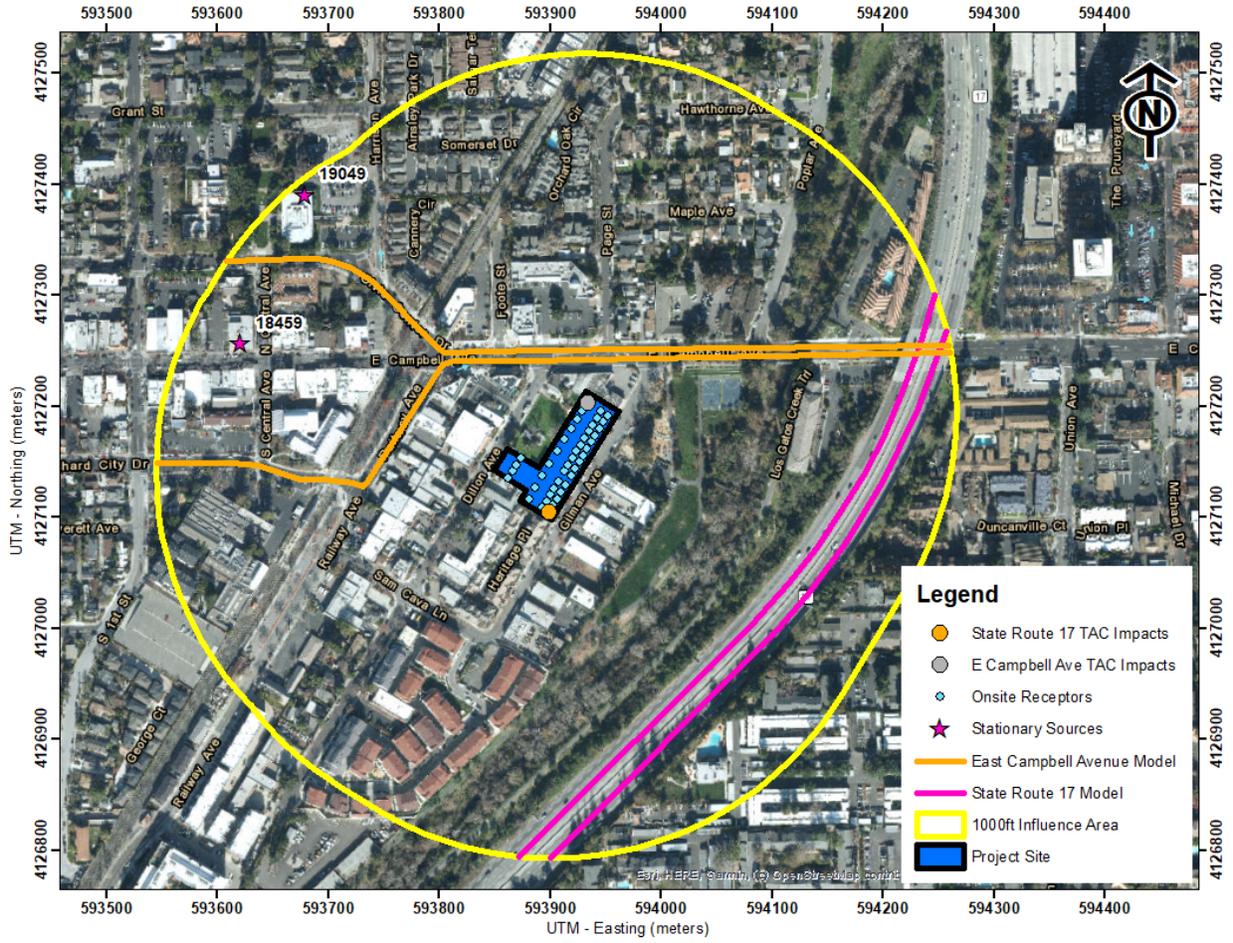
Summary of Cumulative Community Risks at the Project Site

Community risk impacts from the existing and TAC sources upon the project site are reported in Table 6. The risks from the singular TAC sources are compared against the BAAQMD single-source threshold. The risks from all the sources are then combined and compared against the BAAQMD cumulative-source threshold. As shown, none of the sources exceed the single-source or cumulative-source thresholds.

Table 6. Impacts from Combined Sources to Project Site Receptors

Source	Cancer Risk (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index
State Route 17 – ADT 125,660	3.60	0.18	<0.01
East Campbell Avenue – ADT 20,244	2.63	0.23	<0.01
City of Campbell (Facility ID #19049, Generator), Project Site at 860 feet	<0.01	<0.01	<0.01
Orchard Valley Coffee (Facility ID #18459, Manufacturing), Project Site at 800 feet	<0.01	<0.01	<0.01
<i>BAAQMD Single-Source Threshold</i>	10	0.3	1.0
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>
Cumulative Total	6.25	<0.43	<0.04
<i>BAAQMD Cumulative Source Threshold</i>	100	0.8	10.0
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>

Figure 3. Project Site, On-Site Sensitive Receptors, and Receptor with Maximum TAC Impacts



Supporting Documentation

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

Attachment 2 includes the CalEEMod output for project construction emissions. Also included are any modeling assumptions.

Attachment 3 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 4 includes the cumulative health risk calculations from existing sources affecting the construction MEI.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.²⁶ These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.²⁷ This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.²⁸ Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

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

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

²⁶ 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.

²⁷ CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

²⁸ BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

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

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

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

Where:

CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

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

Where:

C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁻⁶ = Conversion factor

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

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

Parameter	Exposure Type →	Infant	Child	Adult	
	Age Range →	3 rd Trimester	0 < 2	2 < 16	16 - 30
DPM CPF (mg/kg-day) ⁻¹		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Vehicle TOG Exhaust CPF (mg/kg-day) ⁻¹		6.28E-03	6.28E-03	6.28E-03	6.28E-03
Vehicle TOG Evaporative CPF (mg/kg-day) ⁻¹		3.70E-04	3.70E-04	3.70E-04	3.70E-04
Daily Breathing Rate (L/kg-day) 95 th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95 th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

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

Non-Cancer Hazards

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

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

Annual PM_{2.5} Concentrations

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

Attachment 2: CalEEMod Modeling Inputs and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: 57 Gilman Ave	Complete ALL Portions in Yellow																														
See Equipment Type TAB for type, horsepower and load factor																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Project Size</td> <td style="width: 40%;">29 Dwelling Units</td> <td style="width: 40%;">1.14 total project acres disturbed</td> </tr> <tr> <td></td> <td>73630 s.f. residential</td> <td></td> </tr> <tr> <td></td> <td>s.f. retail</td> <td></td> </tr> <tr> <td></td> <td>s.f. office/commercial</td> <td></td> </tr> <tr> <td></td> <td>s.f. other, specify:</td> <td></td> </tr> <tr> <td></td> <td>s.f. parking garage</td> <td>spaces</td> </tr> <tr> <td></td> <td>s.f. parking lot</td> <td>spaces</td> </tr> <tr> <td>Construction Hours</td> <td>am to</td> <td>pm</td> </tr> </table>	Project Size	29 Dwelling Units	1.14 total project acres disturbed		73630 s.f. residential			s.f. retail			s.f. office/commercial			s.f. other, specify:			s.f. parking garage	spaces		s.f. parking lot	spaces	Construction Hours	am to	pm	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: yellow;">Pile Driving? Y/N?</td> </tr> <tr> <td style="background-color: yellow;">Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/N? ____</td> </tr> <tr> <td style="background-color: yellow;">IF YES (if BOTH separate values) --></td> </tr> <tr> <td style="background-color: yellow;">Kilowatts/Horsepower: _____</td> </tr> <tr> <td style="background-color: yellow;">Fuel Type: _____</td> </tr> <tr> <td style="background-color: yellow;">Location in project (Plans Desired if Available):</td> </tr> </table>	Pile Driving? Y/N?	Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? Y/N? ____	IF YES (if BOTH separate values) -->	Kilowatts/Horsepower: _____	Fuel Type: _____	Location in project (Plans Desired if Available):
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Fuel Type: _____																															
Location in project (Plans Desired if Available):																															
DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT																															

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
Demolition		Start Date:	4/3/2023	Total phase:	15			Overall Import/Export Volumes
		End Date:	4/21/2023					
1	Concrete/Industrial Saws	81	0.73	8	1	0.53333333	473	Demolition Volume
2	Excavators	158	0.38	8	15	8	14410	Square footage of buildings to be demolished
0	Rubber-Tired Dozers	247	0.4	0	0	0	0	(or total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	8	15	8	8614	48,351 square feet or
	Trucking							? Hauling volume (tons)
								Any pavement demolished and hauled? ? tons
Grading / Excavation		Start Date:	4/22/2023	Total phase:	20			Soil Hauling Volume
		End Date:	5/19/2023					Export volume = 2500 cubic yards?
1	Excavators	158	0.38	8	4	1.6	1921	Import volume = ? cubic yards?
1	Graders	187	0.41	8	4	1.6	2453	
0	Rubber-Tired Dozers	247	0.4	0	0	0	0	
1	Scrapers	367	0.48	8	4	1.6	5637	
2	Tractors/Loaders/Backhoes	97	0.37	7	4	1.4	2010	
	Other Equipment?							
Pipelines/Undergrounding		Start Date:	5/20/2023	Total phase:	60			Cement Trucks? <u>200</u> Total Round-Trips
		End Date:	8/11/2023					Electric? (Y/N) N Otherwise assumed diesel
1	Tractor/Loader/Backhoe	97	0.37	8	4	0.53333333	1148	Liquid Propane (LPG)? (Y/N) N Otherwise Assumed diesel
2	Excavators	158	0.38	8	4	0.53333333	3843	Or temporary line power? (Y/N) Y
Building - Exterior		Start Date:	8/12/2023	Total phase:	340			
		End Date:	11/29/2024					
0	Cranes	231	0.29	0	0	0	0	
2	Forklifts	89	0.2	6	340	6	72624	
0	Generator Sets	84	0.74	0	0	0	0	
2	Tractors/Loaders/Backhoes	97	0.37	6	340	6	146431	
0	Welders	46	0.45	0	0	0	0	
	Other Equipment?							
Building - Interior/Architectural Coating		Start Date:		Total phase:	340			
		End Date:						
0		78	0.48	0	340	0	0	
0		62	0.31	0	0	0	0	
Paving		Start Date:	11/30/2024	Total phase:	3			Asphalt? 160 cubic yards or ____ round trips?
		Start Date:	12/4/2024					
1	Cement and Mortar Mixers	9	0.56	6	3	6	91	
1	Pavers	130	0.42	6	3	6	983	
1	Paving Equipment	132	0.36	8	3	8	1140	
2	Rollers	80	0.38	7	3	7	1277	
1	Tractors/Loaders/Backhoes	97	0.37	8	3	8	861	
	Other Equipment?							
Additional Phases		Start Date:		Total phase:				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs
 It is assumed that water trucks would be used during grading
Add or subtract phases and equipment, as appropriate
Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants						
<i>Unmitigated</i>	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	CO2e	
Year	Tons				MT	
Construction Equipment						
2023	0.06	2.31	0.04	0.03	1,524.00	
2024	0.64	4.98	0.08	0.06	3427.00	
<i>Total Construction Emissions</i>						
Tons	0.70	7.29	0.12	0.09	4951.00	
<i>Average Daily Emissions</i>						
Pounds/Workdays					Workdays	
2023	0.62	23.69	0.41	0.31		195
2024	5.27	40.99	0.66	0.49		243
Threshold - lbs/day	54.0	54.0	82.0	54.0		
<i>Total Construction Emissions</i>						
Pounds	5.88	64.68	1.07	0.80	0.00	
Average	3.20	33.29	0.55	0.41	0.00	438.00
Threshold - lbs/day	54.0	54.0	82.0	54.0		

57 Gilman Ave, Campbell Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	57 Gilman Ave, Campbell
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.4
Location	57 Gilman Ave, Campbell, CA 95008, USA
County	Santa Clara
City	Campbell
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1814
EDFZ	1
Electric Utility	Silicon Valley Clean Energy
Gas Utility	Pacific Gas & Electric

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
Condo/Townhouse	29.0	Dwelling Unit	1.14	73,630	0.00	0.00	87.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.02	41.9	0.70	7.63	8.33	0.51	2.08	2.59	32,142
Mit.	0.80	41.4	0.54	7.63	8.17	0.37	2.08	2.45	32,142
% Reduced	22%	1%	23%	—	2%	28%	—	6%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	105	43.9	0.70	7.66	8.34	0.51	2.09	2.59	32,074
Mit.	104	43.4	0.54	7.66	8.21	0.37	2.09	2.46	32,074
% Reduced	< 0.5%	1%	23%	—	2%	28%	—	5%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	3.49	27.3	0.45	4.91	5.36	0.32	1.34	1.66	20,702
Mit.	3.35	27.1	0.36	4.91	5.27	0.24	1.34	1.58	20,702
% Reduced	4%	1%	20%	—	2%	26%	—	5%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.64	4.98	0.08	0.90	0.98	0.06	0.24	0.30	3,427
Mit.	0.61	4.94	0.06	0.90	0.96	0.04	0.24	0.29	3,427
% Reduced	4%	1%	20%	—	2%	26%	—	5%	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2023	1.02	41.9	0.70	7.63	8.33	0.51	2.08	2.59	32,142
2024	0.99	40.2	0.68	7.63	8.30	0.49	2.08	2.57	31,664
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2023	0.98	43.9	0.70	7.63	8.33	0.51	2.08	2.59	32,074
2024	105	42.3	0.68	7.66	8.34	0.49	2.09	2.58	31,635
Average Daily	—	—	—	—	—	—	—	—	—
2023	0.33	12.7	0.21	2.30	2.52	0.16	0.61	0.77	9,204
2024	3.49	27.3	0.45	4.91	5.36	0.32	1.34	1.66	20,702
Annual	—	—	—	—	—	—	—	—	—
2023	0.06	2.31	0.04	0.42	0.46	0.03	0.11	0.14	1,524
2024	0.64	4.98	0.08	0.90	0.98	0.06	0.24	0.30	3,427

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2023	0.80	41.4	0.54	7.63	8.17	0.37	2.08	2.45	32,142
2024	0.79	39.9	0.54	7.63	8.17	0.37	2.08	2.45	31,664
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2023	0.76	43.4	0.54	7.63	8.17	0.37	2.08	2.45	32,074

2024	104	42.0	0.54	7.66	8.21	0.37	2.09	2.46	31,635
Average Daily	—	—	—	—	—	—	—	—	—
2023	0.24	12.5	0.16	2.29	2.45	0.11	0.61	0.72	9,204
2024	3.35	27.1	0.36	4.91	5.27	0.24	1.34	1.58	20,702
Annual	—	—	—	—	—	—	—	—	—
2023	0.04	2.28	0.03	0.42	0.45	0.02	0.11	0.13	1,524
2024	0.61	4.94	0.06	0.90	0.96	0.04	0.24	0.29	3,427

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.78	0.72	0.03	0.42	0.45	0.03	0.07	0.10	1,545
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.60	0.79	0.03	0.42	0.45	0.02	0.07	0.10	1,466
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.59	0.71	0.02	0.38	0.40	0.02	0.07	0.09	1,358
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.47	0.13	< 0.005	0.07	0.07	< 0.005	0.01	0.02	225

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222

Area	2.01	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.78	0.72	0.03	0.42	0.45	0.03	0.07	0.10	1,545
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Area	1.86	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.60	0.79	0.03	0.42	0.45	0.02	0.07	0.10	1,466
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.64	0.48	0.01	0.38	0.38	0.01	0.07	0.07	1,038
Area	1.93	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.18
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.59	0.71	0.02	0.38	0.40	0.02	0.07	0.09	1,358
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172
Area	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36
Energy	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.2
Water	—	—	—	—	—	—	—	—	0.65

Waste	—	—	—	—	—	—	—	—	6.72
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.47	0.13	< 0.005	0.07	0.07	< 0.005	0.01	0.02	225

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222
Area	2.01	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.78	0.72	0.03	0.42	0.45	0.03	0.07	0.10	1,545
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Area	1.86	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.60	0.79	0.03	0.42	0.45	0.02	0.07	0.10	1,466
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.64	0.48	0.01	0.38	0.38	0.01	0.07	0.07	1,038
Area	1.93	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.18

Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.59	0.71	0.02	0.38	0.40	0.02	0.07	0.09	1,358
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172
Area	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36
Energy	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.2
Water	—	—	—	—	—	—	—	—	0.65
Waste	—	—	—	—	—	—	—	—	6.72
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.47	0.13	< 0.005	0.07	0.07	< 0.005	0.01	0.02	225

3. Construction Emissions Details

3.1. Demolition (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	4.38	0.19	—	0.19	0.18	—	0.18	883
Demolition	—	—	—	3.25	3.25	—	0.49	0.49	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.18	0.01	—	0.01	0.01	—	0.01	36.3
Demolition	—	—	—	0.13	0.13	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.01
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.11	0.11	0.00	0.03	0.03	125
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	3.58	0.05	0.69	0.74	0.03	0.19	0.22	2,896
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.15	< 0.005	0.03	0.03	< 0.005	0.01	0.01	119
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	19.7

3.2. Demolition (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
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Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	4.68	0.08	—	0.08	0.07	—	0.07	883
Demolition	—	—	—	3.25	3.25	—	0.49	0.49	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.19	< 0.005	—	< 0.005	< 0.005	—	< 0.005	36.3
Demolition	—	—	—	0.13	0.13	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.01
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.11	0.11	0.00	0.03	0.03	125
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	3.58	0.05	0.69	0.74	0.03	0.19	0.22	2,896
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.15	< 0.005	0.03	0.03	< 0.005	0.01	0.01	119

Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	19.7

3.3. Grading (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.14	0.14	—	0.14	0.13	—	0.13	624
Dust From Material Movement	—	—	—	0.33	0.33	—	0.04	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.01	—	0.01	0.01	—	0.01	34.2
Dust From Material Movement	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.66
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.11	0.11	0.00	0.03	0.03	125
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.51	0.02	0.29	0.31	0.01	0.08	0.09	1,220
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.40
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.09	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	66.8
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.1

3.4. Grading (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	2.02	0.02	—	0.02	0.02	—	0.02	624
Dust From Material Movement	—	—	—	0.13	0.13	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	34.2
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.66
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.11	0.11	0.00	0.03	0.03	125
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.51	0.02	0.29	0.31	0.01	0.08	0.09	1,220
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	6.40
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.09	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	66.8
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	11.1

3.5. Building Construction (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.20	0.17	—	0.17	0.16	—	0.16	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.20	0.17	—	0.17	0.16	—	0.16	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.89	0.05	—	0.05	0.04	—	0.04	185
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.01	—	0.01	0.01	—	0.01	30.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.00	0.19	0.19	0.00	0.04	0.04	209
Vendor	< 0.005	0.10	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	75.1
Hauling	0.62	38.5	0.53	7.42	7.95	0.35	2.03	2.38	31,191
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	0.00	0.19	0.19	0.00	0.04	0.04	193
Vendor	< 0.005	0.11	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	75.0
Hauling	0.58	40.6	0.53	7.42	7.95	0.35	2.03	2.38	31,139
Average Daily	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.00	0.05	0.05	0.00	0.01	0.01	54.3
Vendor	< 0.005	0.03	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	20.9
Hauling	0.17	11.1	0.15	2.03	2.18	0.10	0.56	0.65	8,659
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.98
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.45
Hauling	0.03	2.02	0.03	0.37	0.40	0.02	0.10	0.12	1,434

3.6. Building Construction (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.75	< 0.005	—	< 0.005	< 0.005	—	< 0.005	185
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	< 0.005	—	< 0.005	< 0.005	—	< 0.005	30.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.00	0.19	0.19	0.00	0.04	0.04	209
Vendor	< 0.005	0.10	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	75.1
Hauling	0.62	38.5	0.53	7.42	7.95	0.35	2.03	2.38	31,191
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	0.00	0.19	0.19	0.00	0.04	0.04	193
Vendor	< 0.005	0.11	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	75.0
Hauling	0.58	40.6	0.53	7.42	7.95	0.35	2.03	2.38	31,139
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.00	0.05	0.05	0.00	0.01	0.01	54.3
Vendor	< 0.005	0.03	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	20.9
Hauling	0.17	11.1	0.15	2.03	2.18	0.10	0.56	0.65	8,659
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.98
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.45
Hauling	0.03	2.02	0.03	0.37	0.40	0.02	0.10	0.12	1,434

3.7. Building Construction (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	3.00	0.15	—	0.15	0.14	—	0.14	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	3.00	0.15	—	0.15	0.14	—	0.14	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.96	0.10	—	0.10	0.09	—	0.09	436
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.36	0.02	—	0.02	0.02	—	0.02	72.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.00	0.19	0.19	0.00	0.04	0.04	205
Vendor	< 0.005	0.10	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	74.2
Hauling	0.61	37.1	0.53	7.42	7.95	0.35	2.03	2.38	30,718
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	0.00	0.19	0.19	0.00	0.04	0.04	189
Vendor	< 0.005	0.10	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	74.1
Hauling	0.58	39.1	0.53	7.42	7.95	0.35	2.03	2.38	30,667
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.12	0.12	0.00	0.03	0.03	125
Vendor	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.5
Hauling	0.39	25.1	0.35	4.77	5.12	0.23	1.31	1.54	20,057
Annual	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	0.01	0.01	20.7
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.02

Hauling	0.07	4.58	0.06	0.87	0.93	0.04	0.24	0.28	3,321
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3.8. Building Construction (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	1.77	0.01	—	0.01	0.01	—	0.01	436
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.32	< 0.005	—	< 0.005	< 0.005	—	< 0.005	72.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.00	0.19	0.19	0.00	0.04	0.04	205
Vendor	< 0.005	0.10	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	74.2
Hauling	0.61	37.1	0.53	7.42	7.95	0.35	2.03	2.38	30,718

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.08	0.00	0.19	0.19	0.00	0.04	0.04	189
Vendor	< 0.005	0.10	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	74.1
Hauling	0.58	39.1	0.53	7.42	7.95	0.35	2.03	2.38	30,667
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.00	0.12	0.12	0.00	0.03	0.03	125
Vendor	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	48.5
Hauling	0.39	25.1	0.35	4.77	5.12	0.23	1.31	1.54	20,057
Annual	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	0.01	0.01	20.7
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.02
Hauling	0.07	4.58	0.06	0.87	0.93	0.04	0.24	0.28	3,321

3.9. Paving (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	5.70	0.27	—	0.27	0.25	—	0.25	1,120
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.20
Paving	0.00	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.52
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.14	0.14	0.00	0.03	0.03	136
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	3.72	0.05	0.70	0.75	0.03	0.19	0.23	2,913
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	24.0
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.97

3.10. Paving (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	5.59	0.08	—	0.08	0.08	—	0.08	1,120
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.20
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.52
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.00	0.14	0.14	0.00	0.03	0.03	136
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	3.72	0.05	0.70	0.75	0.03	0.19	0.23	2,913
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	24.0
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.97
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3.11. Architectural Coating (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Architectural Coatings	104	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.84	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.52	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.02	0.00	0.04	0.04	0.00	0.01	0.01	37.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.05

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Architectural Coatings	104	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.84	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.52	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Worker	0.01	0.02	0.00	0.04	0.04	0.00	0.01	0.01	37.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Trenching (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.01	—	0.01	0.01	—	0.01	38.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.04

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.07	0.07	0.00	0.02	0.02	75.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Trenching (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.22	< 0.005	—	< 0.005	< 0.005	—	< 0.005	38.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.04
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.07	0.07	0.00	0.02	0.02	75.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222
Total	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Total	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172
Total	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172

4.1.2. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222
Total	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Total	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172
Total	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.79
Total	—	—	—	—	—	—	—	—	0.79
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.79
Total	—	—	—	—	—	—	—	—	0.79
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.13
Total	—	—	—	—	—	—	—	—	0.13

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.79
Total	—	—	—	—	—	—	—	—	0.79
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.79
Total	—	—	—	—	—	—	—	—	0.79
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.13
Total	—	—	—	—	—	—	—	—	0.13

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Total	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Total	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.1
Total	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.1

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Total	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Total	0.01	0.21	0.02	—	0.02	0.02	—	0.02	272
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.1
Total	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.1

4.3. Area Emissions by Source

4.3.2. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	1.58	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—
Landscape Equipment	0.15	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Total	2.01	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	1.58	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—
Total	1.86	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.29	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36
Total	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36

4.3.1. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	1.58	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—
Landscape Equipment	0.15	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Total	2.01	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	1.58	—	—	—	—	—	—	—	—
Architectural Coatings	0.28	—	—	—	—	—	—	—	—
Total	1.86	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.29	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36
Total	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36

4.4. Water Emissions by Land Use

4.4.2. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	3.95
Total	—	—	—	—	—	—	—	—	3.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	3.95
Total	—	—	—	—	—	—	—	—	3.95
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.65
Total	—	—	—	—	—	—	—	—	0.65

4.4.1. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	3.95
Total	—	—	—	—	—	—	—	—	3.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	3.95
Total	—	—	—	—	—	—	—	—	3.95
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.65

Total	—	—	—	—	—	—	—	—	0.65
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4.5. Waste Emissions by Land Use

4.5.2. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	40.6
Total	—	—	—	—	—	—	—	—	40.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	40.6
Total	—	—	—	—	—	—	—	—	40.6
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	6.72
Total	—	—	—	—	—	—	—	—	6.72

4.5.1. 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	40.6
Total	—	—	—	—	—	—	—	—	40.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	40.6
Total	—	—	—	—	—	—	—	—	40.6

Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	6.72
Total	—	—	—	—	—	—	—	—	6.72

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.53
Total	—	—	—	—	—	—	—	—	0.53
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.53
Total	—	—	—	—	—	—	—	—	0.53
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.53
Total	—	—	—	—	—	—	—	—	0.53
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Condo/Townhouse	—	—	—	—	—	—	—	—	0.53
Total	—	—	—	—	—	—	—	—	0.53
Annual	—	—	—	—	—	—	—	—	—
Condo/Townhouse	—	—	—	—	—	—	—	—	0.09
Total	—	—	—	—	—	—	—	—	0.09

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—
-------	---	---	---	---	---	---	---	---	---

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
------------	-----	-----	-------	-------	-------	--------	--------	--------	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/3/2023	4/21/2023	5.00	15.0	—
Grading	Grading	4/22/2023	5/19/2023	5.00	20.0	—
Building Construction	Building Construction	8/12/2023	11/29/2024	5.00	340	—
Paving	Paving	11/30/2024	12/4/2024	5.00	3.00	—
Architectural Coating	Architectural Coating	3/2/2024	3/16/2024	5.00	10.0	—
Pipelines/Undergrounding	Trenching	5/20/2023	8/11/2023	5.00	60.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	0.53	33.0	0.73
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	1.60	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	1.40	84.0	0.37
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Excavators	Diesel	Average	1.00	1.60	36.0	0.38
Grading	Scrapers	Diesel	Average	1.00	1.60	423	0.48
Pipelines/Undergrounding	Tractors/Loaders/Backhoes	Diesel	Average	1.00	0.53	84.0	0.37
Pipelines/Undergrounding	Excavators	Diesel	Average	2.00	0.53	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	0.53	33.0	0.73
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	1.60	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	1.40	84.0	0.37
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	6.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Interim	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Excavators	Diesel	Tier 4 Interim	1.00	1.60	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Interim	1.00	1.60	423	0.48
Pipelines/Undergrounding	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	0.53	84.0	0.37
Pipelines/Undergrounding	Excavators	Diesel	Tier 4 Interim	2.00	0.53	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
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Demolition	—	—	—	—
Demolition	Worker	12.5	12.9	LDA,LDT1,LDT2
Demolition	Vendor	—	6.94	HHDT,MHDT
Demolition	Hauling	37.1	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	12.9	LDA,LDT1,LDT2
Grading	Vendor	—	6.94	HHDT,MHDT
Grading	Hauling	15.7	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.9	12.9	LDA,LDT1,LDT2
Building Construction	Vendor	3.10	6.94	HHDT,MHDT
Building Construction	Hauling	400	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	12.9	LDA,LDT1,LDT2
Paving	Vendor	—	6.94	HHDT,MHDT
Paving	Hauling	38.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.18	12.9	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.94	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Pipelines/Undergrounding	—	—	—	—
Pipelines/Undergrounding	Worker	7.50	12.9	LDA,LDT1,LDT2

Pipelines/Undergrounding	Vendor	—	6.94	HHDT,MHDT
Pipelines/Undergrounding	Hauling	0.00	20.0	HHDT
Pipelines/Undergrounding	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	12.9	LDA,LDT1,LDT2
Demolition	Vendor	—	6.94	HHDT,MHDT
Demolition	Hauling	37.1	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	12.9	LDA,LDT1,LDT2
Grading	Vendor	—	6.94	HHDT,MHDT
Grading	Hauling	15.7	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.9	12.9	LDA,LDT1,LDT2
Building Construction	Vendor	3.10	6.94	HHDT,MHDT
Building Construction	Hauling	400	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	12.9	LDA,LDT1,LDT2
Paving	Vendor	—	6.94	HHDT,MHDT
Paving	Hauling	38.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	4.18	12.9	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.94	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Pipelines/Undergrounding	—	—	—	—
Pipelines/Undergrounding	Worker	7.50	12.9	LDA,LDT1,LDT2
Pipelines/Undergrounding	Vendor	—	6.94	HHDT,MHDT
Pipelines/Undergrounding	Hauling	0.00	20.0	HHDT
Pipelines/Undergrounding	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	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)
Architectural Coating	149,101	49,700	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	48,351	—
Grading	—	2,500	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	2.34	0.00	0.00
2024	0.00	2.34	0.00	0.00

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	212	236	182	77,150	1,378	1,533	1,182	500,918

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	212	236	182	77,150	1,378	1,533	1,182	500,918

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
Condo/Townhouse	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
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)
149100.75	49,700	0.00	0.00	—

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)
Condo/Townhouse	123,960	2.34	0.0000	0.0000	847,513

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)
Condo/Townhouse	123,960	2.34	0.0000	0.0000	847,513

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	1,051,726	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Condo/Townhouse	1,051,726	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	7.17	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Condo/Townhouse	7.17	0.00

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
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
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5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
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5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	12.6	annual days of extreme heat
Extreme Precipitation	5.85	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about $\frac{3}{4}$ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	22.2
AQ-PM	17.5
AQ-DPM	75.1
Drinking Water	22.7
Lead Risk Housing	28.0
Pesticides	0.00
Toxic Releases	32.5
Traffic	76.1
Effect Indicators	—
CleanUp Sites	54.6
Groundwater	94.0
Haz Waste Facilities/Generators	90.7
Impaired Water Bodies	33.2
Solid Waste	52.9
Sensitive Population	—
Asthma	26.2
Cardio-vascular	31.8
Low Birth Weights	13.5
Socioeconomic Factor Indicators	—
Education	15.2
Housing	43.9
Linguistic	28.8
Poverty	23.7

Unemployment	3.21
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7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	83.45951495
Employed	98.22918003
Median HI	91.49236494
Education	—
Bachelor's or higher	85.89760041
High school enrollment	100
Preschool enrollment	73.77133325
Transportation	—
Auto Access	62.47914795
Active commuting	36.23764917
Social	—
2-parent households	33.55575516
Voting	85.07635057
Neighborhood	—
Alcohol availability	23.18747594
Park access	81.35506224
Retail density	92.44193507
Supermarket access	56.57641473
Tree canopy	80.43115617
Housing	—
Homeownership	39.45848839

Housing habitability	68.72834595
Low-inc homeowner severe housing cost burden	32.34954446
Low-inc renter severe housing cost burden	88.65648659
Uncrowded housing	54.63877839
Health Outcomes	—
Insured adults	84.53740536
Arthritis	0.0
Asthma ER Admissions	72.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	40.0
Cognitively Disabled	85.7
Physically Disabled	88.8
Heart Attack ER Admissions	53.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0

No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	58.1
Elderly	80.0
English Speaking	88.5
Foreign-born	14.9
Outdoor Workers	66.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.3
Traffic Density	80.8
Traffic Access	67.6
Other Indices	—
Hardship	3.1
Other Decision Support	—
2016 Voting	81.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Campbell Default electricity provider is Silicon Valley Clean Energy
Land Use	Total lot acreage provided in construction worksheet from applicant. Building square footage calculated from applicant provided building plans.
Construction: Construction Phases	Start date and total workdays provided in construction worksheet, end dates from CalEEMod.
Construction: Off-Road Equipment	Provided in construction worksheet.
Operations: Hearths	No hearths.
Operations: Water and Waste Water	100% aerobic, no septic tanks or lagoons.
Construction: Trips and VMT	Building const = 200 concrete truck round trips, Paving = 160-cy of asphalt. Half mile trips for onsite travel.

57 Gilman Ave, Campbell Detailed Report - HRA Use, No Operation

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3.6. Building Construction (2023) - Mitigated

3.7. Building Construction (2024) - Unmitigated

3.8. Building Construction (2024) - Mitigated

3.9. Paving (2024) - Unmitigated

3.10. Paving (2024) - Mitigated

3.11. Architectural Coating (2024) - Unmitigated

3.12. Architectural Coating (2024) - Mitigated

3.13. Trenching (2023) - Unmitigated

3.14. Trenching (2023) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.2. Unmitigated

4.3.1. Mitigated

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

4.4.1. Mitigated

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

4.5.1. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	57 Gilman Ave, Campbell
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	32.4
Location	57 Gilman Ave, Campbell, CA 95008, USA
County	Santa Clara
City	Campbell
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1814
EDFZ	1
Electric Utility	Silicon Valley Clean Energy
Gas Utility	Pacific Gas & Electric

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
Condo/Townhouse	29.0	Dwelling Unit	1.14	73,630	0.00	0.00	87.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction 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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.66	9.79	0.19	3.28	3.47	0.18	0.50	0.68	2,175
Mit.	0.44	9.30	0.08	3.28	3.35	0.07	0.50	0.57	2,175
% Reduced	33%	5%	59%	—	3%	59%	—	15%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	104	10.1	0.27	0.20	0.38	0.25	0.05	0.26	2,183
Mit.	104	9.61	0.08	0.20	0.22	0.08	0.05	0.08	2,183
% Reduced	< 0.5%	5%	69%	—	41%	69%	—	67%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	3.25	6.37	0.11	0.21	0.27	0.10	0.04	0.13	1,419
Mit.	3.12	6.18	0.02	0.20	0.21	0.01	0.04	0.05	1,419
% Reduced	4%	3%	84%	5%	24%	85%	3%	63%	—
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.59	1.16	0.02	0.04	0.05	0.02	0.01	0.02	235
Mit.	0.57	1.13	< 0.005	0.04	0.04	< 0.005	0.01	0.01	235
% Reduced	4%	3%	84%	5%	24%	85%	3%	63%	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2023	0.66	9.79	0.19	3.28	3.47	0.18	0.50	0.68	2,175
2024	0.63	9.52	0.16	0.19	0.36	0.15	0.05	0.20	2,152
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2023	0.62	10.1	0.18	0.19	0.38	0.17	0.05	0.22	2,183
2024	104	9.85	0.27	0.20	0.36	0.25	0.05	0.26	2,163
Average Daily	—	—	—	—	—	—	—	—	—
2023	0.23	3.19	0.07	0.21	0.27	0.06	0.04	0.10	692
2024	3.25	6.37	0.11	0.13	0.23	0.10	0.03	0.13	1,419
Annual	—	—	—	—	—	—	—	—	—
2023	0.04	0.58	0.01	0.04	0.05	0.01	0.01	0.02	115
2024	0.59	1.16	0.02	0.02	0.04	0.02	0.01	0.02	235

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2023	0.44	9.30	0.08	3.28	3.35	0.07	0.50	0.57	2,175
2024	0.43	9.22	0.03	0.19	0.22	0.02	0.05	0.07	2,152
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2023	0.40	9.61	0.03	0.19	0.22	0.02	0.05	0.07	2,183

2024	104	9.55	0.08	0.20	0.22	0.08	0.05	0.08	2,163
Average Daily	—	—	—	—	—	—	—	—	—
2023	0.14	3.01	0.01	0.20	0.21	0.01	0.04	0.05	692
2024	3.12	6.18	0.02	0.13	0.14	0.01	0.03	0.05	1,419
Annual	—	—	—	—	—	—	—	—	—
2023	0.02	0.55	< 0.005	0.04	0.04	< 0.005	0.01	0.01	115
2024	0.57	1.13	< 0.005	0.02	0.03	< 0.005	0.01	0.01	235

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.78	0.72	0.03	0.42	0.45	0.03	0.07	0.10	1,545
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.60	0.79	0.03	0.42	0.45	0.02	0.07	0.10	1,466
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.59	0.71	0.02	0.38	0.40	0.02	0.07	0.09	1,358
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.47	0.13	< 0.005	0.07	0.07	< 0.005	0.01	0.02	225

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222

Area	2.01	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.78	0.72	0.03	0.42	0.45	0.03	0.07	0.10	1,545
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Area	1.86	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.60	0.79	0.03	0.42	0.45	0.02	0.07	0.10	1,466
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.64	0.48	0.01	0.38	0.38	0.01	0.07	0.07	1,038
Area	1.93	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.18
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.59	0.71	0.02	0.38	0.40	0.02	0.07	0.09	1,358
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172
Area	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36
Energy	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.2
Water	—	—	—	—	—	—	—	—	0.65

Waste	—	—	—	—	—	—	—	—	6.72
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.47	0.13	< 0.005	0.07	0.07	< 0.005	0.01	0.02	225

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	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.76	0.49	0.01	0.42	0.43	0.01	0.07	0.08	1,222
Area	2.01	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.41
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.78	0.72	0.03	0.42	0.45	0.03	0.07	0.10	1,545
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.72	0.57	0.01	0.42	0.43	0.01	0.07	0.08	1,148
Area	1.86	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.60	0.79	0.03	0.42	0.45	0.02	0.07	0.10	1,466
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.64	0.48	0.01	0.38	0.38	0.01	0.07	0.07	1,038
Area	1.93	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.18

Energy	0.01	0.21	0.02	—	0.02	0.02	—	0.02	273
Water	—	—	—	—	—	—	—	—	3.95
Waste	—	—	—	—	—	—	—	—	40.6
Refrig.	—	—	—	—	—	—	—	—	0.53
Total	2.59	0.71	0.02	0.38	0.40	0.02	0.07	0.09	1,358
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.12	0.09	< 0.005	0.07	0.07	< 0.005	0.01	0.01	172
Area	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.36
Energy	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	45.2
Water	—	—	—	—	—	—	—	—	0.65
Waste	—	—	—	—	—	—	—	—	6.72
Refrig.	—	—	—	—	—	—	—	—	0.09
Total	0.47	0.13	< 0.005	0.07	0.07	< 0.005	0.01	0.02	225

3. Construction Emissions Details

3.1. Demolition (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	4.38	0.19	—	0.19	0.18	—	0.18	883
Demolition	—	—	—	3.25	3.25	—	0.49	0.49	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.18	0.01	—	0.01	0.01	—	0.01	36.3
Demolition	—	—	—	0.13	0.13	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.01
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.61	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	138
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.69
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.94

3.2. Demolition (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
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Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	4.68	0.08	—	0.08	0.07	—	0.07	883
Demolition	—	—	—	3.25	3.25	—	0.49	0.49	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.19	< 0.005	—	< 0.005	< 0.005	—	< 0.005	36.3
Demolition	—	—	—	0.13	0.13	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.01
Demolition	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	0.61	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	138
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.69

Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.94

3.3. Grading (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.14	0.14	—	0.14	0.13	—	0.13	624
Dust From Material Movement	—	—	—	0.33	0.33	—	0.04	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.17	0.01	—	0.01	0.01	—	0.01	34.2
Dust From Material Movement	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.66
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.26	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	58.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.20
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.53

3.4. Grading (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	2.02	0.02	—	0.02	0.02	—	0.02	624
Dust From Material Movement	—	—	—	0.13	0.13	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	34.2
Dust From Material Movement	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.66
Dust From Material Movement	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.26	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	58.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	3.20
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.53

3.5. Building Construction (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.20	0.17	—	0.17	0.16	—	0.16	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.20	0.17	—	0.17	0.16	—	0.16	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.89	0.05	—	0.05	0.04	—	0.04	185
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	0.01	—	0.01	0.01	—	0.01	30.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	12.1
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.70
Hauling	0.27	6.54	0.01	0.19	0.20	0.01	0.05	0.06	1,487
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.8
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.73
Hauling	0.24	6.85	0.01	0.19	0.20	0.01	0.05	0.06	1,496
Average Daily	—	—	—	—	—	—	—	—	—

Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.29
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.42
Hauling	0.07	1.86	< 0.005	0.05	0.05	< 0.005	0.01	0.02	414
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.54
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.40
Hauling	0.01	0.34	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	68.6

3.6. Building Construction (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.75	< 0.005	—	< 0.005	< 0.005	—	< 0.005	185
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	< 0.005	—	< 0.005	< 0.005	—	< 0.005	30.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.07	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	12.1
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.70
Hauling	0.27	6.54	0.01	0.19	0.20	0.01	0.05	0.06	1,487
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.8
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.73
Hauling	0.24	6.85	0.01	0.19	0.20	0.01	0.05	0.06	1,496
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.29
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.42
Hauling	0.07	1.86	< 0.005	0.05	0.05	< 0.005	0.01	0.02	414
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.54
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.40
Hauling	0.01	0.34	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	68.6

3.7. Building Construction (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	3.00	0.15	—	0.15	0.14	—	0.14	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	3.00	0.15	—	0.15	0.14	—	0.14	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	1.96	0.10	—	0.10	0.09	—	0.09	436
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.36	0.02	—	0.02	0.02	—	0.02	72.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.9
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.59
Hauling	0.26	6.47	0.01	0.19	0.20	0.01	0.05	0.06	1,464
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.6
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.62
Hauling	0.24	6.79	0.01	0.19	0.20	0.01	0.05	0.06	1,473
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	7.58
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.62
Hauling	0.17	4.33	0.01	0.12	0.13	0.01	0.03	0.04	959
Annual	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.26
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.93

Hauling	0.03	0.79	< 0.005	0.02	0.02	< 0.005	0.01	0.01	159
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3.8. Building Construction (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	2.70	0.01	—	0.01	0.01	—	0.01	667
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	1.77	0.01	—	0.01	0.01	—	0.01	436
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.32	< 0.005	—	< 0.005	< 0.005	—	< 0.005	72.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.9
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.59
Hauling	0.26	6.47	0.01	0.19	0.20	0.01	0.05	0.06	1,464

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.06	0.02	0.00	0.01	0.01	0.00	< 0.005	< 0.005	11.6
Vendor	< 0.005	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	8.62
Hauling	0.24	6.79	0.01	0.19	0.20	0.01	0.05	0.06	1,473
Average Daily	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	7.58
Vendor	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	5.62
Hauling	0.17	4.33	0.01	0.12	0.13	0.01	0.03	0.04	959
Annual	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.26
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.93
Hauling	0.03	0.79	< 0.005	0.02	0.02	< 0.005	0.01	0.01	159

3.9. Paving (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	5.70	0.27	—	0.27	0.25	—	0.25	1,120
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.20
Paving	0.00	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.52
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.65	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.15
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19

3.10. Paving (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	5.59	0.08	—	0.08	0.08	—	0.08	1,120
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.20
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.52
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.01	0.00	0.01	0.01	0.00	< 0.005	< 0.005	8.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.65	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	140
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.15
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19
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3.11. Architectural Coating (2024) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Architectural Coatings	104	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.84	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.52	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2024) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Architectural Coatings	104	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.84	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.52	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Worker	0.01	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Trenching (2023) - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.20	0.01	—	0.01	0.01	—	0.01	38.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.04

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Trenching (2023) - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.22	< 0.005	—	< 0.005	< 0.005	—	< 0.005	38.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.27
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.04
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/3/2023	4/21/2023	5.00	15.0	—
Grading	Grading	4/22/2023	5/19/2023	5.00	20.0	—
Building Construction	Building Construction	8/12/2023	11/29/2024	5.00	340	—
Paving	Paving	11/30/2024	12/4/2024	5.00	3.00	—
Architectural Coating	Architectural Coating	3/2/2024	3/16/2024	5.00	10.0	—
Pipelines/Undergrounding	Trenching	5/20/2023	8/11/2023	5.00	60.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	0.53	33.0	0.73
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	1.60	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	1.40	84.0	0.37
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Excavators	Diesel	Average	1.00	1.60	36.0	0.38
Grading	Scrapers	Diesel	Average	1.00	1.60	423	0.48
Pipelines/Undergrounding	Tractors/Loaders/Backhoes	Diesel	Average	1.00	0.53	84.0	0.37
Pipelines/Undergrounding	Excavators	Diesel	Average	2.00	0.53	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	0.53	33.0	0.73
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Interim	1.00	1.60	148	0.41
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	1.40	84.0	0.37
Building Construction	Forklifts	Diesel	Tier 4 Interim	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	6.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Interim	1.00	6.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	7.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Grading	Excavators	Diesel	Tier 4 Interim	1.00	1.60	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Interim	1.00	1.60	423	0.48
Pipelines/Undergrounding	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	0.53	84.0	0.37
Pipelines/Undergrounding	Excavators	Diesel	Tier 4 Interim	2.00	0.53	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
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Demolition	—	—	—	—
Demolition	Worker	12.5	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	37.1	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	15.7	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.9	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	3.10	0.50	HHDT,MHDT
Building Construction	Hauling	400	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	38.0	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	4.18	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Pipelines/Undergrounding	—	—	—	—
Pipelines/Undergrounding	Worker	7.50	0.50	LDA,LDT1,LDT2

Pipelines/Undergrounding	Vendor	—	0.50	HHDT,MHDT
Pipelines/Undergrounding	Hauling	0.00	0.50	HHDT
Pipelines/Undergrounding	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	0.50	LDA,LDT1,LDT2
Demolition	Vendor	—	0.50	HHDT,MHDT
Demolition	Hauling	37.1	0.50	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	0.50	LDA,LDT1,LDT2
Grading	Vendor	—	0.50	HHDT,MHDT
Grading	Hauling	15.7	0.50	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	20.9	0.50	LDA,LDT1,LDT2
Building Construction	Vendor	3.10	0.50	HHDT,MHDT
Building Construction	Hauling	400	0.50	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	0.50	LDA,LDT1,LDT2
Paving	Vendor	—	0.50	HHDT,MHDT
Paving	Hauling	38.0	0.50	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	4.18	0.50	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	0.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	0.50	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Pipelines/Undergrounding	—	—	—	—
Pipelines/Undergrounding	Worker	7.50	0.50	LDA,LDT1,LDT2
Pipelines/Undergrounding	Vendor	—	0.50	HHDT,MHDT
Pipelines/Undergrounding	Hauling	0.00	0.50	HHDT
Pipelines/Undergrounding	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	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)
Architectural Coating	149,101	49,700	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	48,351	—
Grading	—	2,500	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Condo/Townhouse	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	2.34	0.00	0.00
2024	0.00	2.34	0.00	0.00

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	212	236	182	77,150	1,378	1,533	1,182	500,918

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Condo/Townhouse	212	236	182	77,150	1,378	1,533	1,182	500,918

5.10. Operational Area Sources

5.10.1. Hearths

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	Campbell Default electricity provider is Silicon Valley Clean Energy
Land Use	Total lot acreage provided in construction worksheet from applicant. Building square footage calculated from applicant provided building plans.
Construction: Construction Phases	Start date and total workdays provided in construction worksheet, end dates from CalEEMod.
Construction: Off-Road Equipment	Provided in construction worksheet.
Operations: Hearths	No hearths.
Operations: Water and Waste Water	100% aerobic, no septic tanks or lagoons.
Construction: Trips and VMT	Building const = 200 concrete truck round trips, Paving = 160-cy of asphalt. Half mile trips for onsite travel.

Attachment 3: Project Construction Emissions and Health Risk Calculations

57-101 Gilman & 60 Dillon Avenue, Campbell, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m ²)	DPM Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2023	Construction	0.0128	CON_DPM	25.6	0.00778	9.80E-04	4,701	2.08E-07
2024	Construction	0.0201	CON_DPM	40.2	0.01222	1.54E-03	4,701	3.28E-07
Total		0.0329		65.7	0.0200	0.0025		

Construction Hours

hr/day = 9 (8am - 5pm)

days/yr = 365

hours/year = 3285

57-101 Gilman & 60 Dillon Avenue, Campbell, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	Area (ton/year)	PM2.5 Emissions			Modeled Area (m ²)	PM2.5 Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2023	Construction	CON_FUG	0.0073	14.6	0.00444	5.60E-04	4,701	1.19E-07
2024	Construction	CON_FUG	0.0055	11.0	0.00333	4.20E-04	4,701	8.93E-08
Total			0.0128	25.6	0.0078	0.0010		

Construction Hours

hr/day = 9 (8am - 5pm)

days/yr = 365

hours/year = 3285

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m ²)	DPM Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2023	Construction	0.0018	CON_DPM	3.7	0.00111	1.40E-04	4,701	2.98E-08
2024	Construction	0.0037	CON_DPM	7.3	0.00222	2.80E-04	4,701	5.96E-08
Total		0.0055		11.0	0.0033	0.0004		

Construction Hours

hr/day = 9 (8am - 5pm)
 days/yr = 365
 hours/year = 3285

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction Year	Activity	Area Source	Area (ton/year)	PM2.5 Emissions			Modeled Area (m ²)	PM2.5 Emission Rate g/s/m ²
				(lb/yr)	(lb/hr)	(g/s)		
2023	Construction	CON_FUG	0.0073	14.6	0.00444	5.60E-04	4,701	1.19E-07
2024	Construction	CON_FUG	0.0055	11.0	0.00333	4.20E-04	4,701	8.93E-08
Total			0.0128	25.6	0.0078	0.0010		

Construction Hours

hr/day = 9 (8am - 5pm)
 days/yr = 365
 hours/year = 3285

57-101 Gilman & 60 Dillon Avenue, Campbell, CA
 Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
	Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$)	Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$)			
	2023	0.0276	0.0142	4.91	0.01
2024	0.0436	0.0106	7.16	0.01	0.05
Total	-	-	12.07		-
Maximum	0.0436	0.0142	-	0.01	0.05

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations		Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
	Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$)	Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$)			
	2023	0.0040	0.0142	0.70	0.00
2024	0.0079	0.0106	1.30	0.00	0.03
Total	-	-	2.01	-	-
Maximum	0.0079	0.0142	-	0.00	0.03

- Tier 4 interim engines, and BMPs as Mitigation Measures.

Maximum Impacts at Nelly's Childcare and Preschool

Construction Year	Unmitigated Emissions			
	Maximum Concentrations		Child Cancer Risk (per million)	Maximum Annual PM2.5 Concentration ($\mu\text{g}/\text{m}^3$)
	Exhaust PM10/DPM ($\mu\text{g}/\text{m}^3$)	Fugitive PM2.5 ($\mu\text{g}/\text{m}^3$)		
2023	0.0002	0.0001	0.12	0.000
2024	0.0004	0.0001	0.20	0.000
Total	-	-	0.12	-
Maximum	0.0004	0.0001	-	0.000

**57-101 Gilman & 60 Dillon Avenue, Campbell, CA - Construction Impacts - Without Mitigation
 Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
 Impacts at Off-Site MEI Location - 4.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor	
			Year	Annual			Year	Annual		
0	0.25	-0.25 - 0*	2023	0.0276	10	0.38	2023	0.0276	-	-
1	1	0 - 1	2023	0.0276	10	4.54	2023	0.0276	1	0.08
2	1	1 - 2	2024	0.0436	10	7.16	2024	0.0436	1	0.13
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00
Total Increased Cancer Risk						12.07				0.20

Maximum		
Hazard Index	Fugitive PM2.5	Total PM2.5
0.01	0.014	0.04
0.01	0.011	0.05

* Third trimester of pregnancy

57-101 Gilman & 60 Dillon Avenue, Campbell, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum			
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Cancer Risk	DPM Conc (ug/m3)	Fugitive	Total
			Year	Annual			Year	Annual						
			Year	Annual	Factor		Year	Annual	Factor		Year	Annual	Factor	Hazard Index
0	0.25	-0.25 - 0*	2023	0.0193	10	0.26	2023	0.0193	-	-				
1	1	0 - 1	2023	0.0193	10	3.17	2023	0.0193	1	0.06	0.00	0.028	0.05	
2	1	1 - 2	2024	0.0305	10	5.01	2024	0.0305	1	0.09	0.01	0.021	0.05	
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00				
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00				
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00				
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00				
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00				
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00				
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00				
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00				
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00				
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00				
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00				
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00				
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00				
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00				
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00				
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00				
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00				
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00				
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00				
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00				
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00				
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00				
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00				
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00				
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00				
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00				
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00				
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00				
Total Increased Cancer Risk						8.44					0.14			

* Third trimester of pregnancy

**57-101 Gilman & 60 Dillon Avenue, Campbell, CA - Construction Impacts - With Mitigation
 Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
 Impacts at Off-Site MEI Location - 4.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual					
0	0.25	-0.25 - 0*	2023	0.0040	10	0.05	2023	0.0040	-	-			
1	1	0 - 1	2023	0.0040	10	0.65	2023	0.0040	1	0.01	0.00	0.014	0.02
2	1	1 - 2	2024	0.0079	10	1.30	2024	0.0079	1	0.02	0.00	0.011	0.02
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16 - 17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17 - 18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18 - 19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19 - 20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20 - 21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21 - 22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22 - 23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23 - 24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24 - 25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25 - 26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26 - 27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27 - 28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28 - 29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29 - 30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						2.01				0.03			

* Third trimester of pregnancy

**57-101 Gilman & 60 Dillon Avenue, Campbell, CA - Construction Impacts - With Mitigation
 Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
 Impacts at Off-Site MEI Location - 1.5 meter receptor height**

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 DBR = daily breathing rate (L/kg body weight-day)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual			Year	Annual					
0	0.25	-0.25 - 0*	2023	0.0028	10	0.04	2023	0.0028	-	-			
1	1	0 - 1	2023	0.0028	10	0.45	2023	0.0028	1	0.01	0.00	0.028	0.03
2	1	1 - 2	2024	0.0055	10	0.91	2024	0.0055	1	0.02	0.00	0.021	0.03
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						1.40				0.02			

* Third trimester of pregnancy

**57-101 Gilman & 60 Dillon Avenue, Campbell, CA - Construction Impacts - Without Mitigation
 Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
 Impacts at Nelly's Childcare and Preschool - 1 meter - Infant Exposure**

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹
 ASF = Age sensitivity factor for specified age group
 ED = Exposure duration (years)
 AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x SCAF x 8-Hr BR x A x (EF/365) x 10⁻⁶

Where: C_{air} = concentration in air (µg/m³)
 SCAF = School Child Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
 = (24/SHR) x (7days/SDay) x (SCHR/8 hrs)
 SHR = Hours/day of emission source operation
 SDay = Number of days per week of source operation
 SCHR = School operation hours while emission source in operation
 8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
 A = Inhalation absorption factor
 EF = Exposure frequency (days/year)
 10⁻⁶ = Conversion factor

Values

	Infant	Child
Age -->	0 - <2	2 - <16
Parameter		
ASF =	10	3
DPM CPF =	1.10E+00	1.10E+00
8-Hr BR* =	1200	520
SCHR =	9	9
SHR =	9	9
SDay =	5	5
A =	1	1
EF =	250	250
AT =	70	70
SCAF =	4.20	4.20

* 95th percentile 8-hr breathing rates for moderate intensity activities

Construction Cancer Risk by Year - Maximum Preschool Impact Receptor Location

Exposure Year	Exposure Duration (years)	Age	Child - Exposure Information			Child Cancer Risk (per million)	Maximum		
			DPM Conc (ug/m3)		Age*		Hazard Index	Fugitive PM2.5	Total PM2.5
			Year	Annual	Sensitivity Factor				
1	1	0 - 1	2023	0.0002	10	0.12	0.0000	0.000	0.00
2	1	1 - 2	2024	0.0004	10	0.20	0.0001	0.000	0.00
Total Increased Cancer Risk						0.32			

* Children assumed to be 1 months of age with 2 years of exposure to construction emissions

Attachment 4: Community Risk Modeling Information and Calculations

File Name: Local Roadways 2023.EF
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 2/2/2023 11:15:13 AM
 Area: Santa Clara (SF)
 Analysis Year: 2023
 Season: Annual

```

=====
Vehicle Category      VMT Fraction      Diesel VMT Fraction  Gas VMT Fraction
                    Across Category   Within Category      Within Category
Truck 1              0.015             0.487                0.513
Truck 2              0.020             0.938                0.047
Non-Truck            0.965             0.014                0.958
=====
  
```

```

=====
Road Type:           Major/Collector
Silt Loading Factor: CARB           0.032 g/m2
Precipitation Correction: CARB       P = 64 days      N = 365 days
=====
  
```

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

```

Pollutant Name      30 mph
PM2.5               0.001765
TOG                 0.036838
Diesel PM           0.000353
=====
  
```

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

```

Pollutant Name      Emission Factor
TOG                 1.357610
=====
  
```

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

```

Pollutant Name      Emission Factor
PM2.5               0.002108
=====
  
```

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

```

Pollutant Name      Emission Factor
PM2.5               0.016808
=====
  
```

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

```

Pollutant Name      Emission Factor
PM2.5               0.014855
=====
  
```

=====END=====

File Name: Local Roadways 2025.EF
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 2/2/2023 11:15:42 AM
 Area: Santa Clara (SF)
 Analysis Year: 2025
 Season: Annual

```

=====
Vehicle Category      VMT Fraction      Diesel VMT Fraction  Gas VMT Fraction
                      Across Category   Within Category      Within Category
Truck 1               0.015             0.502                0.498
Truck 2               0.020             0.936                0.048
Non-Truck             0.965             0.015                0.951
=====
  
```

```

=====
Road Type:           Major/Collector
Silt Loading Factor: CARB           0.032 g/m2
Precipitation Correction: CARB       P = 64 days      N = 365 days
=====
  
```

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

```

Pollutant Name      25 mph
PM2.5               0.002020
TOG                 0.040836
Diesel PM           0.000350
=====
  
```

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

```

Pollutant Name      Emission Factor
TOG                 1.255395
=====
  
```

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

```

Pollutant Name      Emission Factor
PM2.5               0.002108
=====
  
```

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

```

Pollutant Name      Emission Factor
PM2.5               0.016801
=====
  
```

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

```

Pollutant Name      Emission Factor
PM2.5               0.014826
=====
  
```

=====END=====

File Name: State Route 17 2023.EF
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 2/6/2023 10:48:43 AM
 Area: Santa Clara (SF)
 Analysis Year: 2023
 Season: Annual

```

=====
Vehicle Category      VMT Fraction      Diesel VMT Fraction  Gas VMT Fraction
                    Across Category   Within Category      Within Category
    Truck 1           0.016             0.487                0.513
    Truck 2           0.015             0.938                0.047
    Non-Truck         0.969             0.014                0.958
=====
  
```

```

=====
Road Type:           Freeway
Silt Loading Factor: CARB           0.015 g/m2
Precipitation Correction: CARB       P = 64 days      N = 365 days
=====
  
```

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

```

Pollutant Name      65 mph
    PM2.5           0.001748
    TOG             0.029694
    Diesel PM       0.000641
=====
  
```

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

```

Pollutant Name      Emission Factor
    TOG              1.366181
=====
  
```

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

```

Pollutant Name      Emission Factor
    PM2.5           0.002085
=====
  
```

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

```

Pollutant Name      Emission Factor
    PM2.5           0.016718
=====
  
```

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

```

Pollutant Name      Emission Factor
    PM2.5           0.007189
=====
  
```

=====END=====

File Name: State Route 17 2025.EF
 CT-EMFAC2017 Version: 1.0.2.27401
 Run Date: 2/6/2023 10:49:08 AM
 Area: Santa Clara (SF)
 Analysis Year: 2025
 Season: Annual

```

=====
Vehicle Category      VMT Fraction      Diesel VMT Fraction  Gas VMT Fraction
                      Across Category   Within Category      Within Category
    Truck 1           0.016             0.502                0.498
    Truck 2           0.015             0.936                0.048
    Non-Truck         0.969             0.015                0.951
=====
  
```

```

=====
Road Type:           Freeway
Silt Loading Factor: CARB           0.015 g/m2
Precipitation Correction: CARB       P = 64 days      N = 365 days
=====
  
```

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

```

Pollutant Name      65 mph
    PM2.5           0.001642
    TOG             0.026264
    Diesel PM       0.000625
=====
  
```

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

```

Pollutant Name      Emission Factor
    TOG              1.263289
=====
  
```

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

```

Pollutant Name      Emission Factor
    PM2.5           0.002085
=====
  
```

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

```

Pollutant Name      Emission Factor
    PM2.5           0.016712
=====
  
```

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

```

Pollutant Name      Emission Factor
    PM2.5           0.007174
=====
  
```

=====END=====

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential
 Cumulative Operation - State Route 17
 DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
 Year = 2023**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_17	State Route 17 Northbound	NB	4	602.1	0.37	20.6	67.7	3.4	25	62,830
DPM_SB_17	State Route 17 Southbound	SB	4	640.0	0.40	20.6	67.7	3.4	25	62,830
									Total	125,660

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMI)	0.00064			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM NB 17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	532	3.55E-05	9	6.31%	3964	2.64E-04	17	6.09%	3826	2.55E-04
2	0.56%	352	2.35E-05	10	6.20%	3894	2.59E-04	18	6.01%	3777	2.52E-04
3	0.51%	319	2.12E-05	11	6.11%	3840	2.56E-04	19	5.12%	3216	2.14E-04
4	0.78%	487	3.25E-05	12	5.95%	3739	2.49E-04	20	4.10%	2578	1.72E-04
5	2.06%	1295	8.62E-05	13	5.88%	3696	2.46E-04	21	3.42%	2146	1.43E-04
6	4.13%	2598	1.73E-04	14	5.90%	3709	2.47E-04	22	3.00%	1885	1.26E-04
7	5.19%	3263	2.17E-04	15	6.05%	3800	2.53E-04	23	2.28%	1434	9.55E-05
8	5.95%	3740	2.49E-04	16	6.10%	3835	2.55E-04	24	1.44%	904	6.02E-05
									Total	62,830	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM SB 17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.32%	832	5.89E-05	9	5.48%	3446	2.44E-04	17	6.51%	4089	2.90E-04
2	0.95%	597	4.22E-05	10	5.56%	3491	2.47E-04	18	6.38%	4009	2.84E-04
3	0.83%	520	3.68E-05	11	5.76%	3622	2.56E-04	19	5.83%	3663	2.59E-04
4	0.84%	525	3.72E-05	12	5.97%	3750	2.66E-04	20	4.98%	3129	2.22E-04
5	1.12%	704	4.99E-05	13	6.18%	3885	2.75E-04	21	4.20%	2641	1.87E-04
6	1.97%	1237	8.76E-05	14	6.32%	3970	2.81E-04	22	3.60%	2263	1.60E-04
7	3.25%	2040	1.44E-04	15	6.74%	4233	3.00E-04	23	2.79%	1753	1.24E-04
8	4.85%	3045	2.16E-04	16	6.60%	4145	2.93E-04	24	1.98%	1241	8.79E-05
									Total	62,830	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential
 Cumulative Operation - State Route 17
 PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
 Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5 NB 17	State Route 17 Northbound	NB	4	602.1	0.37	20.6	68	1.3	25	62,830
PM2.5 SB 17	State Route 17 Southbound	SB	4	640.0	0.40	20.6	68	1.3	25	62,830
									Total	125,660

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.001748			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5 NB 17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	532	9.67E-05	9	6.31%	3964	7.20E-04	17	6.09%	3826	6.95E-04
2	0.56%	352	6.40E-05	10	6.20%	3894	7.07E-04	18	6.01%	3777	6.86E-04
3	0.51%	319	5.79E-05	11	6.11%	3840	6.98E-04	19	5.12%	3216	5.84E-04
4	0.78%	487	8.85E-05	12	5.95%	3739	6.79E-04	20	4.10%	2578	4.68E-04
5	2.06%	1295	2.35E-04	13	5.88%	3696	6.71E-04	21	3.42%	2146	3.90E-04
6	4.13%	2598	4.72E-04	14	5.90%	3709	6.74E-04	22	3.00%	1885	3.42E-04
7	5.19%	3263	5.93E-04	15	6.05%	3800	6.90E-04	23	2.28%	1434	2.61E-04
8	5.95%	3740	6.79E-04	16	6.10%	3835	6.97E-04	24	1.44%	904	1.64E-04
Total										62,830	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5 SB 17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.32%	832	1.61E-04	9	5.48%	3446	6.65E-04	17	6.51%	4089	7.90E-04
2	0.95%	597	1.15E-04	10	5.56%	3491	6.74E-04	18	6.38%	4009	7.74E-04
3	0.83%	520	1.00E-04	11	5.76%	3622	6.99E-04	19	5.83%	3663	7.07E-04
4	0.84%	525	1.01E-04	12	5.97%	3750	7.24E-04	20	4.98%	3129	6.04E-04
5	1.12%	704	1.36E-04	13	6.18%	3885	7.50E-04	21	4.20%	2641	5.10E-04
6	1.97%	1237	2.39E-04	14	6.32%	3970	7.67E-04	22	3.60%	2263	4.37E-04
7	3.25%	2040	3.94E-04	15	6.74%	4233	8.17E-04	23	2.79%	1753	3.38E-04
8	4.85%	3045	5.88E-04	16	6.60%	4145	8.00E-04	24	1.98%	1241	2.40E-04
Total										62,830	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential
 Cumulative Operation - State Route 17
 TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
 Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_17	State Route 17 Northbound	NB	4	602.1	0.37	20.6	68	1.3	25	62,830
TEXH_SB_17	State Route 17 Southbound	SB	4	640.0	0.40	20.6	68	1.3	25	62,830
									Total	125,660

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.02969			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH NB 17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	532	1.64E-03	9	6.31%	3964	1.22E-02	17	6.09%	3826	1.18E-02
2	0.56%	352	1.09E-03	10	6.20%	3894	1.20E-02	18	6.01%	3777	1.17E-02
3	0.51%	319	9.83E-04	11	6.11%	3840	1.19E-02	19	5.12%	3216	9.93E-03
4	0.78%	487	1.50E-03	12	5.95%	3739	1.15E-02	20	4.10%	2578	7.96E-03
5	2.06%	1295	3.99E-03	13	5.88%	3696	1.14E-02	21	3.42%	2146	6.62E-03
6	4.13%	2598	8.02E-03	14	5.90%	3709	1.14E-02	22	3.00%	1885	5.82E-03
7	5.19%	3263	1.01E-02	15	6.05%	3800	1.17E-02	23	2.28%	1434	4.43E-03
8	5.95%	3740	1.15E-02	16	6.10%	3835	1.18E-02	24	1.44%	904	2.79E-03
Total										62,830	

2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH SB 17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.85%	532	1.75E-03	9	6.31%	3964	1.30E-02	17	6.09%	3826	1.26E-02
2	0.56%	352	1.16E-03	10	6.20%	3894	1.28E-02	18	6.01%	3777	1.24E-02
3	0.51%	319	1.05E-03	11	6.11%	3840	1.26E-02	19	5.12%	3216	1.06E-02
4	0.78%	487	1.60E-03	12	5.95%	3739	1.23E-02	20	4.10%	2578	8.46E-03
5	2.06%	1295	4.25E-03	13	5.88%	3696	1.21E-02	21	3.42%	2146	7.04E-03
6	4.13%	2598	8.52E-03	14	5.90%	3709	1.22E-02	22	3.00%	1885	6.18E-03
7	5.19%	3263	1.07E-02	15	6.05%	3800	1.25E-02	23	2.28%	1434	4.70E-03
8	5.95%	3740	1.23E-02	16	6.10%	3835	1.26E-02	24	1.44%	904	2.97E-03
Total										62,830	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential

Cumulative Operation - State Route 17

TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions

Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_17	State Route 17 Northbound	NB	4	602.1	0.37	20.6	68	1.3	25	62,830
TEVAP_SB_17	State Route 17 Southbound	SB	4	640.0	0.40	20.6	68	1.3	25	62,830
									Total	125,660

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle per Hour (g/hour)	1.36618			
Emissions per Vehicle per Mile (g/VMI)	0.02102			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	532	1.16E-03	9	6.31%	3964	8.66E-03	17	6.09%	3826	8.36E-03
2	0.56%	352	7.70E-04	10	6.20%	3894	8.51E-03	18	6.01%	3777	8.25E-03
3	0.51%	319	6.96E-04	11	6.11%	3840	8.39E-03	19	5.12%	3216	7.03E-03
4	0.78%	487	1.06E-03	12	5.95%	3739	8.17E-03	20	4.10%	2578	5.63E-03
5	2.06%	1295	2.83E-03	13	5.88%	3696	8.07E-03	21	3.42%	2146	4.69E-03
6	4.13%	2598	5.67E-03	14	5.90%	3709	8.10E-03	22	3.00%	1885	4.12E-03
7	5.19%	3263	7.13E-03	15	6.05%	3800	8.30E-03	23	2.28%	1434	3.13E-03
8	5.95%	3740	8.17E-03	16	6.10%	3835	8.38E-03	24	1.44%	904	1.98E-03
Total										62,830	

2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.85%	532	1.24E-03	9	6.31%	3964	9.20E-03	17	6.09%	3826	8.88E-03
2	0.56%	352	8.18E-04	10	6.20%	3894	9.04E-03	18	6.01%	3777	8.77E-03
3	0.51%	319	7.40E-04	11	6.11%	3840	8.92E-03	19	5.12%	3216	7.47E-03
4	0.78%	487	1.13E-03	12	5.95%	3739	8.68E-03	20	4.10%	2578	5.99E-03
5	2.06%	1295	3.01E-03	13	5.88%	3696	8.58E-03	21	3.42%	2146	4.98E-03
6	4.13%	2598	6.03E-03	14	5.90%	3709	8.61E-03	22	3.00%	1885	4.38E-03
7	5.19%	3263	7.58E-03	15	6.05%	3800	8.82E-03	23	2.28%	1434	3.33E-03
8	5.95%	3740	8.68E-03	16	6.10%	3835	8.90E-03	24	1.44%	904	2.10E-03
Total										62,830	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential

Cumulative Operation - State Route 17

Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions

Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_17	State Route 17 Northbound	NB	4	602.1	0.37	20.6	68	1.3	25	62,830
FUG_SB_17	State Route 17 Southbound	SB	4	640.0	0.40	20.6	68	1.3	25	62,830
									Total	125,660

Emission Factors - Fugitive PM2.5

Speed Category Travel Speed (mph)	1 65	2	3	4
Tire Wear - Emissions per Vehicle (g/VMT)	0.00209			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01672			
Road Dust - Emissions per Vehicle (g/VMT)	0.00719			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02599			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	532	1.44E-03	9	6.31%	3964	1.07E-02	17	6.09%	3826	1.03E-02
2	0.56%	352	9.52E-04	10	6.20%	3894	1.05E-02	18	6.01%	3777	1.02E-02
3	0.51%	319	8.61E-04	11	6.11%	3840	1.04E-02	19	5.12%	3216	8.69E-03
4	0.78%	487	1.32E-03	12	5.95%	3739	1.01E-02	20	4.10%	2578	6.96E-03
5	2.06%	1295	3.50E-03	13	5.88%	3696	9.98E-03	21	3.42%	2146	5.80E-03
6	4.13%	2598	7.02E-03	14	5.90%	3709	1.00E-02	22	3.00%	1885	5.09E-03
7	5.19%	3263	8.81E-03	15	6.05%	3800	1.03E-02	23	2.28%	1434	3.87E-03
8	5.95%	3740	1.01E-02	16	6.10%	3835	1.04E-02	24	1.44%	904	2.44E-03
Total										62,830	

2023 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.85%	532	1.53E-03	9	6.31%	3964	1.14E-02	17	6.09%	3826	1.10E-02
2	0.56%	352	1.01E-03	10	6.20%	3894	1.12E-02	18	6.01%	3777	1.08E-02
3	0.51%	319	9.15E-04	11	6.11%	3840	1.10E-02	19	5.12%	3216	9.23E-03
4	0.78%	487	1.40E-03	12	5.95%	3739	1.07E-02	20	4.10%	2578	7.40E-03
5	2.06%	1295	3.72E-03	13	5.88%	3696	1.06E-02	21	3.42%	2146	6.16E-03
6	4.13%	2598	7.46E-03	14	5.90%	3709	1.06E-02	22	3.00%	1885	5.41E-03
7	5.19%	3263	9.37E-03	15	6.05%	3800	1.09E-02	23	2.28%	1434	4.12E-03
8	5.95%	3740	1.07E-02	16	6.10%	3835	1.10E-02	24	1.44%	904	2.60E-03
Total										62,830	

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential
 Cumulative Operation - E Campbell Ave
 DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
 Year = 2023**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	43.7	3.4	30	10,122
DPM_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	43.7	3.4	30	10,122
									Total	20,244

Emission Factors

Speed Category Travel Speed (mph)	1	2	3	4
30	0.00035			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and DPM Emissions - DPM_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	396	1.88E-05	9	6.50%	658	3.12E-05	17	5.58%	565	2.68E-05
2	2.59%	262	1.24E-05	10	7.36%	745	3.54E-05	18	3.28%	332	1.58E-05
3	2.88%	291	1.38E-05	11	6.33%	640	3.04E-05	19	2.36%	239	1.13E-05
4	3.34%	338	1.60E-05	12	6.84%	693	3.29E-05	20	0.92%	93	4.42E-06
5	2.19%	221	1.05E-05	13	6.15%	623	2.96E-05	21	2.99%	303	1.44E-05
6	3.39%	343	1.63E-05	14	6.15%	623	2.96E-05	22	4.14%	419	1.99E-05
7	5.98%	605	2.87E-05	15	5.23%	530	2.51E-05	23	2.47%	250	1.19E-05
8	4.66%	471	2.24E-05	16	3.91%	396	1.88E-05	24	0.86%	87	4.15E-06
Total										10,122	

2023 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	396	1.65E-05	9	6.50%	658	2.74E-05	17	5.58%	565	2.35E-05
2	2.59%	262	1.09E-05	10	7.36%	745	3.10E-05	18	3.28%	332	1.38E-05
3	2.88%	291	1.21E-05	11	6.33%	640	2.67E-05	19	2.36%	239	9.93E-06
4	3.34%	338	1.41E-05	12	6.84%	693	2.88E-05	20	0.92%	93	3.88E-06
5	2.19%	221	9.21E-06	13	6.15%	623	2.59E-05	21	2.99%	303	1.26E-05
6	3.39%	343	1.43E-05	14	6.15%	623	2.59E-05	22	4.14%	419	1.74E-05
7	5.98%	605	2.52E-05	15	5.23%	530	2.20E-05	23	2.47%	250	1.04E-05
8	4.66%	471	1.96E-05	16	3.91%	396	1.65E-05	24	0.86%	87	3.63E-06
Total										10,122	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential
 Cumulative Operation - E Campbell Ave
 PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
 Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5 EB CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	30	10,122
PM2.5 WB CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	30	10,122
									Total	20,244

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.001765			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5 EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	2.77E-05	9	7.11%	720	1.71E-04	17	7.38%	747	1.77E-04
2	0.42%	42	1.00E-05	10	4.39%	445	1.06E-04	18	8.17%	827	1.96E-04
3	0.41%	41	9.79E-06	11	4.66%	472	1.12E-04	19	5.70%	577	1.37E-04
4	0.26%	27	6.32E-06	12	5.89%	596	1.41E-04	20	4.27%	433	1.03E-04
5	0.50%	51	1.20E-05	13	6.15%	623	1.48E-04	21	3.26%	330	7.83E-05
6	0.90%	92	2.17E-05	14	6.04%	611	1.45E-04	22	3.30%	334	7.93E-05
7	3.79%	384	9.11E-05	15	7.01%	710	1.68E-04	23	2.46%	249	5.91E-05
8	7.76%	786	1.87E-04	16	7.14%	722	1.71E-04	24	1.86%	189	4.48E-05
Total										10,122	

2023 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5 WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	2.43E-05	9	7.11%	720	1.50E-04	17	7.38%	747	1.56E-04
2	0.42%	42	8.80E-06	10	4.39%	445	9.25E-05	18	8.17%	827	1.72E-04
3	0.41%	41	8.59E-06	11	4.66%	472	9.83E-05	19	5.70%	577	1.20E-04
4	0.26%	27	5.54E-06	12	5.89%	596	1.24E-04	20	4.27%	433	9.00E-05
5	0.50%	51	1.05E-05	13	6.15%	623	1.30E-04	21	3.26%	330	6.87E-05
6	0.90%	92	1.91E-05	14	6.04%	611	1.27E-04	22	3.30%	334	6.95E-05
7	3.79%	384	7.99E-05	15	7.01%	710	1.48E-04	23	2.46%	249	5.18E-05
8	7.76%	786	1.64E-04	16	7.14%	722	1.50E-04	24	1.86%	189	3.93E-05
Total										10,122	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential
Cumulative Operation - E Campbell Ave
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	30	10,122
TEXH_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	30	10,122
									Total	20,244

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle (g/VMT)	0.03684			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	5.78E-04	9	7.11%	720	3.57E-03	17	7.38%	747	3.70E-03
2	0.42%	42	2.09E-04	10	4.39%	445	2.20E-03	18	8.17%	827	4.10E-03
3	0.41%	41	2.04E-04	11	4.66%	472	2.34E-03	19	5.70%	577	2.86E-03
4	0.26%	27	1.32E-04	12	5.89%	596	2.95E-03	20	4.27%	433	2.14E-03
5	0.50%	51	2.51E-04	13	6.15%	623	3.09E-03	21	3.26%	330	1.63E-03
6	0.90%	92	4.53E-04	14	6.04%	611	3.03E-03	22	3.30%	334	1.65E-03
7	3.79%	384	1.90E-03	15	7.01%	710	3.52E-03	23	2.46%	249	1.23E-03
8	7.76%	786	3.89E-03	16	7.14%	722	3.58E-03	24	1.86%	189	9.35E-04
Total										10,122	

2023 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	5.06E-04	9	7.11%	720	3.13E-03	17	7.38%	747	3.25E-03
2	0.42%	42	1.84E-04	10	4.39%	445	1.93E-03	18	8.17%	827	3.59E-03
3	0.41%	41	1.79E-04	11	4.66%	472	2.05E-03	19	5.70%	577	2.50E-03
4	0.26%	27	1.16E-04	12	5.89%	596	2.59E-03	20	4.27%	433	1.88E-03
5	0.50%	51	2.20E-04	13	6.15%	623	2.70E-03	21	3.26%	330	1.43E-03
6	0.90%	92	3.98E-04	14	6.04%	611	2.65E-03	22	3.30%	334	1.45E-03
7	3.79%	384	1.67E-03	15	7.01%	710	3.08E-03	23	2.46%	249	1.08E-03
8	7.76%	786	3.41E-03	16	7.14%	722	3.14E-03	24	1.86%	189	8.20E-04
Total										10,122	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential

Cumulative Operation - E Campbell Ave

TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions

Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	30	10,122
TEVAP_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	30	10,122
									Total	20,244

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	30			
Emissions per Vehicle per Hour (g/hour)	1.35761			
Emissions per Vehicle per Mile (g/VMI)	0.04525			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	7.09E-04	9	7.11%	720	4.38E-03	17	7.38%	747	4.55E-03
2	0.42%	42	2.57E-04	10	4.39%	445	2.71E-03	18	8.17%	827	5.03E-03
3	0.41%	41	2.51E-04	11	4.66%	472	2.87E-03	19	5.70%	577	3.51E-03
4	0.26%	27	1.62E-04	12	5.89%	596	3.63E-03	20	4.27%	433	2.63E-03
5	0.50%	51	3.08E-04	13	6.15%	623	3.79E-03	21	3.26%	330	2.01E-03
6	0.90%	92	5.57E-04	14	6.04%	611	3.72E-03	22	3.30%	334	2.03E-03
7	3.79%	384	2.34E-03	15	7.01%	710	4.32E-03	23	2.46%	249	1.52E-03
8	7.76%	786	4.78E-03	16	7.14%	722	4.40E-03	24	1.86%	189	1.15E-03
Total										10,122	

2023 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	6.22E-04	9	7.11%	720	3.84E-03	17	7.38%	747	3.99E-03
2	0.42%	42	2.26E-04	10	4.39%	445	2.37E-03	18	8.17%	827	4.41E-03
3	0.41%	41	2.20E-04	11	4.66%	472	2.52E-03	19	5.70%	577	3.08E-03
4	0.26%	27	1.42E-04	12	5.89%	596	3.18E-03	20	4.27%	433	2.31E-03
5	0.50%	51	2.70E-04	13	6.15%	623	3.32E-03	21	3.26%	330	1.76E-03
6	0.90%	92	4.88E-04	14	6.04%	611	3.26E-03	22	3.30%	334	1.78E-03
7	3.79%	384	2.05E-03	15	7.01%	710	3.79E-03	23	2.46%	249	1.33E-03
8	7.76%	786	4.19E-03	16	7.14%	722	3.85E-03	24	1.86%	189	1.01E-03
Total										10,122	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - Off-Site Residential

Cumulative Operation - E Campbell Ave

Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions

Year = 2023

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	30	10,122
FUG_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	30	10,122
									Total	20,244

Emission Factors - Fugitive PM2.5

Speed Category Travel Speed (mph)	1	2	3	4
30				
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01681			
Road Dust - Emissions per Vehicle (g/VMT)	0.01486			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03377			

Emission Factors from CT-EMFAC2017

2023 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	117	5.29E-04	9	7.11%	720	3.27E-03	17	7.38%	747	3.39E-03
2	0.42%	42	1.92E-04	10	4.39%	445	2.02E-03	18	8.17%	827	3.76E-03
3	0.41%	41	1.87E-04	11	4.66%	472	2.14E-03	19	5.70%	577	2.62E-03
4	0.26%	27	1.21E-04	12	5.89%	596	2.71E-03	20	4.27%	433	1.96E-03
5	0.50%	51	2.30E-04	13	6.15%	623	2.83E-03	21	3.26%	330	1.50E-03
6	0.90%	92	4.16E-04	14	6.04%	611	2.78E-03	22	3.30%	334	1.52E-03
7	3.79%	384	1.74E-03	15	7.01%	710	3.22E-03	23	2.46%	249	1.13E-03
8	7.76%	786	3.57E-03	16	7.14%	722	3.28E-03	24	1.86%	189	8.57E-04
Total										10,122	

2023 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	117	4.64E-04	9	7.11%	720	2.87E-03	17	7.38%	747	2.98E-03
2	0.42%	42	1.68E-04	10	4.39%	445	1.77E-03	18	8.17%	827	3.29E-03
3	0.41%	41	1.64E-04	11	4.66%	472	1.88E-03	19	5.70%	577	2.30E-03
4	0.26%	27	1.06E-04	12	5.89%	596	2.37E-03	20	4.27%	433	1.72E-03
5	0.50%	51	2.02E-04	13	6.15%	623	2.48E-03	21	3.26%	330	1.31E-03
6	0.90%	92	3.65E-04	14	6.04%	611	2.43E-03	22	3.30%	334	1.33E-03
7	3.79%	384	1.53E-03	15	7.01%	710	2.83E-03	23	2.46%	249	9.91E-04
8	7.76%	786	3.13E-03	16	7.14%	722	2.88E-03	24	1.86%	189	7.51E-04
Total										10,122	

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - State Route 17 - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptors (1.5 & 4.5 meter receptor height)**

Emission Year 2023
Receptor Information Construction Residential MEI receptor
 Number of Receptors 2
 Receptor Height 1.5 & 4.5 meters
 Receptor Distances At Construction Residential MEI location

Meteorological Conditions
 BAAQMD San Jose Airport Met Data 2013-2017
 Land Use Classification Urban
 Wind Speed Variable
 Wind Direction Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0037	0.1789	0.1267

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.1748	0.1638	0.0110

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - Campbell Avenue - TACs & PM2.5:
 AERMOD Risk Modeling Parameters and Maximum Concentrations
 at Construction Residential MEI Receptors (1.5 & 4.5 meter receptor height)**

Emission Year 2023
Receptor Information Construction Residential MEI receptor
 Number of Receptors 2
 Receptor Height 1.5 & 4.5 meters
 Receptor Distances At Construction Residential MEI location

Meteorological Conditions
 BAAQMD San Jose Airport Met Data 2013-2017
 Land Use Classification Urban
 Wind Speed Variable
 Wind Direction Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0006	0.0564	0.0694

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0585	0.0556	0.0029

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - State Route 17 Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 & 4.5 meter receptor height
30 Year Residential Exposure**

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁶

Where: C_{air} = concentration in air (µg/m³)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Maximum - Exposure Information				Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
1	1	0 - 1	2023	10	0.0037	0.1789	0.1267	0.611	0.168	0.0070	0.79
2	1	1 - 2	2024	10	0.0037	0.1789	0.1267	0.611	0.168	0.0070	0.79
3	1	2 - 3	2025	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
4	1	3 - 4	2026	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
5	1	4 - 5	2027	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
6	1	5 - 6	2028	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
7	1	6 - 7	2029	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
8	1	7 - 8	2030	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
9	1	8 - 9	2031	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
10	1	9 - 10	2032	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
11	1	10 - 11	2033	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
12	1	11 - 12	2034	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
13	1	12 - 13	2035	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
14	1	13 - 14	2036	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
15	1	14 - 15	2037	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
16	1	15 - 16	2038	3	0.0037	0.1789	0.1267	0.096	0.026	0.0011	0.12
17	1	16-17	2039	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
18	1	17-18	2040	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
19	1	18-19	2041	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
20	1	19-20	2042	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
21	1	20-21	2043	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
22	1	21-22	2044	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
23	1	22-23	2045	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
24	1	23-24	2046	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
25	1	24-25	2047	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
26	1	25-26	2048	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
27	1	26-27	2049	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
28	1	27-28	2050	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
29	1	28-29	2051	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
30	1	29-30	2052	1	0.0037	0.1789	0.1267	0.011	0.003	0.0001	0.01
Total Increased Cancer Risk								2.77	0.760	0.032	3.56

* Third trimester of pregnancy

Maximum
 Hazard Index 0.0007
 Fugitive PM2.5 0.16
 Total PM2.5 0.17

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - E Campbell Avenue Traffic Cancer Risk
Impacts at Construction Residential MEI - 1.5 & 4.5 meter receptor height
30 Year Residential Exposure**

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁶

Where: C_{air} = concentration in air (µg/m³)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Maximum - Exposure Information				Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
1	1	0 - 1	2023	10	0.0006	0.0564	0.0694	0.090	0.053	0.0038	0.15
2	1	1 - 2	2024	10	0.0006	0.0564	0.0694	0.090	0.053	0.0038	0.15
3	1	2 - 3	2025	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
4	1	3 - 4	2026	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
5	1	4 - 5	2027	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
6	1	5 - 6	2028	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
7	1	6 - 7	2029	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
8	1	7 - 8	2030	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
9	1	8 - 9	2031	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
10	1	9 - 10	2032	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
11	1	10 - 11	2033	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
12	1	11 - 12	2034	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
13	1	12 - 13	2035	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
14	1	13 - 14	2036	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
15	1	14 - 15	2037	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
16	1	15 - 16	2038	3	0.0006	0.0564	0.0694	0.014	0.008	0.0006	0.02
17	1	16-17	2039	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
18	1	17-18	2040	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
19	1	18-19	2041	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
20	1	19-20	2042	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
21	1	20-21	2043	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
22	1	21-22	2044	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
23	1	22-23	2045	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
24	1	23-24	2046	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
25	1	24-25	2047	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
26	1	25-26	2048	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
27	1	26-27	2049	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
28	1	27-28	2050	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
29	1	28-29	2051	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
30	1	29-30	2052	1	0.0006	0.0564	0.0694	0.002	0.001	0.0001	0.00
Total Increased Cancer Risk								0.41	0.240	0.017	0.67

* Third trimester of pregnancy

Maximum
Hazard Index 0.0001
Fugitive PM2.5 0.06
Total PM2.5 0.06

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
 Cumulative Operation - State Route 17
 DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
 Year = 2025**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_17	State Route 17 Northbound	NB	3	602.1	0.37	17.0	55.7	3.4	65	64,050
DPM_SB_17	State Route 17 Southbound	SB	3	640.0	0.40	17.0	55.7	3.4	65	64,050
									Total	128,100

Emission Factors

Speed Category Travel Speed (mph)	1	2	3	4
65	0.00063			
Emissions per Vehicle (g/VMI)				

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and DPM Emissions - DPM_NB_17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	543	3.53E-05	9	6.31%	4041	2.62E-04	17	6.09%	3901	2.53E-04
2	0.56%	359	2.33E-05	10	6.20%	3970	2.58E-04	18	6.01%	3851	2.50E-04
3	0.51%	325	2.11E-05	11	6.11%	3915	2.54E-04	19	5.12%	3279	2.13E-04
4	0.78%	497	3.23E-05	12	5.95%	3811	2.48E-04	20	4.10%	2628	1.71E-04
5	2.06%	1320	8.57E-05	13	5.88%	3767	2.45E-04	21	3.42%	2188	1.42E-04
6	4.13%	2648	1.72E-04	14	5.90%	3781	2.46E-04	22	3.00%	1921	1.25E-04
7	5.19%	3326	2.16E-04	15	6.05%	3874	2.52E-04	23	2.28%	1462	9.50E-05
8	5.95%	3812	2.48E-04	16	6.10%	3910	2.54E-04	24	1.44%	922	5.99E-05
Total										64,050	

2025 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.32%	849	5.86E-05	9	5.48%	3513	2.43E-04	17	6.51%	4169	2.88E-04
2	0.95%	608	4.20E-05	10	5.56%	3559	2.46E-04	18	6.38%	4087	2.82E-04
3	0.83%	530	3.66E-05	11	5.76%	3692	2.55E-04	19	5.83%	3734	2.58E-04
4	0.84%	536	3.70E-05	12	5.97%	3823	2.64E-04	20	4.98%	3190	2.20E-04
5	1.12%	718	4.96E-05	13	6.18%	3960	2.73E-04	21	4.20%	2692	1.86E-04
6	1.97%	1261	8.71E-05	14	6.32%	4047	2.79E-04	22	3.60%	2307	1.59E-04
7	3.25%	2080	1.44E-04	15	6.74%	4315	2.98E-04	23	2.79%	1787	1.23E-04
8	4.85%	3104	2.14E-04	16	6.60%	4225	2.92E-04	24	1.98%	1265	8.73E-05
Total										64,050	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
 Cumulative Operation - State Route 17
 PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
 Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5 NB 17	State Route 17 Northbound	NB	3	602.1	0.37	17.0	56	1.3	65	64,050
PM2.5 SB 17	State Route 17 Southbound	SB	3	640.0	0.40	17.0	56	1.3	65	64,050
									Total	128,100

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.001642			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5 NB 17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	543	9.26E-05	9	6.31%	4041	6.89E-04	17	6.09%	3901	6.66E-04
2	0.56%	359	6.13E-05	10	6.20%	3970	6.77E-04	18	6.01%	3851	6.57E-04
3	0.51%	325	5.54E-05	11	6.11%	3915	6.68E-04	19	5.12%	3279	5.60E-04
4	0.78%	497	8.48E-05	12	5.95%	3811	6.50E-04	20	4.10%	2628	4.48E-04
5	2.06%	1320	2.25E-04	13	5.88%	3767	6.43E-04	21	3.42%	2188	3.73E-04
6	4.13%	2648	4.52E-04	14	5.90%	3781	6.45E-04	22	3.00%	1921	3.28E-04
7	5.19%	3326	5.68E-04	15	6.05%	3874	6.61E-04	23	2.28%	1462	2.49E-04
8	5.95%	3812	6.51E-04	16	6.10%	3910	6.67E-04	24	1.44%	922	1.57E-04
Total										64,050	

2025 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5 SB 17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.32%	849	1.54E-04	9	5.48%	3513	6.37E-04	17	6.51%	4169	7.56E-04
2	0.95%	608	1.10E-04	10	5.56%	3559	6.46E-04	18	6.38%	4087	7.41E-04
3	0.83%	530	9.61E-05	11	5.76%	3692	6.70E-04	19	5.83%	3734	6.77E-04
4	0.84%	536	9.71E-05	12	5.97%	3823	6.93E-04	20	4.98%	3190	5.79E-04
5	1.12%	718	1.30E-04	13	6.18%	3960	7.18E-04	21	4.20%	2692	4.88E-04
6	1.97%	1261	2.29E-04	14	6.32%	4047	7.34E-04	22	3.60%	2307	4.18E-04
7	3.25%	2080	3.77E-04	15	6.74%	4315	7.83E-04	23	2.79%	1787	3.24E-04
8	4.85%	3104	5.63E-04	16	6.60%	4225	7.66E-04	24	1.98%	1265	2.29E-04
Total										64,050	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
Cumulative Operation - State Route 17
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_17	State Route 17 Northbound	NB	3	602.1	0.37	17.0	56	1.3	65	64,050
TEXH_SB_17	State Route 17 Southbound	SB	3	640.0	0.40	17.0	56	1.3	65	64,050
									Total	128,100

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle (g/VMT)	0.02626			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH NB 17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	543	1.48E-03	9	6.31%	4041	1.10E-02	17	6.09%	3901	1.06E-02
2	0.56%	359	9.81E-04	10	6.20%	3970	1.08E-02	18	6.01%	3851	1.05E-02
3	0.51%	325	8.87E-04	11	6.11%	3915	1.07E-02	19	5.12%	3279	8.95E-03
4	0.78%	497	1.36E-03	12	5.95%	3811	1.04E-02	20	4.10%	2628	7.17E-03
5	2.06%	1320	3.60E-03	13	5.88%	3767	1.03E-02	21	3.42%	2188	5.97E-03
6	4.13%	2648	7.23E-03	14	5.90%	3781	1.03E-02	22	3.00%	1921	5.24E-03
7	5.19%	3326	9.08E-03	15	6.05%	3874	1.06E-02	23	2.28%	1462	3.99E-03
8	5.95%	3812	1.04E-02	16	6.10%	3910	1.07E-02	24	1.44%	922	2.52E-03
Total										64,050	

2025 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH SB 17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.85%	543	1.57E-03	9	6.31%	4041	1.17E-02	17	6.09%	3901	1.13E-02
2	0.56%	359	1.04E-03	10	6.20%	3970	1.15E-02	18	6.01%	3851	1.12E-02
3	0.51%	325	9.43E-04	11	6.11%	3915	1.14E-02	19	5.12%	3279	9.51E-03
4	0.78%	497	1.44E-03	12	5.95%	3811	1.11E-02	20	4.10%	2628	7.63E-03
5	2.06%	1320	3.83E-03	13	5.88%	3767	1.09E-02	21	3.42%	2188	6.35E-03
6	4.13%	2648	7.68E-03	14	5.90%	3781	1.10E-02	22	3.00%	1921	5.57E-03
7	5.19%	3326	9.65E-03	15	6.05%	3874	1.12E-02	23	2.28%	1462	4.24E-03
8	5.95%	3812	1.11E-02	16	6.10%	3910	1.13E-02	24	1.44%	922	2.67E-03
Total										64,050	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential

Cumulative Operation - State Route 17

TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions

Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_17	State Route 17 Northbound	NB	3	602.1	0.37	17.0	56	1.3	65	64,050
TEVAP_SB_17	State Route 17 Southbound	SB	3	640.0	0.40	17.0	56	1.3	65	64,050
									Total	128,100

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	65			
Emissions per Vehicle per Hour (g/hour)	1.26329			
Emissions per Vehicle per Mile (g/VMI)	0.01944			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	543	1.10E-03	9	6.31%	4041	8.16E-03	17	6.09%	3901	7.88E-03
2	0.56%	359	7.26E-04	10	6.20%	3970	8.02E-03	18	6.01%	3851	7.78E-03
3	0.51%	325	6.56E-04	11	6.11%	3915	7.91E-03	19	5.12%	3279	6.62E-03
4	0.78%	497	1.00E-03	12	5.95%	3811	7.70E-03	20	4.10%	2628	5.31E-03
5	2.06%	1320	2.67E-03	13	5.88%	3767	7.61E-03	21	3.42%	2188	4.42E-03
6	4.13%	2648	5.35E-03	14	5.90%	3781	7.64E-03	22	3.00%	1921	3.88E-03
7	5.19%	3326	6.72E-03	15	6.05%	3874	7.82E-03	23	2.28%	1462	2.95E-03
8	5.95%	3812	7.70E-03	16	6.10%	3910	7.90E-03	24	1.44%	922	1.86E-03
Total										64,050	

2025 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.85%	543	1.17E-03	9	6.31%	4041	8.67E-03	17	6.09%	3901	8.37E-03
2	0.56%	359	7.71E-04	10	6.20%	3970	8.52E-03	18	6.01%	3851	8.27E-03
3	0.51%	325	6.97E-04	11	6.11%	3915	8.40E-03	19	5.12%	3279	7.04E-03
4	0.78%	497	1.07E-03	12	5.95%	3811	8.18E-03	20	4.10%	2628	5.64E-03
5	2.06%	1320	2.83E-03	13	5.88%	3767	8.09E-03	21	3.42%	2188	4.70E-03
6	4.13%	2648	5.69E-03	14	5.90%	3781	8.12E-03	22	3.00%	1921	4.13E-03
7	5.19%	3326	7.14E-03	15	6.05%	3874	8.32E-03	23	2.28%	1462	3.14E-03
8	5.95%	3812	8.19E-03	16	6.10%	3910	8.39E-03	24	1.44%	922	1.98E-03
Total										64,050	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential

Cumulative Operation - State Route 17

Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions

Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_17	State Route 17 Northbound	NB	3	602.1	0.37	17.0	56	1.3	65	64,050
FUG_SB_17	State Route 17 Southbound	SB	3	640.0	0.40	17.0	56	1.3	65	64,050
									Total	128,100

Emission Factors - Fugitive PM2.5

Speed Category Travel Speed (mph)	1 65	2	3	4
Tire Wear - Emissions per Vehicle (g/VMT)	0.00209			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01671			
Road Dust - Emissions per Vehicle (g/VMT)	0.00717			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.02597			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_17

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.85%	543	1.47E-03	9	6.31%	4041	1.09E-02	17	6.09%	3901	1.05E-02
2	0.56%	359	9.70E-04	10	6.20%	3970	1.07E-02	18	6.01%	3851	1.04E-02
3	0.51%	325	8.77E-04	11	6.11%	3915	1.06E-02	19	5.12%	3279	8.85E-03
4	0.78%	497	1.34E-03	12	5.95%	3811	1.03E-02	20	4.10%	2628	7.09E-03
5	2.06%	1320	3.56E-03	13	5.88%	3767	1.02E-02	21	3.42%	2188	5.91E-03
6	4.13%	2648	7.15E-03	14	5.90%	3781	1.02E-02	22	3.00%	1921	5.19E-03
7	5.19%	3326	8.98E-03	15	6.05%	3874	1.05E-02	23	2.28%	1462	3.95E-03
8	5.95%	3812	1.03E-02	16	6.10%	3910	1.06E-02	24	1.44%	922	2.49E-03
Total										64,050	

2025 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_17

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.85%	543	1.56E-03	9	6.31%	4041	1.16E-02	17	6.09%	3901	1.12E-02
2	0.56%	359	1.03E-03	10	6.20%	3970	1.14E-02	18	6.01%	3851	1.10E-02
3	0.51%	325	9.32E-04	11	6.11%	3915	1.12E-02	19	5.12%	3279	9.41E-03
4	0.78%	497	1.43E-03	12	5.95%	3811	1.09E-02	20	4.10%	2628	7.54E-03
5	2.06%	1320	3.79E-03	13	5.88%	3767	1.08E-02	21	3.42%	2188	6.28E-03
6	4.13%	2648	7.60E-03	14	5.90%	3781	1.08E-02	22	3.00%	1921	5.51E-03
7	5.19%	3326	9.54E-03	15	6.05%	3874	1.11E-02	23	2.28%	1462	4.19E-03
8	5.95%	3812	1.09E-02	16	6.10%	3910	1.12E-02	24	1.44%	922	2.64E-03
Total										64,050	

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
 Cumulative Operation - E Campbell Ave
 DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
 Year = 2025**

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	43.7	3.4	25	10,311
DPM_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	43.7	3.4	25	10,311
									Total	20,623

Emission Factors

Speed Category Travel Speed (mph)	1	2	3	4
25	0.00035			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and DPM Emissions - DPM_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.93%	406	1.91E-05	9	6.41%	661	3.11E-05	17	5.55%	572	2.69E-05
2	2.62%	270	1.27E-05	10	7.36%	759	3.57E-05	18	3.16%	325	1.53E-05
3	2.85%	294	1.38E-05	11	6.34%	654	3.08E-05	19	2.36%	243	1.14E-05
4	3.31%	341	1.61E-05	12	6.92%	713	3.36E-05	20	0.87%	89	4.20E-06
5	2.17%	223	1.05E-05	13	6.29%	649	3.05E-05	21	3.09%	319	1.50E-05
6	3.36%	347	1.63E-05	14	6.23%	643	3.03E-05	22	4.12%	424	2.00E-05
7	6.00%	618	2.91E-05	15	5.15%	531	2.50E-05	23	2.58%	266	1.25E-05
8	4.58%	472	2.22E-05	16	3.84%	396	1.86E-05	24	0.92%	95	4.48E-06
Total										10,311	

2025 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.93%	406	1.67E-05	9	6.41%	661	2.73E-05	17	5.55%	572	2.36E-05
2	2.62%	270	1.12E-05	10	7.36%	759	3.13E-05	18	3.16%	325	1.34E-05
3	2.85%	294	1.21E-05	11	6.34%	654	2.70E-05	19	2.36%	243	1.00E-05
4	3.31%	341	1.41E-05	12	6.92%	713	2.94E-05	20	0.87%	89	3.68E-06
5	2.17%	223	9.22E-06	13	6.29%	649	2.68E-05	21	3.09%	319	1.31E-05
6	3.36%	347	1.43E-05	14	6.23%	643	2.65E-05	22	4.12%	424	1.75E-05
7	6.00%	618	2.55E-05	15	5.15%	531	2.19E-05	23	2.58%	266	1.10E-05
8	4.58%	472	1.95E-05	16	3.84%	396	1.63E-05	24	0.92%	95	3.93E-06
Total										10,311	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
Cumulative Operation - E Campbell Ave
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5 EB CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	25	10,311
PM2.5 WB CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	25	10,311
									Total	20,623

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.002020			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5 EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	119	3.22E-05	9	7.11%	734	1.99E-04	17	7.39%	762	2.07E-04
2	0.42%	43	1.18E-05	10	4.39%	452	1.23E-04	18	8.18%	843	2.29E-04
3	0.41%	42	1.14E-05	11	4.66%	481	1.31E-04	19	5.69%	587	1.60E-04
4	0.26%	27	7.28E-06	12	5.89%	607	1.65E-04	20	4.28%	441	1.20E-04
5	0.50%	51	1.39E-05	13	6.15%	634	1.72E-04	21	3.25%	336	9.12E-05
6	0.91%	94	2.54E-05	14	6.04%	623	1.69E-04	22	3.30%	340	9.24E-05
7	3.79%	391	1.06E-04	15	7.01%	723	1.96E-04	23	2.46%	254	6.89E-05
8	7.77%	801	2.18E-04	16	7.14%	736	2.00E-04	24	1.86%	192	5.22E-05
Total										10,311	

2025 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5 WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	119	2.82E-05	9	7.11%	734	1.75E-04	17	7.39%	762	1.81E-04
2	0.42%	43	1.04E-05	10	4.39%	452	1.08E-04	18	8.18%	843	2.01E-04
3	0.41%	42	1.00E-05	11	4.66%	481	1.15E-04	19	5.69%	587	1.40E-04
4	0.26%	27	6.39E-06	12	5.89%	607	1.45E-04	20	4.28%	441	1.05E-04
5	0.50%	51	1.22E-05	13	6.15%	634	1.51E-04	21	3.25%	336	7.99E-05
6	0.91%	94	2.23E-05	14	6.04%	623	1.48E-04	22	3.30%	340	8.10E-05
7	3.79%	391	9.30E-05	15	7.01%	723	1.72E-04	23	2.46%	254	6.04E-05
8	7.77%	801	1.91E-04	16	7.14%	736	1.75E-04	24	1.86%	192	4.58E-05
Total										10,311	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
 Cumulative Operation - E Campbell Ave
 TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
 Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	25	10,311
TEXH_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	25	10,311
									Total	20,623

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.04084			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	119	6.51E-04	9	7.11%	734	4.03E-03	17	7.39%	762	4.18E-03
2	0.42%	43	2.39E-04	10	4.39%	452	2.48E-03	18	8.18%	843	4.63E-03
3	0.41%	42	2.31E-04	11	4.66%	481	2.64E-03	19	5.69%	587	3.22E-03
4	0.26%	27	1.47E-04	12	5.89%	607	3.33E-03	20	4.28%	441	2.42E-03
5	0.50%	51	2.81E-04	13	6.15%	634	3.48E-03	21	3.25%	336	1.84E-03
6	0.91%	94	5.14E-04	14	6.04%	623	3.42E-03	22	3.30%	340	1.87E-03
7	3.79%	391	2.15E-03	15	7.01%	723	3.97E-03	23	2.46%	254	1.39E-03
8	7.77%	801	4.40E-03	16	7.14%	736	4.04E-03	24	1.86%	192	1.06E-03
Total										10,311	

2025 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	119	5.71E-04	9	7.11%	734	3.53E-03	17	7.39%	762	3.67E-03
2	0.42%	43	2.09E-04	10	4.39%	452	2.18E-03	18	8.18%	843	4.06E-03
3	0.41%	42	2.03E-04	11	4.66%	481	2.31E-03	19	5.69%	587	2.83E-03
4	0.26%	27	1.29E-04	12	5.89%	607	2.92E-03	20	4.28%	441	2.12E-03
5	0.50%	51	2.47E-04	13	6.15%	634	3.05E-03	21	3.25%	336	1.62E-03
6	0.91%	94	4.50E-04	14	6.04%	623	3.00E-03	22	3.30%	340	1.64E-03
7	3.79%	391	1.88E-03	15	7.01%	723	3.48E-03	23	2.46%	254	1.22E-03
8	7.77%	801	3.86E-03	16	7.14%	736	3.55E-03	24	1.86%	192	9.26E-04
Total										10,311	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
 Cumulative Operation - E Campbell Ave
 TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
 Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	25	10,311
TEVAP_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	25	10,311
									Total	20,623

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle per Hour (g/hour)	1.25524			
Emissions per Vehicle per Mile (g/VMI)	0.05021			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	119	8.01E-04	9	7.11%	734	4.95E-03	17	7.39%	762	5.14E-03
2	0.42%	43	2.94E-04	10	4.39%	452	3.05E-03	18	8.18%	843	5.69E-03
3	0.41%	42	2.84E-04	11	4.66%	481	3.25E-03	19	5.69%	587	3.96E-03
4	0.26%	27	1.81E-04	12	5.89%	607	4.10E-03	20	4.28%	441	2.98E-03
5	0.50%	51	3.46E-04	13	6.15%	634	4.28E-03	21	3.25%	336	2.27E-03
6	0.91%	94	6.32E-04	14	6.04%	623	4.21E-03	22	3.30%	340	2.30E-03
7	3.79%	391	2.64E-03	15	7.01%	723	4.88E-03	23	2.46%	254	1.71E-03
8	7.77%	801	5.41E-03	16	7.14%	736	4.97E-03	24	1.86%	192	1.30E-03
Total										10,311	

2025 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	119	7.02E-04	9	7.11%	734	4.34E-03	17	7.39%	762	4.51E-03
2	0.42%	43	2.57E-04	10	4.39%	452	2.68E-03	18	8.18%	843	4.99E-03
3	0.41%	42	2.49E-04	11	4.66%	481	2.85E-03	19	5.69%	587	3.48E-03
4	0.26%	27	1.59E-04	12	5.89%	607	3.59E-03	20	4.28%	441	2.61E-03
5	0.50%	51	3.03E-04	13	6.15%	634	3.76E-03	21	3.25%	336	1.99E-03
6	0.91%	94	5.54E-04	14	6.04%	623	3.69E-03	22	3.30%	340	2.01E-03
7	3.79%	391	2.31E-03	15	7.01%	723	4.28E-03	23	2.46%	254	1.50E-03
8	7.77%	801	4.74E-03	16	7.14%	736	4.36E-03	24	1.86%	192	1.14E-03
Total										10,311	

57-101 Gilman & 60 Dillon Ave, Campbell, CA - On-Site Residential
Cumulative Operation - E Campbell Ave
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2025

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_EB_CAM	Campbell Ave Eastbound	EB	2	779.2	0.48	13.3	44	1.3	25	10,311
FUG_WB_CAM	Campbell Ave Westbound	WB	2	683.2	0.42	13.3	44	1.3	25	10,311
									Total	20,623

Emission Factors - Fugitive PM2.5

Speed Category Travel Speed (mph)	1	2	3	4
	25			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00211			
Brake Wear - Emissions per Vehicle (g/VMT)	0.01680			
Road Dust - Emissions per Vehicle (g/VMT)	0.01483			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03374			

Emission Factors from CT-EMFAC2017

2025 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_CAM

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	119	5.38E-04	9	7.11%	734	3.33E-03	17	7.39%	762	3.46E-03
2	0.42%	43	1.97E-04	10	4.39%	452	2.05E-03	18	8.18%	843	3.83E-03
3	0.41%	42	1.91E-04	11	4.66%	481	2.18E-03	19	5.69%	587	2.66E-03
4	0.26%	27	1.22E-04	12	5.89%	607	2.75E-03	20	4.28%	441	2.00E-03
5	0.50%	51	2.32E-04	13	6.15%	634	2.88E-03	21	3.25%	336	1.52E-03
6	0.91%	94	4.24E-04	14	6.04%	623	2.83E-03	22	3.30%	340	1.54E-03
7	3.79%	391	1.77E-03	15	7.01%	723	3.28E-03	23	2.46%	254	1.15E-03
8	7.77%	801	3.63E-03	16	7.14%	736	3.34E-03	24	1.86%	192	8.72E-04
Total										10,311	

2025 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_CAM

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	119	4.72E-04	9	7.11%	734	2.92E-03	17	7.39%	762	3.03E-03
2	0.42%	43	1.73E-04	10	4.39%	452	1.80E-03	18	8.18%	843	3.35E-03
3	0.41%	42	1.67E-04	11	4.66%	481	1.91E-03	19	5.69%	587	2.34E-03
4	0.26%	27	1.07E-04	12	5.89%	607	2.41E-03	20	4.28%	441	1.75E-03
5	0.50%	51	2.04E-04	13	6.15%	634	2.52E-03	21	3.25%	336	1.33E-03
6	0.91%	94	3.72E-04	14	6.04%	623	2.48E-03	22	3.30%	340	1.35E-03
7	3.79%	391	1.55E-03	15	7.01%	723	2.88E-03	23	2.46%	254	1.01E-03
8	7.77%	801	3.19E-03	16	7.14%	736	2.93E-03	24	1.86%	192	7.65E-04
Total										10,311	

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - State Route 17 - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Onsite MEI Receptors (1.5 & 4.5 meter receptor height)**

Emission Year 2025
Receptor Information Construction Residential MEI receptor
 Number of Receptors 44
 Receptor Height 1.5 & 4.5 meters
 Receptor Distances At Construction Residential MEI location

Meteorological Conditions
 BAAQMD San Jose Airport Met Data 2013-2017
 Land Use Classification Urban
 Wind Speed Variable
 Wind Direction Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0038	0.1675	0.1240	1st Floor
2013-2017	0.0037	0.1603	0.1187	2nd Floor

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.1762	0.1657	0.0105	1st Floor
2013-2017	0.1686	0.1586	0.0100	2nd Floor

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - E Campbell Avenue - TACs & PM2.5
 AERMOD Risk Modeling Parameters and Maximum Concentrations
 at Onsite MEI Receptors (1.5 & 4.5 meter receptor height)**

Emission Year 2025
Receptor Information Construction Residential MEI receptor
 Number of Receptors 44
 Receptor Height 1.5 & 4.5 meters
 Receptor Distances At Construction Residential MEI location

Meteorological Conditions
 BAAQMD San Jose Airport Met Data 2013-2017
 Land Use Classification Urban
 Wind Speed Variable
 Wind Direction Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*			
	DPM	Exhaust TOG	Evaporative TOG	
2013-2017	0.0019	0.2628	0.3227	1st Floor
2013-2017	0.0017	0.2090	0.2566	2nd Floor

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*			
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5	
2013-2017	0.2301	0.2171	0.0130	1st Floor
2013-2017	0.1830	0.1727	0.0103	2nd Floor

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - State Route 17 Traffic Cancer Risk
Impacts at Onsite MEI - 1.5 meter receptor height
30 Year Residential Exposure**

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁶

Where: C_{air} = concentration in air (µg/m³)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Maximum - Exposure Information				Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
1	1	0 - 1	2025	10	0.0038	0.1675	0.1240	0.631	0.157	0.0068	0.79
2	1	1 - 2	2026	10	0.0038	0.1675	0.1240	0.631	0.157	0.0068	0.79
3	1	2 - 3	2027	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
4	1	3 - 4	2028	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
5	1	4 - 5	2029	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
6	1	5 - 6	2030	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
7	1	6 - 7	2031	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
8	1	7 - 8	2032	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
9	1	8 - 9	2033	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
10	1	9 - 10	2034	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
11	1	10 - 11	2035	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
12	1	11 - 12	2036	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
13	1	12 - 13	2037	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
14	1	13 - 14	2038	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
15	1	14 - 15	2039	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
16	1	15 - 16	2040	3	0.0038	0.1675	0.1240	0.099	0.025	0.0011	0.13
17	1	16-17	2041	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
18	1	17-18	2042	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
19	1	18-19	2043	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
20	1	19-20	2044	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
21	1	20-21	2045	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
22	1	21-22	2046	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
23	1	22-23	2047	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
24	1	23-24	2048	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
25	1	24-25	2049	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
26	1	25-26	2050	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
27	1	26-27	2051	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
28	1	27-28	2052	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
29	1	28-29	2053	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
30	1	29-30	2054	1	0.0038	0.1675	0.1240	0.011	0.003	0.0001	0.01
Total Increased Cancer Risk								2.86	0.712	0.031	3.60

* Third trimester of pregnancy

Maximum
Hazard Index 0.0008
Fugitive PM2.5 0.17
Total PM2.5 0.18

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - E Campbell Avenue Traffic Cancer Risk
Impacts at Onsite MEI - 1.5 meter receptor height
30 Year Residential Exposure**

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁶

Where: C_{air} = concentration in air (µg/m³)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Maximum - Exposure Information				Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
1	1	0 - 1	2025	10	0.0019	0.2628	0.3227	0.315	0.246	0.0178	0.58
2	1	1 - 2	2026	10	0.0019	0.2628	0.3227	0.315	0.246	0.0178	0.58
3	1	2 - 3	2027	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
4	1	3 - 4	2028	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
5	1	4 - 5	2029	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
6	1	5 - 6	2030	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
7	1	6 - 7	2031	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
8	1	7 - 8	2032	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
9	1	8 - 9	2033	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
10	1	9 - 10	2034	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
11	1	10 - 11	2035	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
12	1	11 - 12	2036	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
13	1	12 - 13	2037	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
14	1	13 - 14	2038	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
15	1	14 - 15	2039	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
16	1	15 - 16	2040	3	0.0019	0.2628	0.3227	0.050	0.039	0.0028	0.09
17	1	16-17	2041	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
18	1	17-18	2042	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
19	1	18-19	2043	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
20	1	19-20	2044	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
21	1	20-21	2045	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
22	1	21-22	2046	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
23	1	22-23	2047	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
24	1	23-24	2048	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
25	1	24-25	2049	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
26	1	25-26	2050	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
27	1	26-27	2051	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
28	1	27-28	2052	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
29	1	28-29	2053	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
30	1	29-30	2054	1	0.0019	0.2628	0.3227	0.006	0.004	0.0003	0.01
Total Increased Cancer Risk								1.43	1.116	0.081	2.63

* Third trimester of pregnancy

Maximum
Hazard Index 0.0004
Fugitive PM2.5 0.22
Total PM2.5 0.23

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - State Route 17 Traffic Cancer Risk
Impacts at Onsite MEI - 4.5 meter receptor height
30 Year Residential Exposure**

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁶

Where: C_{air} = concentration in air (µg/m³)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Maximum - Exposure Information				Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
1	1	0 - 1	2025	10	0.0037	0.1603	0.1187	0.604	0.150	0.0066	0.76
2	1	1 - 2	2026	10	0.0037	0.1603	0.1187	0.604	0.150	0.0066	0.76
3	1	2 - 3	2027	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
4	1	3 - 4	2028	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
5	1	4 - 5	2029	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
6	1	5 - 6	2030	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
7	1	6 - 7	2031	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
8	1	7 - 8	2032	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
9	1	8 - 9	2033	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
10	1	9 - 10	2034	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
11	1	10 - 11	2035	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
12	1	11 - 12	2036	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
13	1	12 - 13	2037	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
14	1	13 - 14	2038	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
15	1	14 - 15	2039	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
16	1	15 - 16	2040	3	0.0037	0.1603	0.1187	0.095	0.024	0.0010	0.12
17	1	16 - 17	2041	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
18	1	17 - 18	2042	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
19	1	18 - 19	2043	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
20	1	19 - 20	2044	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
21	1	20 - 21	2045	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
22	1	21 - 22	2046	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
23	1	22 - 23	2047	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
24	1	23 - 24	2048	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
25	1	24 - 25	2049	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
26	1	25 - 26	2050	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
27	1	26 - 27	2051	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
28	1	27 - 28	2052	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
29	1	28 - 29	2053	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
30	1	29 - 30	2054	1	0.0037	0.1603	0.1187	0.011	0.003	0.0001	0.01
Total Increased Cancer Risk								2.74	0.681	0.030	3.45

* Third trimester of pregnancy

Maximum
Hazard Index 0.0007
Fugitive PM2.5 0.16
Total PM2.5 0.17

**57-101 Gilman & 60 Dillon Ave, Campbell, CA - E Campbell Avenue Traffic Cancer Risk
Impacts at Onsite MEI - 4.5 meter receptor height
30 Year Residential Exposure**

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

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

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10⁶

Where: C_{air} = concentration in air (µg/m³)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10⁶ = Conversion factor

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

Age -> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Maximum - Exposure Information				Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
1	1	0 - 1	2025	10	0.0017	0.2090	0.2566	0.274	0.196	0.0142	0.48
2	1	1 - 2	2026	10	0.0017	0.2090	0.2566	0.274	0.196	0.0142	0.48
3	1	2 - 3	2027	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
4	1	3 - 4	2028	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
5	1	4 - 5	2029	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
6	1	5 - 6	2030	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
7	1	6 - 7	2031	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
8	1	7 - 8	2032	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
9	1	8 - 9	2033	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
10	1	9 - 10	2034	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
11	1	10 - 11	2035	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
12	1	11 - 12	2036	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
13	1	12 - 13	2037	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
14	1	13 - 14	2038	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
15	1	14 - 15	2039	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
16	1	15 - 16	2040	3	0.0017	0.2090	0.2566	0.043	0.031	0.0022	0.08
17	1	16-17	2041	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
18	1	17-18	2042	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
19	1	18-19	2043	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
20	1	19-20	2044	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
21	1	20-21	2045	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
22	1	21-22	2046	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
23	1	22-23	2047	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
24	1	23-24	2048	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
25	1	24-25	2049	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
26	1	25-26	2050	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
27	1	26-27	2051	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
28	1	27-28	2052	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
29	1	28-29	2053	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
30	1	29-30	2054	1	0.0017	0.2090	0.2566	0.005	0.003	0.0002	0.01
Total Increased Cancer Risk								1.24	0.888	0.064	2.20

* Third trimester of pregnancy

Maximum
Hazard Index 0.0003
Fugitive PM2.5 0.17
Total PM2.5 0.18



BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Risk & Hazard Stationary Source Inquiry Form

This form is required when users request stationary source data from BAAQMD

This form is to be used with the BAAQMD's Google Earth stationary source screening tables.

[Click here for guidance on conducting risk & hazard screening, including roadways & freeways, refer to the District's Risk & Hazard Analysis flow chart.](#)

[Click here for District's Recommended Methods for Screening and Modeling Local Risks and Hazards document.](#)

Table A: Requester Contact Information

Date of Request	1/23/2023
Contact Name	Jordyn Bauer
Affiliation	Illingworth & Rodkin, Inc.
Phone	707-794-0400 x103
Email	jbauer@illingworthrodkin.com
Project Name	57 Gilman Ave
Address	57-101 Gilman Ave & 60 Dillon Ave
City	Pinole
County	Campbell
Type (residential, commercial, mixed use, industrial, etc.)	Residential
Project Size (# of units or building square feet)	29 townhomes
Comments:	

For Air District assistance, the following steps must be completed:

1. Complete all the contact and project information requested in **Table A**. Incomplete forms will not be processed. Please include a project site map.
2. Download and install the free program Google Earth, <http://www.google.com/earth/download/ge/>, and then download the county specific Google Earth stationary source application files from the District's website, <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>. The small points on the map represent stationary sources permitted by the District (Map A on right). These permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc. Click on a point to view the source's Information Table, including the name, location, and preliminary estimated cancer risk, hazard index, and PM2.5 concentration.
3. Find the project site in Google Earth by inputting the site's address in the Google Earth search box.
4. Identify stationary sources within at least a 1000ft radius of project site. Verify that the location of the source on the map matches with the source's address in the Information Table, by using the Google Earth address search box to confirm the source's address location. Please report any mapping errors to the District.
5. List the stationary source information in **Table B** blue section only.
6. Note that a small percentage of the stationary sources have Health Risk Screening Assessment (HRSA) data INSTEAD of screening level data. These sources will be noted by an asterisk next to the Plant Name (right). If HRSA values are presented, these values have already been modeled and cannot be adjusted further.
7. Email this completed form to District staff. District staff will provide the most recent risk, hazard, and PM2.5 data that are available for the source(s). If this information or data are not available, source emissions data will be provided. Staff will respond to inquiries within three weeks.

Note that a public records request received for the same stationary source information will cancel the processing of your SSIF request.

Submit forms, maps, and questions to Matthew Hanson at 415-749-8733, or mhanson@baaqmd.gov

Table B: Google Earth data

Distance from Receptor (feet) or MEI ¹	Plant No.	Facility Name	Address	Cancer Risk ²	Hazard Risk ²	PM _{2.5} ²	Source No. ³	Type of Source ⁴	Fuel Code ⁵	Status/Comments	Project MEI			
											Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
1000+	19049	City of Campbell	77 Harrison Ave West Sid	0.092	0.00002	0.0001		Generator		2020 Dataset	0.04	0.00	0.00000	0.0000
970	18459	Orchard Valley Coffee	349 E Campbell Ave	0.0004	0.000003	0.0081		Manufacturing		2020 Dataset	0.13	0.00	0.00000	0.0011

Footnotes:

1. Maximally exposed individual
2. These Cancer Risk, Hazard Index, and PM2.5 columns represent the values in the Google Earth Plant Information Table.
3. Each plant may have multiple permits and sources.
4. Permitted sources include diesel back-up generators, gas stations, dry cleaners, boilers, printers, auto spray booths, etc.
5. Fuel codes: 98 = diesel, 189 = Natural Gas.
6. If a Health Risk Screening Assessment (HRSAs) was completed for the source, the application number will be listed here.
8. Engineer who completed the HRSAs. For District purposes only.
9. All HRSAs completed before 1/5/2010 need to be multiplied by an age sensitivity factor of 1.7.
10. The HRSAs "Chronic Health" number represents the Hazard Index.
11. Further information about common sources:
 - a. Sources that only include diesel internal combustion engines can be adjusted using the BAAQMD's Diesel Multiplier worksheet.
 - b. The risk from natural gas boilers used for space heating when <25 MM BTU/hr would have an estimated cancer risk of one in a million or less, and a chronic hazard index of 0.003 or
 - c. BAAQMD Reg 11 Rule 16 required that all co-residential (sharing a wall, floor, ceiling or is in the same building as a residential unit) dry cleaners cease use of perc on July 1, 2010. Therefore, there is no cancer risk, hazard or PM2.5 concentrations from co-residential dry cleaning businesses in the BAAQMD.
 - d. Non co-residential dry cleaners must phase out use of perc by Jan. 1, 2023. Therefore, the risk from these dry cleaners does not need to be factored in over a 70-year period, but instead should reflect
 - e. Gas stations can be adjusted using BAAQMD's Gas Station Distance Multiplier worksheet.
 - f. Unless otherwise noted, exempt sources are considered insignificant. See BAAQMD Reg 2 Rule 1 for a list of exempt sources.
 - g. This spray booth is considered to be insignificant.

Date last updated:

03/13/2018

Project Site

Distance from Receptor (feet) or MEI ¹	FACID (Plant No.)	Distance Adjustment Multiplier	Adjusted Cancer Risk Estimate	Adjusted Hazard Risk	Adjusted PM2.5
860	19049	0.05	0.00	0.00000124	0.0000058
800	18459	0.20	0.00007	0.00000051	0.0016

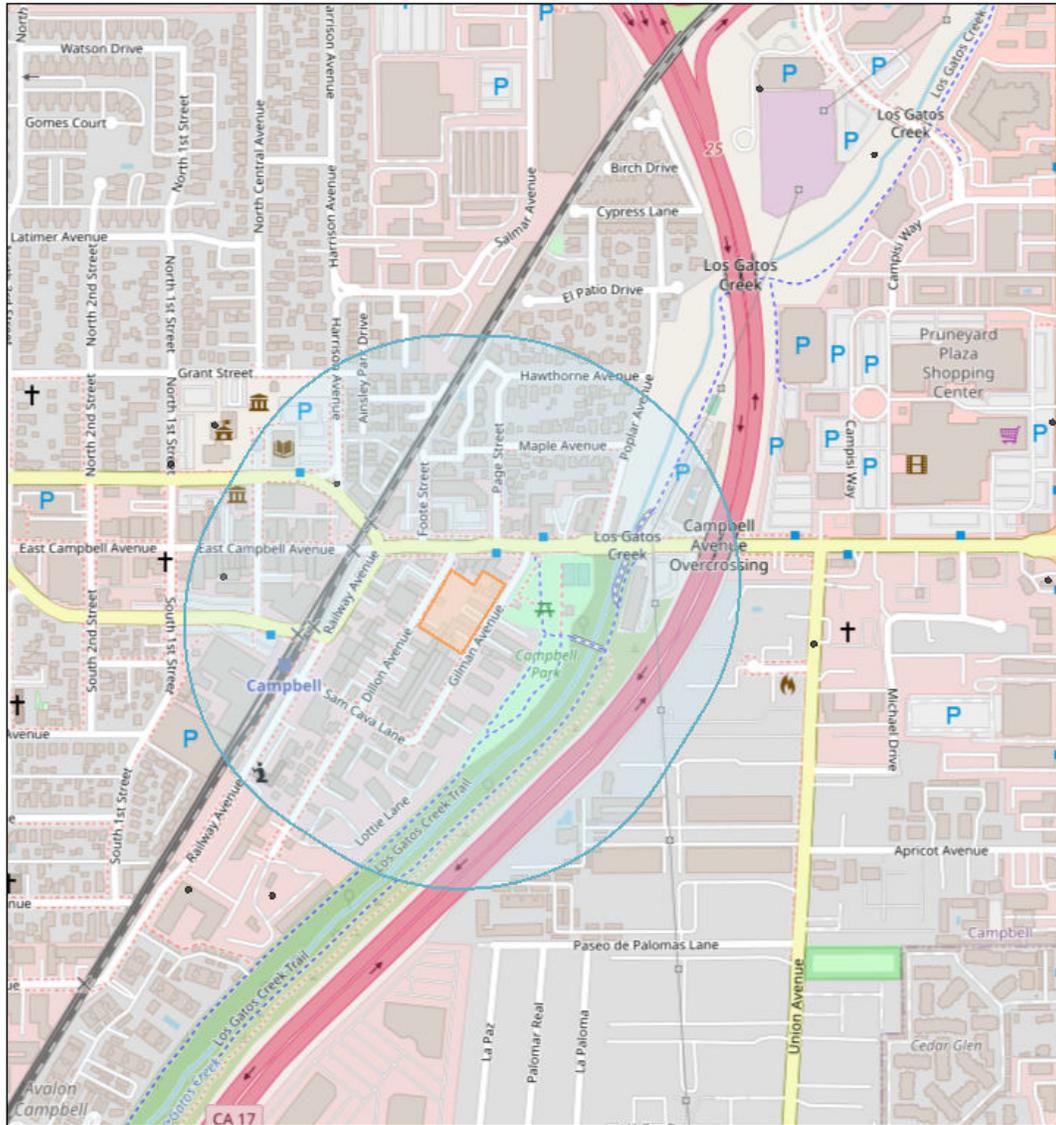


Screening Report

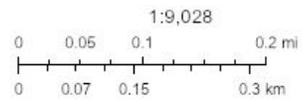
Area of Interest (AOI) Information

Area : 4,295,432.05 ft²

Nov 23 2022 17:20:54 Pacific Standard Time



- Permitted Stationary Sources



Map data © OpenStreetMap contributors, CC-BY-SA

Summary

Name	Count	Area(ft ²)	Length(ft)
Permitted Stationary Sources	2	N/A	N/A

Permitted Stationary Sources

#	FacID	FacName	Address	City	Street
1	19049	City of Campbell	77 Harrison Ave West Side of Bldg	Campbell	CA
2	18459	Orchard Valley Coffee	349 E Campbell Ave	Campbell	CA

#	Zip	County	Latitude	Longitude	Details
1	95,008.00	Santa Clara	37.29	-121.94	Generator
2	95,008.00	Santa Clara	37.29	-121.94	<i>No Data</i>

#	NAICS	Sector	Sub_Sector	Industry	ChronicHI
1	921,120.00	Public Administration	Executive, Legislative, and Other General Government Support	Legislative Bodies	0.0000248
2	311,920.00	Manufacturing	Food Manufacturing	Coffee and Tea Manufacturing	0.0000026

#	PM2_5	Cancer Risk {expression/expr0}	Chronic Hazard Index {expression/expr1}	PM2.5 {expression/expr2}	Count
1	0.0001163	0.092	0	0	1
2	0.0080522	0	0	0.008	1

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

APPENDIX B

Tree Inventory, Assessment, and Protection Report

**Gilman/Dillon Avenue
Campbell, CA 95008**

Prepared for:

Robson Homes, LLC

February 17, 2023

Prepared By:



Monarch Consulting Arborists

Richard Gessner
P.O. Box 1010 - Felton, CA 95018
1 831 331 8982
www.monarcharborists.com

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Summary

The plans are to demolish the existing structures and build new residences. The inventory contains thirteen trees comprised of five different species. There are seven “Street Trees” (Chinese pistache (*Pistacia chinensis*)). Six trees are in good condition and the remaining seven fair. All eight Street Trees have fair suitability for preservation while the remaining five specimens located inside the lots are all poorly suited for retention. All the trees are to be removed including the Street Trees. Four of the five interior trees are considered protected by the ordinance.

Introduction

Background

Robson Homes, LLC asked me to assess the site, trees, and proposed footprint plan, and to provide a report with my findings and recommendations to help satisfy planning requirements.

Assignment

- Provide an arborist’s report including an assessment of the trees within the project area and on the adjacent sites. The assessment is to include the species, size (trunk diameter), condition (health, structure, and form), and suitability for preservation ratings.
- Provide tree protection specifications, guidelines, and impact ratings for those affected by the project.

Limits of the assignment

- The information in this report is limited to the condition of the trees during my inspection on October 14, 2022. No tree risk assessments were performed.
- Tree heights and canopy diameters are estimates.



- The plans reviewed for this assignment were as follows (Table 1).

Table 1: Plans Reviewed Checklist

Plan	Date	Sheet	Reviewed	Source
Existing Site Topographic				
Proposed Site Plan	12/15/2022	C5	Yes	Civil Engineering & Associate
Erosion Control				
Grading and Drainage	12/15/2022	C3	Yes	Civil Engineering & Associate
Utility Plan and Hook-up locations				
Exterior Elevations				
Landscape Plan				
Irrigation Plan				
T-1 Tree Protection Plan				

Purpose and use of the report

The report is intended to identify all the trees within the plan area that could be affected by a project. The report is to be used by the City of Campbell and the property owners as a reference for existing tree conditions to help satisfy planning requirements.

Observations

Plans

The plans are to demolish the existing structures and build new residences.

Tree Inventory

21.32.050 Protected trees.

Except as otherwise provided in Section 21.32.060, (Exemptions) the following trees are classified as protected trees and shall not be removed from private property without approval of a tree removal permit:



The following trees are protected on all properties in all zoning districts:

Heritage trees designated in compliance with Section 21.32.130, (Heritage tree designations); and

Any tree shown on an approved landscaping plan or required to be planted or retained as a condition of approval of a development application, a building permit, or a tree removal permit;

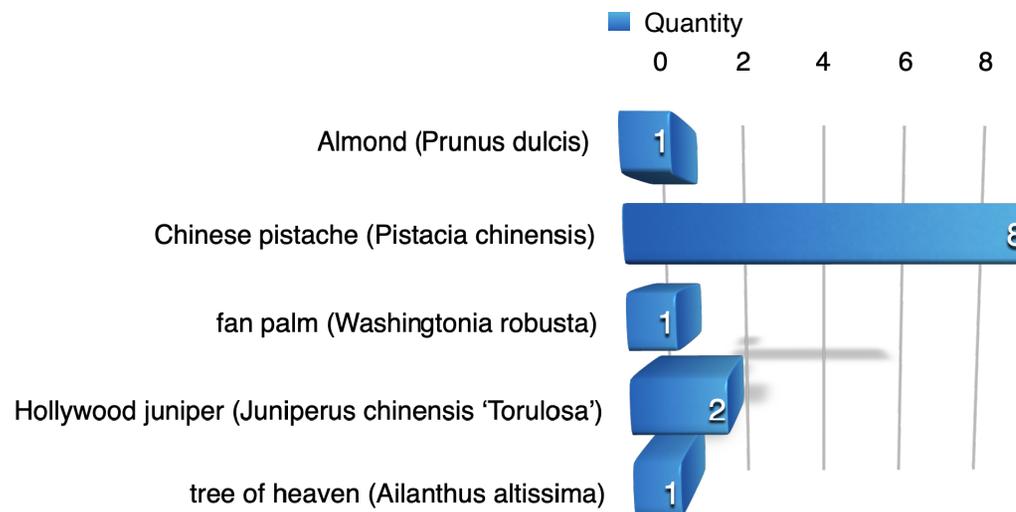
For trees on all commercial, industrial, multi-family residential, mixed-use, and undeveloped single-family residential properties in all zoning districts, any tree or multi-trunk tree with at least one trunk measuring twelve inches or greater in diameter (thirty-eight inches or greater in circumference), measured four feet above the adjacent grade.

For developed single-family residential properties, trees or multi-trunk trees with at least one trunk measuring twelve inches or greater in diameter (thirty-eight inches or greater in circumference) of the following species:

1. Oak (*Quercus*);
2. Redwood (*Sequoia*);
3. Cedar (*Cedrus*);
4. Ash (*Fraxinus*).

The inventory contains thirteen trees comprised of five different species (Chart 1). There are seven “Street Trees”. One Hollywood juniper is less than twelve inches in diameter but included in the inventory. The remaining trees are considered protected and larger than twelve inches.

Chart 1: Species Distribution



The table below indicates the trees assessed around the properties including 60 Dillon Avenue. Included in the observations are the condition assessment overall rating (Table 2).

Table 2: Tree Inventory and Assessment Observations

Tree Species	I.D. #	Trunk Diameter (in.)	~ Height (ft.)	~ Canopy Diameter (ft.)	Condition	Status
Chinese pistache (<i>Pistacia chinensis</i>)	4545	14	30	20	Fair	Street Tree
fan palm (<i>Washingtonia robusta</i>)	271	21	75	15	Good	Protected
tree of heaven (<i>Ailanthus altissima</i>)	272	14, 9, 6, 8, 8, 4, 7, 13	45	45	Fair	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	4544	12	35	35	Good	Street Tree
Hollywood juniper (<i>Juniperus chinensis</i> 'Torulosa')	273	8	10	10	Fair	Not-Protected
Chinese pistache (<i>Pistacia chinensis</i>)	4543	17	35	25	Fair	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	4542	15	35	25	Fair	Street Tree
Hollywood juniper (<i>Juniperus chinensis</i> 'Torulosa')	274	7, 8, 5, 5	15	10	Fair	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	275	14	35	25	Good	Street Tree
Almond (<i>Prunus dulcis</i>)	276	6, 6, 4, 4	15	15	Good	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	277	13	35	25	Fair	Street Tree
Chinese pistache (<i>Pistacia chinensis</i>)	278	10	35	25	Good	Street Tree
Chinese pistache (<i>Pistacia chinensis</i>)	279	10	35	25	Good	Street Tree



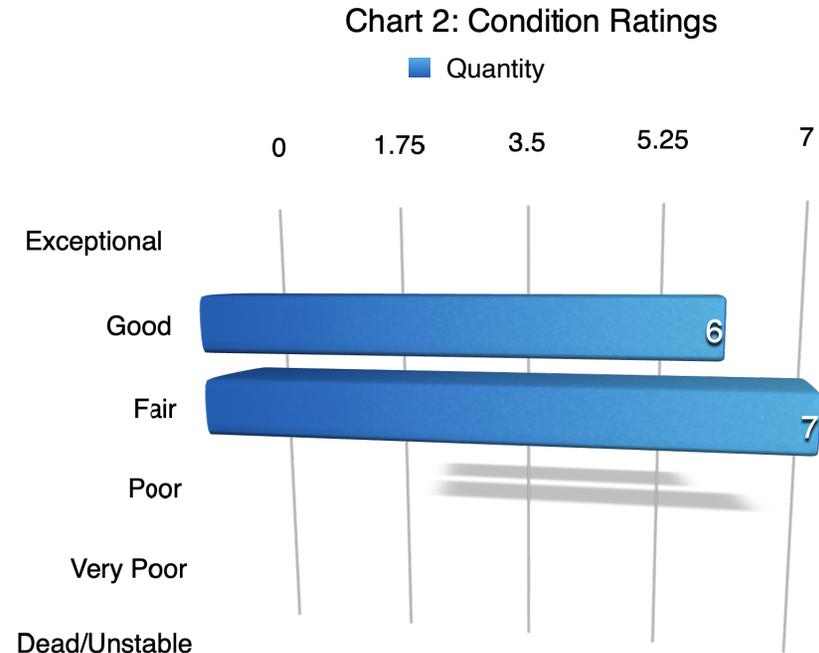
Discussion

Condition Rating

A tree’s condition is a determination of its overall health, structure, and form. The assessment considered all three criteria for a combined condition rating.

- 100% - Exceptional = Good health and structure with significant size, location or quality.
- 61-80% - Good = Normal vigor, well-developed structure, function and aesthetics not compromised with good longevity for the site.
- 41-60 % - Fair = Reduced vigor, damage, dieback, or pest problems, at least one significant structural problem or multiple moderate defects requiring treatment. Major asymmetry or deviation from the species normal habit, function and aesthetics compromised.
- 21-40% - Poor = Unhealthy and declining appearance with poor vigor, abnormal foliar color, size or density with potential irreversible decline. One serious structural defect or multiple significant defects that cannot be corrected and failure may occur at any time. Significant asymmetry and compromised aesthetics and intended use.
- 6-20% - Very Poor = Poor vigor and dying with little foliage in irreversible decline. Severe defects with the likelihood of failure being probable or imminent. Aesthetically poor with little or no function in the landscape.
- 0-5% - Dead/Unstable = Dead or imminently ready to fail.

Six trees are in good condition and the remaining seven fair (Chart 2).



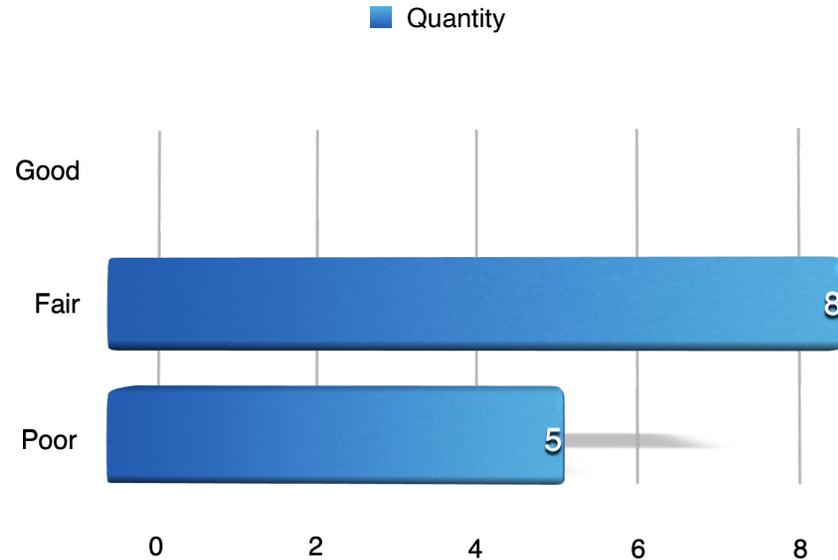
Suitability for Preservation

A tree’s suitability for preservation is determined based on Functional and External Limitations¹ (ISA, 2019).

- Good = Trees with good health, structural stability and longevity.
- Fair = Trees with fair health and/or structural defects that may be mitigated through treatment. These trees require more intense management and monitoring, and may have shorter life spans than those in the good category.
- Poor = Trees in poor health with significant structural defects that cannot be mitigated and will continue to decline regardless of treatment. The species or individual may possess characteristics that are incompatible or undesirable in landscape settings or unsuited for the intended use of the site.

All eight Street Trees have fair suitability while the remaining five located inside the lots are all poorly suited for preservation. Trees poorly suited include a tree of heaven, almond, fan palm, and two Hollywood junipers. Five of these trees are also expected to be removed.

Chart 3: Suitability for Preservation



¹ Functional Limitations are based on factors associated with the tree’s interaction to its planting site affecting plant condition, limiting plant development, or reducing the utility in the future and include genetics, placement, and site conditions for the individual tree (ISA, 2019). External Limitations are outside the property, out of control of the owner and also affect plant condition, limit plant development, or reduce the utility in the future (i.e power lines, municipal restrictions, drought adaptations, or species susceptibility to pests) (ISA, 2019).



Expected Impact Level

Impact level defines how a tree may be affected by construction activity and proximity to the tree, and is described as low, moderate, or high. The following scale defines the impact rating:

- Low = The construction activity will have little influence on the tree.
- Moderate = The construction may cause future health or structural problems, and steps must be taken to protect the tree to reduce future problems.
- High = Tree structure and health will be compromised and removal is recommended, or other actions must be taken for the tree to remain. The tree is located in the building envelope.

All the trees are to be highly impacted and caused to be removed.

Tree Protection

Tree protection focuses on avoiding damage to the roots, trunk, or scaffold branches (Appendix D). The most current accepted method for determining the TPZ is to use a formula based on species tolerance, tree age/vigor, and trunk diameter (Matheny, N. and Clark, J. 1998) (Fite, K, and Smiley, E. T., 2016). Preventing mechanical damage to the trunk from equipment or hand tools can be accomplished by wrapping the main stem with straw wattle or using vertical timbers (Appendix D).

No tree protection is to occur on this site because all the trees are to be removed as part of the plan.



Conclusion

The plans are to demolish the existing structures and build new residences. The inventory contains thirteen trees comprised of five different species. There are seven “Street Trees”. One Hollywood juniper is less than twelve inches in diameter but included in the inventory. The remaining trees are considered protected and larger than twelve inches. Six trees are in good condition and the remaining seven fair. All eight Street Trees have fair suitability for preservation while the remaining five located inside the lots are all poorly suited for retention. Trees poorly suited include a tree of heaven, almond, fan palm, and two Hollywood junipers. All the trees are to be removed and highly impacted. Four of the five interior are considered protected by the ordinance and include one tree of heaven, one Mexican fan palm, one Hollywood juniper, and one almond. All the remaining Chinese pistache Street Trees are to be removed and replaced.

Recommendations

1. Place tree numbers on all the plans.
2. Provide a landscape plan to account for the loss of trees and obtain all necessary permits prior to removing anything.



Appendix B: Tree Inventory Summary Table

Table 4: Tree Inventory Summary

Tree Species	I.D. #	Trunk Diameter (in.)	Condition	Suitability	Expected Impact	Status
Chinese pistache (<i>Pistacia chinensis</i>)	4545	14	Fair	Fair	High	Street Tree
fan palm (<i>Washingtonia robusta</i>)	271	21	Good	Poor	High	Protected
tree of heaven (<i>Ailanthus altissima</i>)	272	14, 9, 6, 8, 8, 4, 7, 13	Fair	Poor	High	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	4544	12	Good	Fair	High	Street Tree
Hollywood juniper (<i>Juniperus chinensis</i> 'Torulosa')	273	8	Fair	Poor	High	Not-Protected
Chinese pistache (<i>Pistacia chinensis</i>)	4543	17	Fair	Fair	High	Street Tree
Chinese pistache (<i>Pistacia chinensis</i>)	4542	15	Fair	Fair	High	Street Tree
Hollywood juniper (<i>Juniperus chinensis</i> 'Torulosa')	274	7, 8, 5, 5	Fair	Poor	High	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	275	14	Good	Fair	High	Street Tree
Almond (<i>Prunus dulcis</i>)	276	6, 6, 4, 4	Good	Poor	High	Protected
Chinese pistache (<i>Pistacia chinensis</i>)	277	13	Fair	Fair	High	Street Tree
Chinese pistache (<i>Pistacia chinensis</i>)	278	10	Good	Fair	High	Street Tree
Chinese pistache (<i>Pistacia chinensis</i>)	279	10	Good	Fair	High	Street Tree



Appendix C: Photographs

C1: Trees #271 and #272



C2: Street Tree 4545 and 4544



C3: Trees #273, #4543, #274, #4542



C4: Trees #275, #276, and #277



C5: Trees #278 and #279



Qualifications, Assumptions, and Limiting Conditions

Any legal description provided to the consultant is assumed to be correct. Any titles or ownership of properties are assumed to be good and marketable. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

All property is presumed to be in conformance with applicable codes, ordinances, statutes, or other regulations.

Care has been taken to obtain information from reliable sources. However, the consultant cannot be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or attend meetings, hearings, conferences, mediations, arbitration, or trials by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

This report and any appraisal value expressed herein represent the opinion of the consultant, and the consultant's fee is not contingent upon the reporting of a specified appraisal value, a stipulated result, or the occurrence of a subsequent event.

Sketches, drawings, and photographs in this report are intended for use as visual aids, are not necessarily to scale, and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is only for coordination and ease of reference. Inclusion of said information with any drawings or other documents does not constitute a representation as to the sufficiency or accuracy of said information.

Unless otherwise expressed: a) this report covers only examined items and their condition at the time of inspection; and b) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that structural problems or deficiencies of plants or property may not arise in the future.



Certification of Performance

I Richard Gessner, Certify:

That I have personally inspected the tree(s) and/or the property referred to in this report, and have stated my findings accurately. The extent of the evaluation and/or appraisal is stated in the attached report and Terms of Assignment;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved;

That the analysis, opinions and conclusions stated herein are my own;

That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted Arboricultural practices;

That no one provided significant professional assistance to the consultant, except as indicated within the report.

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any other subsequent events;

I further certify that I am a Registered Consulting Arborist® with the American Society of Consulting Arborists, and that I acknowledge, accept and adhere to the ASCA Standards of Professional Practice. I am an International Society of Arboriculture Board Certified Master Arborist®. I have been involved with the practice of Arboriculture and the care and study of trees since 1998.

Richard J. Gessner



ASCA Registered Consulting Arborist® #496
ISA Board Certified Master Arborist® WE-4341B



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**GEOTECHNICAL STUDY
RESIDENTIAL DEVELOPMENT**

**GILMAN AVENUE AND DILLON AVENUE SITES
CAMPBELL, CALIFORNIA**

**June 28, 2023
PROJECT PA22.1046.00**

**SUBMITTED TO:
Robson Homes
2185 The Alameda, Suite 150
San Jose, CA 95126**

**PREPARED BY:
Geo-Logic Associates
6300 San Ignacio Avenue, Suite A
San Jose, California 95119
(408) 778-2818**

**GEOTECHNICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
GILMAN AVENUE & DILLON AVENUE SITES
CAMPBELL, CALIFORNIA**

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Appendix A - Keys to Soil Classification, Drill Hole Logs, and CPT Plots

Keys to Soil Classification (Fine and Coarse Grained Soils)
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1 INTRODUCTION

This report presents the results of our geotechnical study for a proposed residential development on six parcels located on Gilman Avenue and Dillon Avenue in Campbell, California. The combined property, with a total area of about 1.16 acres, are listed below and are referred as “property,” “site,” or “project site” in this report. The approximate location of the site is shown on the Vicinity Map included with Figures 1 and 2 of this report. Figure 1 shows a layout of the proposed development. Figure 2 shows the existing site conditions.

Address	Assessor Parcel Number
57 Gilman Avenue	412-09-032
63 Gilman Avenue	412-09-033
71-79 Gilman Avenue	412-09-034
85 Gilman Avenue	412-09-035
101 Gilman Avenue	412-09-036
60 Dillon Avenue	412-09-026

This report presents our findings, conclusions, and geotechnical recommendations for design and construction of the project. These findings, conclusions, and recommendations are based on information collected and reviewed during this study. Our conclusions and recommendations should not be extrapolated to other areas or used for other projects without our review.

1.1 Project Description

The project parcels are currently occupied by residential and commercial developments. The proposed project involves demolition of the existing structures and improvements, followed by construction of residential units including townhomes, duets, and an apartment building. Associated improvements will include underground utilities, landscaping, exterior flatwork, driveways, and on-site streets. Site grading will be limited to cuts and fills of roughly 1 to 3 feet because of the flat-lying topography across the site. The proposed residential buildings will be three-story, wood-framed structures. No basements are planned for the residential units. The apartment building will be a three-story structure with a mezzanine.

The above project descriptions are based on information provided to us. If the actual project differs from those described above, Geo-Logic Associates (GLA) should be contacted to review our findings, conclusions, and recommendations and present any necessary modifications to address the different project development schemes.

1.2 Information Provided

For this study, Robson Homes provided us with the following.

- A drawing titled “Gilman Avenue Site Plan, Campbell, California”, Sheet C5, prepared by

Civil Engineering Associates, dated December 15, 2022, showing the proposed project layout.

- A drawing titled “Alta/NSPS Land Title Survey, 60 Dillon Avenue, 57-101 Gilman Avenue, Campbell, California”, prepared by Civil Engineering Associates, dated October 12, 2022.
- A drawing titled “Groundwater Potentiometric Surface Map, 60 Dillon Avenue, 85 Gilman Avenue, and 101 Gilman Avenue, Campbell, California”, prepared by Ramboll US Consulting, Inc., dated February 15, 2021.

1.3 Purpose and Scope of Services

The purpose of this geotechnical study was to explore subsurface conditions at the project site and to provide geotechnical recommendations for design and construction of the proposed improvements. The following work was performed.

1. Performed a site reconnaissance to observe site surface conditions and to mark locations of our subsurface exploration.
2. Reviewed available geologic and geotechnical information pertinent to the site.
3. Notified Underground Service Alert (USA) for underground utility clearance and coordinated our drilling with Robson Homes.
4. Subcontracted with a private underground services locator to check the proposed exploration locations for presence of underground utilities.
5. Explored subsurface conditions by means of five exploratory drill holes.
6. Collected a bulk sample of the near-surface soil.
7. Performed laboratory tests on selected soil samples from the drill holes and on the bulk sample to measure pertinent engineering properties of the samples.
8. Performed engineering analysis on the field and laboratory data.
9. Prepared this geotechnical study report.

SITE EVALUATION

This study includes a site reconnaissance and a subsurface exploration program. The site reconnaissance was to observe existing site surface conditions. The subsurface exploration program was to explore subsurface earth conditions at the site. The surface and subsurface site conditions are discussed in Section 3 of this report.

1.4 Subsurface Exploration

Our geotechnical subsurface exploration program included five exploratory drill holes (DH-1 through DH-5). The exploratory drill holes were located in the field by referencing to existing site features and pacing; therefore, their locations are approximate. The approximate drill hole locations are shown on Figures 1 and 2 of this report. The drill holes were backfilled in accordance with Santa Clara Valley Water District guidelines after completion of drilling.

The exploratory drill holes were advanced on October 25, 2022, using a truck-mounted Mobile B-53 drilling rig equipped with 8-inch diameter hollow-stem augers. The depth of exploration ranged between approximately 20 and 40 feet below ground surface (bgs). The deepest drill hole (DH-3) was terminated short of the planned 45-foot depth because refusal blow count was encountered at the 40-foot depth.

Soil samples were obtained using a 2-inch outside diameter (O.D.; 1.4-inch inside diameter, I.D.) split-barrel sampler (also called a Standard Penetration Test sampler) and a 3-inch O.D. (2½-inch I.D.) split-barrel sampler. Soil samples were obtained by driving the sampler up to 18 inches into the earth material using a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler was recorded for each 6-inch penetration interval. The number of blows required to drive the sampler the last 12 inches, or the penetration interval indicated on the log when harder material was encountered, is shown as blows per foot (blow count) on the drill hole logs. The samplers in DH-3 were driven with an automatic hammer and the samplers in the remaining drill holes were driven with a safety hammer on a wire winch.

In the field, our personnel visually classified the materials encountered and maintained a log of each drill hole. Visual classification of soils encountered in our drill holes was made in general accordance with the Unified Soil Classification System (ASTM D 2487 and D 2488). The results of our laboratory tests were used to refine our field classifications. Two Keys to Soil Classification, one for fine grained soils and one for coarse grained soils, are included in Appendix A, together with our drill hole logs.

1.5 Laboratory Testing

Geotechnical laboratory testing was conducted on selected soil samples recovered from our drill holes. These tests included moisture content, dry density, Atterberg limits, sieve analysis, and percentage passing a No. 200 sieve. An R-value test was performed on the bulk sample collected from the site. The laboratory test results are presented on the drill hole logs at the corresponding sample depths. Graphic presentations of the results of the Atterberg limits,

sieve analysis, and R-value tests are presented on separate sheets in Appendix B

In addition to geotechnical testing, two selected soil sample were sent to CERCO Analytical for corrosivity analysis. A report from CERCO Analytical with their corrosivity test results is included in Appendix B.

2 FINDINGS

2.1 Surface Conditions

The property consists of six adjoining parcels, five on Gilman Avenue (57, 63, 71-79, 85, and 101 Gilman Avenue) and one on Dillon Avenue (60 Dillon Avenue). The parcels on 57 and 63 Gilman Avenue are occupied by residential developments. The remaining parcels are occupied by commercial developments with existing one-story buildings and asphalt concrete pavements. Topography across the project site is flat-lying.

The project site is located roughly 430 feet west of Los Gatos Creek. The creek invert in the general vicinity is roughly 25 feet below the site surface.

2.2 Subsurface Conditions

Subsurface soils encountered in our drill holes consist of alluvium. In drill holes DH-1 through DH-4, a pavement section consisting of roughly 2 inches of asphalt concrete over roughly 6 inches of base rock was encountered at the ground surface. In drill hole DH-5, a 5-inch thick concrete section was encountered at the ground surface.

In DH-1, subsurface soils below the pavement section consist of very stiff sandy clay of intermediate plasticity to a depth of about 8 feet bgs, very stiff sandy lean clay of low plasticity to a depth of about 12 feet bgs, dense clayey sand with gravel to a depth of about 16 feet bgs, and dense well graded sand with gravel and clay to the maximum explored depth of about 20 feet bgs.

In DH-2, subsurface soils below the pavement section consist of very stiff sandy clay of intermediate plasticity to a depth of about 8 feet bgs, medium dense clayey sand with gravel to a depth of about 16 feet bgs, and dense well graded sand with gravel and clay to the maximum explored depth of about 20 feet bgs.

In DH-3, subsurface soils below the pavement section consist of stiff to very stiff sandy clay of intermediate plasticity to a depth of about 8 feet bgs, very stiff sandy lean clay of low plasticity to a depth of about 12 feet bgs, medium dense clayey sand with gravel to a depth of about 17 feet bgs, medium dense well graded sand with gravel and clay to a depth of about 26 feet bgs, and very dense well graded gravel with sand and clay to the maximum explored depth of about 40 feet bgs.

In DH-4, subsurface soils below the pavement section consist of stiff to very stiff clay of intermediate plasticity to a depth of about 8 feet bgs, very stiff sandy lean clay of low plasticity to medium dense clayey sand to a depth of about 12 feet bgs, and dense well graded sand with gravel and clay to the maximum explored depth of about 20 feet bgs.

In DH-5, subsurface soils below the concrete section consist of stiff clay of intermediate

plasticity to a depth of about 8 feet bgs, very stiff sandy lean clay of low plasticity to a depth of about 12 feet bgs, medium dense clayey sand with gravel to a depth of about 16 feet bgs, and dense well graded sand with gravel and clay to the maximum explored depth of about 20 feet bgs.

2.3 Groundwater

Groundwater was not encountered in our five drill holes for this study. Our review of the Groundwater Potentiometric Surface Map prepared by Ramboll for this project indicates the groundwater elevation at the project site is at approximately 81 feet above mean sea level (MSL), with ground surface elevation ranging between roughly 197 and 198 feet MSL. This corresponds to a groundwater depth of about 116 feet bgs.

Our review of Plate 1.2, ““Depth to historically high ground water, historical liquefaction sites, and locations of boreholes, San Jose West 7.5-minute Quadrangle, California,” Seismic Hazard Zone Report 058, prepared by California Geological Survey, Department of Conservation, 2002 indicating that historically high groundwater level at the site was greater than 50 feet.

It should be noted that fluctuations in the groundwater level may occur due to seasonal variations in rainfall and temperature, water level in the adjacent creek, pumping from wells, regional groundwater recharge program, irrigation, or other factors that were not evident at the time of our investigation.

2.4 Variations in Subsurface Conditions

Our interpretations of soil and groundwater conditions, as described in this report, are based on information obtained during this study. Our conclusions and recommendations are based on these interpretations. Please realize the site has undergone different phases of development and grading. Therefore, it is likely that undisclosed variations in subsurface conditions exist at the site, particularly old foundations, abandoned utilities and localized areas of deep and loose fill.

Careful observations should be made during construction to verify our interpretations. Should variations from our interpretations be found, we should be notified to evaluate whether any revisions should be made to our recommendations.

3 SEISMIC CONSIDERATIONS

3.1 Earthquake Faulting

The Greater San Francisco Bay Area is seismically dominated by the active San Andreas Fault system, the tectonic boundary between the northward moving Pacific Plate (west of the fault) and the North American Plate (east of the fault). This movement is distributed across a complex system of generally strike-slip, right-lateral, and subparallel faults.

Potential sources of significant earthquake ground shaking at the site include several active and potentially active faults in the Greater San Francisco Bay area, as well as faults farther afield. The faults were first compiled on the State’s Fault Activity Map (Jennings, 1974; Jennings and Bryant, 2010). This map has now been integrated into the US Geological Survey’s Quaternary Fault and Fold Database and made available as a .kmz “drape” over Google Earth terrain files.

The distance to a seismic source (fault) is defined by the NGA relationships as the closest distance to the seismogenic zone, be it in the subsurface or at the surface; distances may therefore differ from distances measured on the ground surface. The distances shown on the table below are for reference only, as they are horizontal distances from the site to the surface trace of the seismic source, and not necessarily the closest distance to a (dipping) seismogenic zone. These distances were measured using the US Geological Survey’s Quaternary Fault and Fold Database, with major faults listed in approximate order of distance from the site; not all sources are listed in the summary table below.

Table 4.1-1: Distance and Orientation to Nearby Faults		
Fault Name	Approximate Distance	Orientation from Site
Monte Vista-Shannon	4 km	Southwest
San Andreas (Peninsula section)	12 km	Southwest
Hayward (southern section)	14½ km	Northeast
Sargent	16½ km	South/southwest
Calaveras (northern section)	19 km	Northeast
San Gregorio	37 km	Southwest

3.2 Ground Accelerations

According to the 2019 California Building Code (CBC) and American Society of Civil Engineers (ASCE) Standard 7-16, the spectral response acceleration at any period can be taken as the lesser of the spectral response accelerations from the probabilistic and deterministic ground motion approaches. The U.S. Seismic Design Maps tool available at the Structural Engineers Association of California (SEAOC) website was used for this purpose to retrieve seismic design parameter values for design of buildings at the subject site. Two levels of ground motions are considered in the Application: Risk-targeted Maximum Considered Earthquake (MCE_R) and Design Earthquake (DE), with both probabilistic and deterministic values defined in terms of

maximum-direction rather than geometric-mean, horizontal spectral acceleration (S_a). The probabilistic MCE_R spectral response accelerations are represented by a 5 percent damped acceleration response spectrum having a 1 percent probability of collapse within a 50-year period and in the direction of the maximum horizontal response. The probabilistic Design Earthquake (DE) S_a value at any period can be taken as two-thirds of the MCE_R S_a value at the same period.

Using the Seismic Design Maps application at the Structural Engineers Association of California (SEAOC) website, a site Class C, and the latitude and longitude of the site (latitude 37.28622° N, longitude -121.940497° W), the calculated geometric mean peak ground acceleration adjusted for site class effects (PGA_M) for the MCE_G (Geometric Mean Maximum Considered Earthquake) is 0.855.

Our review of shear wave velocity (V_{S30}) information from the United States Geological Survey (USGS) A Compilation of V_{S30} Values in the United States web page indicates a V_{S30} value of 406 meters per second (m/s) on a site located about 0.7 mile southeast of the subject project site. This shear wave velocity value corresponds to a Site Class C based on ASCE 7-16.

3.3 Seismicity

The Working Group on California Earthquake Probabilities' (WGCEP) estimates of the probabilities of major earthquakes are now in their sixth iteration, with the greatest changes in approach being the inclusion of multifold rupture scenarios, in the progressive consideration of more potential seismic sources, the possibility of earthquakes on unrecognized faults, and the inclusion of the notion of fault "readiness". Current estimates (WGCEP, 2014) for the San Francisco region indicate a 72% probability of a large (magnitude 6.7 or greater) earthquake in the San Francisco Bay area as a whole over the 30-year period beginning in 2014; this overall probability is greater than the previous (WGCEP, 2007) probability of 63%, due mainly to the inclusion of multi-fault rupture scenarios. The estimate for the Calaveras fault alone is 14.4% (revised up from the 7% presented by WGCEP, 2007); for the (northern) San Andreas fault alone, 27.4% (revised upward from the WGCEP (2007) value of 21%); and for the Hayward fault, 45.3% (revised upward from the WGCEP (2007) value of 31%).

3.4 Liquefaction

Soil liquefaction is a phenomenon in which saturated granular soils, and certain fine-grained soils, lose their strength due to the build-up of excess pore water pressure during cyclic loading, such as that induced by earthquakes. Soils most susceptible to liquefaction are saturated, clean, loose, fine-grained sands and non-plastic silts. Certain gravels, plastic silts, and clays are also susceptible to liquefaction. The primary factors affecting soil liquefaction include: 1) intensity and duration of seismic shaking; 2) soil type; 3) relative density of granular soils; 4) moisture content and plasticity of fine-grained soils; 5) overburden pressure; and 6) depth to ground water.

The project site is not located in a California Geological Survey (CGS) Earthquake Zones of Required Investigation for liquefaction, fault rupture, and landsliding. The site is also not located in a Santa Clara County liquefaction, fault rupture, and landslide hazard zone.

In our opinion, the potential for liquefaction at the project site is low because of the absence of groundwater in the upper 50 feet and the generally medium dense to very dense relative density of the granular soils encountered in our drill holes.

3.5 Dynamic Compaction of Granular Soils

Dynamic compaction of granular (sandy and gravelly) soils is consolidation of the granular soils above groundwater level as a result of seismic shaking. Based on our analysis, some of the granular soils encountered in our drill holes are susceptible to dynamic compaction and the estimated potential settlement is about 0.5 inch. This settlement is in addition to static settlements from building loads and should be incorporated in the foundation design.

Based on our experience, we expect the post-tensioned slab foundations proposed for this project can be designed to accommodate the estimated 0.5 inch of total seismic settlements (predicted 1/4 inch of differential settlements). This should be confirmed with the project structural engineer. Refer to the Section 6.2.2 of this report for design parameters to accommodate static and dynamic compaction settlements.

3.6 Seismic Design Parameters

Design of the proposed structures should comply with design for structures located in seismically active areas. Structures should be designed in accordance with the requirements of governing jurisdictions and applicable building codes. GLA evaluated ASCE 7-16 seismic design parameters for the site using the SEAOC U.S. Design Maps application. The table below lists the seismic design parameters for the site. Note that, in accordance with Section 11.4.8 of ASCE 7-16, a ground motion hazard analysis is required because the Mapped Spectral Acceleration at 1.0-second Period (S_1) value for the site is greater than or equal to 0.2 g, unless the exceptions in Section 11.4.8 are met. This should be verified by the project structural engineer.

Table 4.5-1: Seismic Design Parameters for Buildings Based on 2019 CBC & ASCE 7-16	
Seismic Design Parameter	Value
Site Class	C
Site Coefficient, F_a	1.2
Site Coefficient, F_v	1.4
Mapped Spectral Acceleration at 0.2-second Period, S_s	1.733 g
Mapped Spectral Acceleration at 1.0-second Period, S_1	0.612 g
Spectral Acceleration at 0.2-second Period Adjusted for Site Class, S_{MS}	2.079 g
Spectral Acceleration at 1.0-second Period Adjusted for Site Class, S_{M1}	0.857 g
Design Spectral Response Acceleration at 0.2-second Period, S_{DS}	1.388 g
Design Spectral Response Acceleration at 1.0-second Period, S_{D1}	0.571 g
Long-period Transition Period, T_L	12 sec.

4 CONCLUSIONS AND DISCUSSION

Based on our geotechnical evaluation, it is our opinion the project site may be developed as discussed in this report, provided our geotechnical recommendations are incorporated in the design and construction of the project. Our opinions, conclusions, and recommendations are based on our understanding of the proposed development, data review, properties of soils encountered in subsurface exploration, laboratory test results, and engineering analyses. Geotechnical considerations for this project are discussed below.

4.1 Ground Rupture

The project site is not located in an Alquist-Priolo Earthquake Fault Zone. Because no active or potentially active faults are known to cross the site, it is reasonable to conclude that the risk of fault rupture through the project site is low.

4.2 Seismic Shaking

The project site is located in an area of high seismicity. Based on general knowledge of the site seismicity, it should be anticipated that, during their useful life, the proposed structures will be subject to at least one severe earthquake (magnitude 7 to 8+) that could cause considerable ground shaking at the site. It is also anticipated that the site will periodically experience small to moderate magnitude earthquakes.

4.3 Liquefaction

The project site is not located in a California Geological Survey (CGS) Earthquake Zones of Required Investigation for liquefaction. The site is also not located in a Santa Clara County liquefaction. In our opinion, the potential for liquefaction at the site is low because groundwater is deeper than 50 feet bgs.

4.4 Dynamic Compaction of Granular Soils

Our analysis indicates that some of the sandy and gravelly soils encountered in our drill holes are susceptible to dynamic compaction during seismic shaking. The estimated total settlement from dynamic compaction is about 0.5 inch (about 1/4 inch of differential settlements). This settlement is in addition to static settlements from building loads and should be incorporated in the foundation design.

Based on our experience, we expect the post-tensioned slab foundations proposed for this project can be designed to accommodate the estimated total and differential settlements from dynamic compaction. Refer to Section 6.2.2 of this report for recommendations.

4.5 Expansion Potential of Surficial Soils

The results of an Atterberg limits test performed on a near-surface soil sample indicate the soil has an intermediate plasticity which generally corresponds to a medium expansion potential.

Expansive soils are characterized by their ability to undergo significant volume change (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from rainfall, landscape irrigation, perched groundwater, drought or other factors. Changes in soil moisture may result in unacceptable settlement or heave of structures, concrete slabs and pavements supported on these materials. Depending on the extent and location below finished subgrade, these soils could have a detrimental effect on the proposed construction.

The proposed buildings will be supported on post-tensioned (PT) slab foundations. The PT slabs should be designed for the potential effects of the underlying medium expansion potential soils as recommended in Section 6.2.2 of this report. Exterior concrete slabs should be constructed on a layer of “non-expansive” fill or proper moisture-conditioned subgrade soil.

4.6 Existing Improvements

Existing improvements at the site include miscellaneous structures, underground utilities, fences, pavements, and isolated trees. Prior to construction, the existing structures and improvements should be removed and the resulting excavations should be properly backfilled with engineered fill under the observation and testing of the project Geotechnical Engineer.

Some of the properties adjoining the project site have been developed. Design and construction of project improvements should consider the neighboring structures and improvements to avoid undermining or adversely impacting these existing structures and improvements.

5 GEOTECHNICAL RECOMMENDATIONS

5.1 Earthwork

5.1.1 Site Preparation, Clearing and Stripping

Prior to grading, construction areas should be cleared of all structures and foundations, obstructions, deleterious materials, abandoned or designated utility lines, designated trees, and other below grade obstacles encountered during the clearing operation. Tree stumps should be grubbed. Roots with diameter of about 1 inch or larger or length of about 3 feet or longer should be removed. Depressions, excavations, and holes that extend below the planned finish grades should be cleaned and backfilled with engineered fill compacted to the requirements given under the section of "Engineered Fill Placement and Compaction."

After clearing, vegetated areas should be stripped to sufficient depth to remove vegetation and organic-laden topsoil. Organic laden soils are defined as soils with more than 3 percent by weight of organic content. Stripped material may be stockpiled for use in landscape areas if approved by the project landscape architect; otherwise, it should be removed from the site. For planning purposes, an estimated stripping depth of 2 to 4 inches may be assumed in vegetated areas. The actual stripping depth should be determined in the field by the Geotechnical Engineer at the time of construction.

5.1.2 Excavation, Temporary Construction Slopes, Shoring and Dewatering

Excavations for this project are expected to include demolition excavations, cuts to achieve design grades, over-excavations to remove loose and/or disturbed soils, trenching to construct new underground utilities, and foundation excavations. Excavation walls in clayey soil and less than 5 feet in height should be able to stand near vertical with minimal bracing, provided proper moisture content in the soil is maintained. Granular (sand and gravel) soils, typically have little or no cohesion, will require more extensive bracing or laying back because they are prone to sudden collapse. Excavations and temporary construction slopes should be constructed in accordance with the current CAL-OSHA safety standards and local jurisdiction. The stability and safety of excavations, braced or unbraced, is the responsibility of the contractor. Care should be exercised when excavating in the proximity of existing structures and improvements.

Contractors are responsible for the design, installation, maintenance, and removal of temporary shoring and bracing systems. The presence of existing structures, pavements, and underground utilities must be incorporated in the design of the shoring and bracing systems.

Trench excavations adjacent to existing or proposed foundations should be above an imaginary plane having an inclination of 1½:1 (horizontal to vertical) extending down from the outer, bottom edge of the foundations. If achieving this is not possible, GLA should be contacted to evaluate options, if any, to protect existing structures.

5.1.3 Subgrade Preparation

In areas to receive engineered fills, foundations, concrete slabs-on-grade, and pavements, the subgrade soils should be scarified to a depth of 12 inches, moisture-conditioned, and compacted in accordance with the recommendations given in the "Engineered Fill Placement and Compaction" section below. In building and concrete slab-on-grade areas, subgrade preparation should extend at least 5 feet horizontally beyond the limits of the proposed structures and any adjoining flatwork, unless it is restricted by existing improvements. In pavement areas, subgrade preparation should extend at least 3 feet beyond the back of the curbs or pavements.

Prepared soil subgrades should be non-yielding when proof-rolled by a fully-loaded water truck or similar weight equipment. Moisture conditioning of subgrade soils should consist of adding water if the soils are too dry and allowing the soils to dry if the soils are too wet. After the subgrades are properly prepared, the areas may be raised to design grades by placement of engineered fill.

Wet soils should be anticipated during and after rainy months. Where encountered, unstable, wet or soft soil will require processing before compaction can be achieved. If construction schedule does not allow for air-drying, other means such as lime or cement treatment of the soil or excavation and replacement with suitable material may be considered. Geotextile fabrics may also be used to help stabilize the subgrade. The method to be used should be determined at the time of construction based on the actual site conditions. We recommend obtaining unit prices for subgrade stabilization during the construction bid process.

5.1.4 "Non-expansive" Fill

Exterior concrete slabs-on-grade should be constructed either on a section of "non-expansive" fill or properly moisture-conditioned on-site soil. If "non-expansive" fill is used, it should be at least 6 inches thick below the bottom of the slabs. "Non-expansive" fill should meet the recommendations in the "Materials for Engineered Fill" section and should be compacted per the "Engineered Fill Placement and Compaction" section below.

5.1.5 Materials for Fill

In general, on-site soils with an organic content of less than 3 percent by weight, free of deleterious materials or hazardous substances, and meeting the gradation requirements below may be used as engineered fill except where special material (such as "non-expansive" fill, capillary break rock, etc.) is required.

Engineered fill material should not contain rocks or lumps larger than 3 inches in greatest dimension, should not contain more than 15 percent of the material larger than 1½ inches, and should contain at least 20 percent passing the No. 200 sieve. In addition to these

requirements, import fill, including “non-expansive” fill, should have a low expansion potential as indicated by Plasticity Index of 15 or less (per ASTM D4318), or Expansion Index of less than 20 (per ASTM D4829).

All fills should be approved by the project Geotechnical Engineer prior to delivery to the site. At least 5 working days prior to importing to the site, a representative sample of the proposed import fill should be delivered to our laboratory for evaluation. Import fills should be tested and approved for residential use per the California Department of Toxic Substances Control (DTSC) guidelines.

5.1.6 Engineered Fill Placement and Compaction

Engineered fill should be placed in horizontal lifts each not exceeding 8 inches in thickness, moisture conditioned to the required moisture content, and mechanically compacted to the recommendations below. Relative compaction or compaction is defined as the in-place dry density of the compacted soil divided by the laboratory maximum dry density as determined by ASTM Test Method D1557, latest edition, expressed as a percentage. Moisture conditioning of soils should consist of adding water to the soils if they are too dry and allowing the soils to dry if they are too wet.

Engineered fills consisting of on-site clay soils should be compacted to between 88 and 93 percent relative compaction at moisture content between 2 and 5 percent above the laboratory optimum value. Engineered fills consisting of soils of low expansion potential, including “non-expansive” fill, should be compacted to a minimum of 90 percent relative compaction with moisture content between about 1 and 3 percent above the laboratory optimum value. In pavement areas, the upper 8 inches of subgrade soil should be compacted to a minimum of 95 percent relative compaction. Aggregate base in vehicle pavement areas should be compacted at slightly above the optimum moisture content to a minimum of 95 percent relative compaction.

5.1.7 Utility Trench Backfill

Utility trenches should be backfilled in accordance with the City of Campbell Standard Details C-21 and C-22 unless a different procedure is specified by the utility company. Detail C-21, applies to lateral connections, calls for 2-sack sand-cement slurry backfill over the pipe bedding material. Detail C-22, applies for main lines, calls for approved select native or structural backfill over the pipe bedding material. Native backfill is natural soil from the project area. Approval of native soil for use as backfill should be made by the project geotechnical engineer. Bedding material from the bottom of the trench to 12 inches above the top of pipe should be compacted to at least 90 percent relative compaction. Backfill material above the bedding should be compacted to at least 90 percent relative compaction with at least 95 percent relative compaction for the top 30 inches of backfill below the bottom of the pavement section. Evaluation of relative compaction should be based on ASTM D1557, latest edition.

The bedding and backfill materials should be placed in lifts each not exceeding 6 inches in uncompacted thickness. Thicker lifts may be allowed if the contractor can demonstrate that the recommended level of compaction can be achieved with the compaction equipment and procedures used. Compaction should be performed by mechanical means only. Water jetting or flooding to attain compaction of backfill should not be permitted.

5.1.8 Considerations for Soil Moisture and Seepage Control

Subgrade soil and engineered fill should be compacted at moisture content meeting our recommendations. Consideration should be given to reducing the potential for water infiltration from the exterior to under the buildings through utility lines crossing the building perimeter. In utility lines crossing beneath perimeter foundations, permeable backfill should be terminated at least 1 foot outside of the perimeter foundation. Impermeable material, such as concrete or clay soil, should be used for the entire trench depth to act as a seepage cutoff.

Where concrete slabs or pavements abut against landscaped areas, the base rock layer and subgrade soil should be protected against saturation. Water if allowed to seep into the subgrade soil or pavement section could reduce the service life of the improvements. Methods that may be considered to reduce infiltration of water include: 1) subdrains installed behind curbs and slabs in landscape areas; 2) vertical cut-offs, such as a deepened curb section, or equivalent, extending at least 2 inches into the subgrade soil; and 3) use of a drip or controlled irrigation system for landscape watering.

5.1.9 Wet Weather Construction

If site grading and construction is to be performed during the winter rainy months, the owner and contractors should be fully aware of the potential impact of wet weather. Rainstorms can cause delay to construction and damage to previously completed work by saturating compacted pads or subgrades, or flooding excavations.

Earthwork during rainy months will require extra effort and caution by the contractors. The contractors are responsible for protecting their work to avoid damage by rainwater. Standing pools of water should be pumped out immediately. Construction during wet weather conditions should be addressed in the project construction bid documents and/or specifications. We recommend the contractors submit a wet weather construction plan outlining procedures they will employ to protect their work and to minimize damage to their work by rainstorms.

5.2 Foundations

5.2.1 General

The proposed residential structures should be supported on post-tensioned slab foundations. Minor structures, such as landscaping retaining walls, may be supported on conventional

footing or drilled pier foundations. General recommendations for design of these foundations are presented below.

The Geotechnical Engineer should review the foundation plans and details before construction and observe the foundation excavations during construction to evaluate if the foundation excavations extend into suitable bearing material. Prior to placement of concrete, foundation excavations should be cleaned of loose soils. If unsuitable soils are encountered in the foundation excavations, the soils should be removed as recommended by our Geotechnical Engineer and replaced with approved material such as compacted engineered fill or lean concrete.

Foundation excavations should not be allowed to dry before placement of concrete. If visible cracks appear in the foundation excavations, the excavations should be thoroughly moisture conditioned beginning at least 2 days prior to placement of concrete to close all cracks. It is also important that the base of the foundation excavations not be allowed to become excessively wet, resulting in soft soils. Water should not be allowed to pond in the bottom of the excavations. Areas that become water damaged should be over-excavated to a firm base. The foundation excavations should be monitored by our representative for compliance with appropriate moisture control and to confirm the adequacy of the bearing materials.

To maintain the desired support, the bottom of foundations and other structural improvements (e.g. curbs, sidewalks, etc.) adjacent to below-ground improvements, including utility trenches and bio-retention facilities, should be below an imaginary plane having an inclination of 1.5 horizontal to 1 vertical, extending upward from the bottom edge of the adjacent buried improvements.

5.2.2 Post-tensioned Slabs (Buildings)

The proposed residential structures may be supported on post-tensioned (PT) slab foundations bearing on properly moisture-conditioned and compacted soil subgrades. Preparation of soil subgrade, moisture conditioning, and compaction of soil and engineered fill should be as recommended in the "Earthwork" section of this report. At least one week prior to slab construction, the moisture content of the subgrade soil should be evaluated. If the soil's moisture content is lower than the recommended value of at least 2 percent above the laboratory optimum moisture content, water should be added to bring the soil's moisture content to above the recommended value.

The following parameters may be used with the 2004 PTI "Design of Post-Tensioned Slabs-on-Ground, Third Edition" manual for design of the PT slabs.

Parameters for Design of Post-tensioned Slabs Constructed on Native Subgrade Soil		
Parameters	Scenario 1 – PT on native soil	Scenario 2 – PT with effects from dynamic compaction settlements
e_m (center lift)	9 feet	9 feet
e_m (edge lift)	5 feet	5 feet
y_m (center lift)	0.5 inch	0.75 inch
y_m (edge lift)	1.0 inch	1.25 inches

Allowable soil bearing pressure = 1,500 psf for dead plus live loads, with a one-third increase when including transient loads, such as wind or seismic

A deepened edge, at least 6 inches wide, should be constructed along the perimeter of the PT slabs. The deepened edge should extend to at least 18 inches below the bottom of the PT slabs (see Figure 3). The deepened edge can help reduce moisture infiltration to under the PT slabs.

Where interior building grades are higher than the exterior grades, the perimeter foundation elements should be designed to resist the lateral soil pressure and surcharge loads acting on the foundations. The bottom of the perimeter foundations should extend at least 18 inches below the lowest finish grades, excluding landscaping soils which are typically not compacted and should not be considered for structural support.

We understand the PT slabs will be constructed on 1 to 2 inches of sand over a 15-mil visqueen vapor barrier over compacted subgrade soil. Sand has been used for protection of the vapor barrier during construction and to allow dissipation of concrete mix water during curing. The use of sand, or equivalent material, should be determined by the project structural engineer or architect. A lower water-cement ratio (0.45 to 0.50) will help reduce the permeability of the concrete and, hence, vapor transmission through the slabs.

Settlements are expected to be primarily elastic. Post construction total and differential settlements of the PT slabs are anticipated to be less than 1 and ½ inch, respectively.

5.2.3 Conventional Footings (Retaining Walls, etc.)

Footings, continuous and isolated, may be used to support minor structures and landscaping retaining walls. Footings should bear on undisturbed on-site soil and/or properly compacted engineered fill. Preparation of soil subgrade, moisture conditioning, and compaction of soil and engineered fill should be as recommended in the “Earthwork” section of this report.

Footings may be designed for a net allowable bearing pressure of 3,000 pounds per square foot due to dead plus live loads, with a one-third increase when including transient loads such as wind or seismic. The footing bottom should be at least 18 inches below pad grade or lowest adjacent finish grade, whichever provides a deeper embedment. Footings should be at least

12 inches wide. Footing reinforcement should be determined by the Structural Engineer.

Resistance to lateral loads may be developed from a combination of friction between the bottom of foundations and the supporting subgrade, and by passive resistance acting against the vertical sides of the foundations. Footings bearing on native soil or engineered fill may be designed using an ultimate friction coefficient of 0.3 between the foundations and supporting subgrade, and an ultimate passive resistance of 300 pounds per cubic foot (pcf, equivalent fluid weight) acting against the embedded sides of the foundations. The passive pressure can be assumed to act starting at the top of the lowest adjacent grade in paved areas. In unpaved areas, the passive pressure can be assumed to act starting at a depth of 1 foot below grade. It should be noted that the passive resistance value discussed above is only applicable where the concrete is placed directly against undisturbed soil or engineered fills. Voids created by the use of forms should be backfilled with properly compacted engineered fill or with concrete.

Total post-construction settlement of the foundations under non-seismic conditions is anticipated to be up to about 1 inch, with up to about ½ inch of differential settlement over a distance of about 30 feet.

5.2.4 Drilled Pier Foundations

Drilled, cast-in-place, reinforced concrete piers should be designed to derive their vertical supporting capacity from “skin friction” between the pier shafts and the surrounding earth materials. Piers should have a diameter of 12 inches or greater. Center to center spacing of the piers should be a minimum of 3 pier diameters. Reinforcement in the piers should be determined by the structural engineer.

Recommended allowable skin friction values for design of drilled piers are shown in Table 6.2-2 below. These values are for dead plus live vertical loads, and may be increased by one-third when including transient loads, such as wind or seismic. End bearing capacity of the piers should be ignored.

Resistance to lateral loads may be calculated based on passive soil pressure acting against the piers. The values in Table 6.2-2 may be assumed to act on 2 pier diameters, for level ground surface in front of the piers in the direction of load application. It should be noted that passive resistance is only applicable where the concrete is placed directly against undisturbed soil or engineered fill.

Depth (feet)	Allowable Skin Friction (psf)¹	Ultimate Passive Value (psf/ft)¹
2 - 8	500	300
8 – 20	400	275

Note: 1. The upper 2 feet of soil should be ignored in the calculation of vertical and passive pier capacities.

The presence of granular soils should be considered in the design and construction of the foundation piers because granular soils are prone to caving if the holes are not cased. Steel casing should be provided to keep the pier holes open.

5.3 Concrete Slabs-on-Grade

The interior building slabs will be post-tensioned concrete slabs.

Exterior concrete slabs-on-grade for this project will be limited to driveways and exterior flatwork such as patios and walkways. Concrete for driveways should be at least 6 inches thick and should be constructed on a 4-inch minimum thick section of Class 2 Aggregate Base over properly prepared subgrade soil, compacted as recommended in the "Earthwork" section of this report. Concrete for exterior patios and walkways should be at least 4 inches thick and should be constructed either on a layer of "non-expansive" fill at least 6 inches thick or on properly moisture-conditioned and compacted subgrade soil. Preparation of subgrade soil should be as recommended in the "Earthwork" section of this report.

For exterior slabs constructed without a "non-expansive" fill layer, the moisture content of the subgrade soil should be evaluated at least four working days prior to slab construction. If the soil's moisture content is lower than the recommended value of at least 2 percent above the laboratory optimum moisture content, water should be added to bring the soil's moisture content to above the recommended value. Design of reinforcement, joint spacing, etc. for concrete slabs is the responsibility of the design engineer.

Exterior concrete slabs-on-grade may be cast free from adjacent foundations or other non-heaving edge restraints. This may be accomplished by using a strip of 1/2-inch asphalt-impregnated felt divider material between the slab edges and the adjacent structure. Frequent construction or control joints should be provided in all concrete slabs where cracking is objectionable. Continuous reinforcing or dowels at the construction and control joints will also aid in reducing uneven slab movements.

5.4 Retaining Walls

Retaining walls for this project may consist of landscaping walls and we have anticipated these walls will have exposed height of about 3 to 5 feet. Retaining walls should be designed to resist lateral earth pressure and surcharge forces acting on the walls. Lateral pressures will depend on the degree of movement the walls are allowed (or desired), the type of backfill, the magnitude of external loads, and subsurface drainage provisions.

For static loading conditions, the walls may be designed using at-rest or active soil pressure. At-rest soil pressure should be used for walls where movement at the top of walls is restrained or undesirable. Wall movements could cause settlement of backfill and structures supported on the backfill. Active soil pressure may be used for retaining walls where the top of walls is free to deflect and resulting movement of the backfill is acceptable. The at-rest and active soil

pressures given below are for level backfill surface and do not include hydrostatic pressure caused by water behind the walls.

Condition	Lateral Soil Pressure (Equivalent Fluid Weight) for Level Backfill
Active	45 pcf
At-rest	55 pcf

Note: To develop active soil pressures, wall movements of about 0.005H to 0.01H may be necessary for cohesive soils, with up to 0.005H for cohesionless soils.

Pressures due to static external loads should be added to the soil pressures recommended above in the wall design. For uniform vertical load at the ground surface, the additional lateral pressure on the walls should be calculated as a uniform pressure equal to the magnitude of the vertical load multiplied by a factor. For level backfill slope, the factor is 0.38 for active soil condition and 0.5 for at-rest soil condition. For other slope inclinations and other types of surcharge loads, such as vehicle loads, point loads, strip loads, consult our office for specific recommendations.

Foundations for retaining walls may consist of footings or drilled piers designed using the recommendations in the “Foundations” Section of this report.

To achieve a drained backfill condition, a subsurface drain should be installed behind each wall extending from the wall bottom to about 1 foot below finished grade. The drain should consist of a 12-inch minimum wide blanket of drainage material consisting of either Class 2 Permeable material (Caltrans Standard Specifications, Section 68) or clean, 1/2 to 3/4-inch maximum size crushed rock or gravel. If crushed rock or gravel is used, it should be encapsulated in a geotextile filter fabric, such as Mirafi 140N or equivalent. Filter fabric is optional if Class 2 Permeable material is used. The top 1 foot below finish grade should be backfilled with compacted clayey soil to reduce infiltration of surface water.

A 4-inch minimum diameter, perforated, schedule 40 PVC (or equivalent) pipe should be installed (with perforations facing down) along the base of each wall on a 2-inch thick bed of drain rock, regardless whether drain rock or pre-fabricated drainage panel is used. The pipes should be sloped to drain by gravity to a proper collection system and be discharged at a proper outlet as designed by the project Civil Engineer.

Backfill against retaining walls should be compacted as discussed in the “Earthwork” Section of this report. Over-compaction should be avoided because increased compaction effort can result in lateral pressures significantly higher than those recommended above. Backfill placed within 3 feet of the walls should be compacted with hand-operated equipment.

5.5 Vehicle Pavements

Vehicle pavements for this project will include interior streets, primarily serving automobiles

and light pickup trucks, with occasional heavy vehicles, such as delivery and garbage trucks. If the pavements are constructed prior to completion of construction, the pavements will be subject to construction traffic including heavy delivery and concrete trucks.

An R-value of 26 was measured on a bulk soil sample collected at the site. For design purposes, an R-value of 20 was used to calculate the pavement sections tabulated below using the Caltrans pavement section design procedures.

DESIGN TRAFFIC INDEX	HOT MIX ASPHALT (inches)	CLASS 2 AGGREGATE BASE (inches)	TOTAL (inches)
5.0	3.0	7.5	10.5
5.5	3.0	9.0	12.0
6.0	3.5	9.5	13.0
6.5	3.5	11.5	15.0
6.5	4.0	10.5	14.5

Pavement sections should be constructed on soil subgrades that have been prepared as outlined in the “Earthwork” section of this report. The upper 8 inches of soil subgrade in pavement areas should be compacted to a minimum of 95 percent relative compaction. The full section of aggregate base and aggregate subbase should be compacted to a minimum of 95 percent relative compaction. Evaluation of relative compaction should be based on ASTM D1557, latest edition. The Class 2 Aggregate Base material should conform to Section 26 of the Caltrans Standard Specifications and the Class 2 Aggregate Subbase material should conform to Section 25 of the Caltrans Standard Specifications.

5.6 Surface and Subsurface Drainage

Engineering design of grading and drainage at the site is the responsibility of the project Civil Engineer. We suggest the following for consideration by the project Civil Engineer, as appropriate.

Sufficient surface drainage should be provided to direct water away from buildings, foundations, concrete slabs-on-grade and pavements, and towards suitable collection and discharge facilities. Ponding of surface water should be avoided by establishing positive drainage away from all improvements.

6 PLAN REVIEW, EARTHWORK AND FOUNDATION OBSERVATION

Post-report geotechnical services by Geo-Logic Associates (GLA), typically consisting of pre-construction design consultations and reviews and construction observation and testing services, are necessary for GLA to confirm the recommendations contained in this report. This report is based on limited sampling and investigation, and by those constraints may not have discovered local anomalies or other varying conditions that may exist on the project site. Therefore, this report is only preliminary until GLA can confirm that actual conditions in the ground conform to those anticipated in the report. Accordingly, as an integral part of this report, GLA recommends post-report, construction related geotechnical services to assist the project team during design and construction of the project. GLA requires that it perform these services if it is to remain as the project Geotechnical Engineer-of-record.

During design, GLA can provide consultation and supplemental recommendations to assist the project team in design and value engineering, especially if the project design has been modified after completion of our report. It is impossible for us to anticipate every design scenario and use of construction materials during preparation of our report. Therefore, retaining GLA to provide post-report consultation will help address design changes, answer questions and evaluate alternatives proposed by the project designers and contractors.

Prior to issuing project plans and specifications for construction bidding purposes, GLA should review the grading, drainage and foundation plans and the project specifications to determine if the intent of our recommendations has been incorporated in these documents. We have found that such a review process will help reduce the likelihood of misinterpretation of our recommendations which may cause construction delay and additional cost.

Construction phase services can include, among other things, the observation and testing during site clearing, stripping, excavation, mass grading, subgrade preparation, fill placement and compaction, backfill compaction, foundation construction and pavement construction activities.

Geo-Logic Associates would be pleased to provide cost proposals for follow-up geotechnical services. Post-report geotechnical services may include additional field and laboratory services.

7 LIMITATIONS

In preparing the findings and professional opinions presented in this report, Geo-Logic Associates (GLA) has endeavored to follow generally accepted principles and practices of the engineering geologic and geotechnical engineering professions in the area and at the time our services were performed. No warranty, either express or implied, is provided.

The conclusions and recommendations contained in this report are based, in part, on information that has been provided to us. In the event that the general development concept or general location and type of structures are modified, our conclusions and recommendations shall not be considered valid unless we are retained to review such changes and to make any necessary additions or changes to our recommendations. To remain as the project Geotechnical Engineer-of-record, GLA must be retained to provide geotechnical services as discussed under the Post-report Geotechnical Services section of this report.

Subsurface exploration is necessarily confined to selected locations and conditions may, and often do, vary between these locations. Should conditions different from those described in this report be encountered during project development, GLA should be consulted to review the conditions and determine whether our recommendations are still valid. Additional exploration, testing, and analysis may be required for such evaluation.

Should persons concerned with this project observe geotechnical features or conditions at the site or surrounding areas which are different from those described in this report, those observations should be reported immediately to GLA for evaluation.

It is important that the information in this report be made known to the design professionals involved with the project, that our recommendations be incorporated into project drawings and documents, and that the recommendations be carried out during construction by the contractor and subcontractors. It is not the responsibility of GLA to notify the design professionals and the project contractors and subcontractors.

The findings, conclusions, and recommendations in this report are applicable only to the specific project development on this specific site. These data should not be used for other projects, sites, or purposes unless they are reviewed by GLA or a qualified geotechnical professional.

Report prepared by,
Geo-Logic Associates

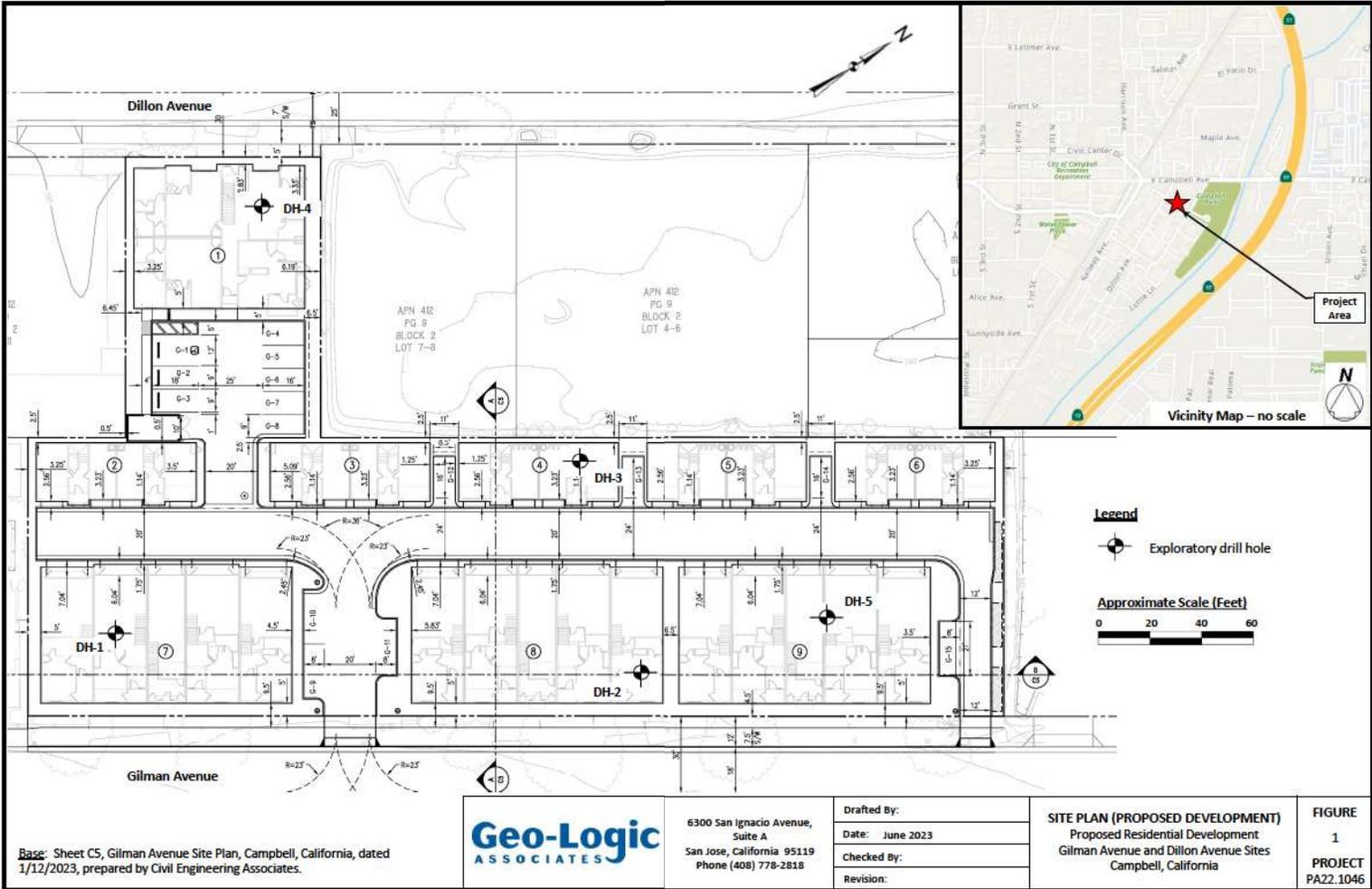


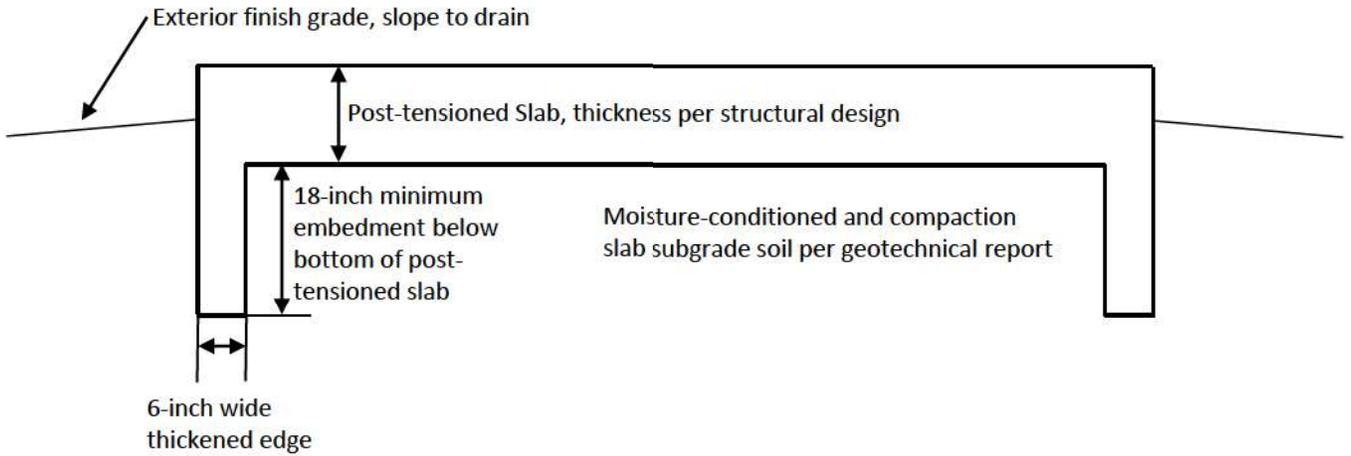
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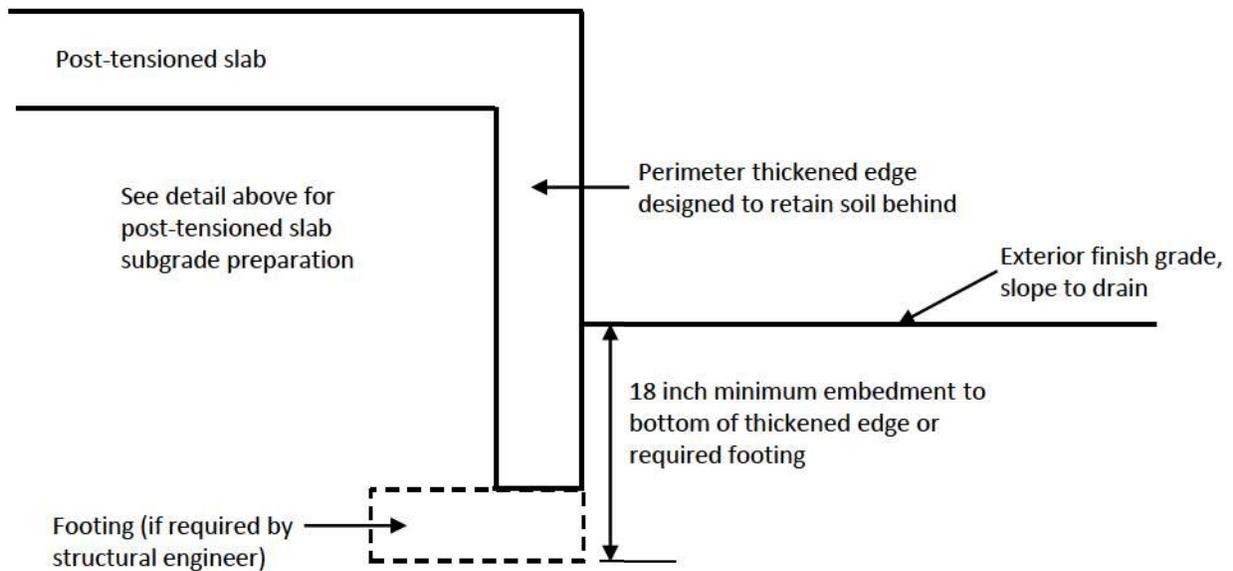
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Copies: Robson Homes, Richard Yee





Subgrade Preparation and Thickened Edge for Post-tensioned Slab Foundations



Foundation Embedment for Post-tensioned Slabs with Differential Grades

Note:

1. Refer to geotechnical report for detailed recommendations.

Schematic Only – Not to Scale



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**POST-TENSIONED SLAB
TYPICAL SECTION**
Proposed Residential Development
Gilman Avenue and Dillon Avenue Sites
Campbell, California

**FIGURE
3
PROJECT
PA22.1046**

Compiled by:

Date: June 2023

Reviewed by:

Revision:

APPENDIX A

KEYS TO SOIL CLASSIFICATION

AND

DRILL HOLE LOGS

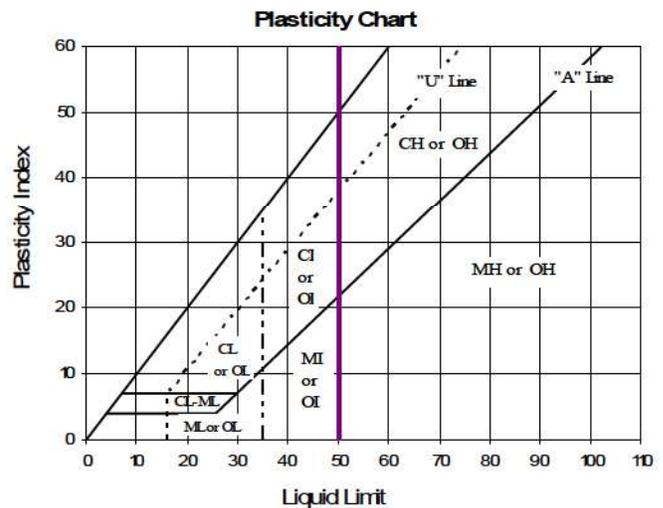
KEY TO SOIL CLASSIFICATION - FINE GRAINED SOILS
(50% OR MORE IS SMALLER THAN NO. 200 SIEVE SIZE)
(modified from ASTM D2487 to include fine grained soils with intermediate plasticity)

MAJOR DIVISIONS			GROUP SYMBOLS	GROUP NAMES
SILTS AND CLAYS (Liquid Limit less than 35) Low Plasticity	Inorganic	PI < 4 or plots below "A" line	ML	Silt, Silt with Sand or Gravel, Sandy or Gravelly Silt, Sandy or Gravelly Silt with Sand or Gravel
	Inorganic	PI > 7 or plots on or above "A" line	CL	Lean Clay, Lean Clay with Sand or Gravel, Sandy or Gravelly Lean Clay, Sandy or Gravelly Lean Clay with Sand or Gravel
	Inorganic	PI between 4 and 7	CL-ML	Silty Clay, Silty Clay with Sand or Gravel, Sandy or Gravelly Silty Clay, Sandy or Gravelly Silty Clay with Sand or Gravel
	Organic	See footnote 3	OL	Organic Silt (below "A" Line) or Organic Clay (on or above "A" Line) ^(1,2)
SILTS AND CLAYS (35 ≤ Liquid Limit < 50) Intermediate Plasticity	Inorganic	PI < 4 or plots below "A" line	MI	Silt, Silt with Sand or Gravel, Sandy or Gravelly Silt, Sandy or Gravelly Silt with Sand or Gravel
	Inorganic	PI > 7 or plots on or above "A" line	CI	Clay, Clay with Sand or Gravel, Sandy or Gravelly Clay, Sandy or Gravelly Clay with Sand or Gravel
	Organic	See footnote 3	OI	Organic Silt (below "A" Line) or Organic Clay (on or above "A" Line) ^(1,2)
SILTS AND CLAYS (Liquid Limit 50 or greater) High Plasticity	Inorganic	PI plots below "A" line	MH	Elastic Silt, Elastic Silt with Sand or Gravel, Sandy or Gravelly Elastic Silt, Sandy or Gravelly Elastic Silt with Sand or Gravel
	Inorganic	PI plots on or above "A" line	CH	Fat Clay, Fat Clay with Sand or Gravel, Sandy or Gravelly Fat Clay, Sandy or Gravelly Fat Clay with Sand or Gravel
	Organic	See note 3 below	OH	Organic Silt (below "A" Line) or Organic Clay (on or above "A" Line) ^(1,2)

1. If soil contains 15% to 29% plus No. 200 material, include "with sand" or "with gravel" to group name, whichever is predominant.
2. If soil contains ≥30% plus No. 200 material, include "sandy" or "gravelly" to group name, whichever is predominant. If soil contains ≥15% of sand or gravel sized material, add "with sand" or "with gravel" to group name.
3. Ratio of liquid limit of oven dried sample to liquid limit of not dried sample is less than 0.75.

CONSISTENCY	UNCONFINED SHEAR STRENGTH (KSF)	STANDARD PENETRATION (BLOWS/FOOT)
VERY SOFT	< 0.25	< 2
SOFT	0.25 – 0.5	2 – 4
FIRM	0.5 – 1.0	5 – 8
STIFF	1.0 – 2.0	9 – 15
VERY STIFF	2.0 – 4.0	16 – 30
HARD	> 4.0	> 30

MOISTURE	CRITERIA
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below the water table



KEY TO SOIL CLASSIFICATION – COARSE GRAINED SOILS
(MORE THAN 50% IS LARGER THAN NO. 200 SIEVE SIZE)
(modified from ASTM D2487 to include fines with intermediate plasticity)

MAJOR DIVISIONS			GROUP SYMBOLS	GROUP NAMES ¹
GRAVELS (more than 50% of coarse fraction is larger than No. 4 sieve size)	Gravels with less than 5% fines	$Cu \geq 4$ and $1 \leq Cc \leq 3$	GW	Well Graded Gravel, Well Graded Gravel with Sand
		$Cu < 4$ and/or $1 > Cc > 3$	GP	Poorly Graded Gravel, Poorly Graded Gravel with Sand
	Gravels with 5% to 12% fines	ML, MI or MH fines	GW-GM	Well Graded Gravel with Silt, Well Graded Gravel with Silt and Sand
			GP-GM	Poorly Graded Gravel with Silt, Poorly Graded Gravel with Silt and Sand
		CL, CI or CH fines	GW-GC	Well Graded Gravel with Clay, Well Graded Gravel with Clay and Sand
			GP-GC	Poorly Graded Gravel with Clay, Poorly Graded Gravel with Clay and Sand
	Gravels with more than 12% fines	ML, MI or MH fines	GM	Silty Gravel, Silty Gravel with Sand
		CL, CI or CH fines	GC	Clayey Gravel, Clayey Gravel with Sand
		CL-ML fines	GC-GM	Silty Clayey Gravel; Silty, Clayey Gravel with Sand
	SANDS (50% or more of coarse fraction is smaller than No. 4 sieve size)	Sands with less than 5% fines	$Cu \geq 6$ and $1 \leq Cc \leq 3$	SW
$Cu < 6$ and/or $1 > Cc > 3$			SP	Poorly Graded Sand, Poorly Graded Sand with Gravel
Sands with 5% to 12% fines		ML, MI or MH fines	SW-SM	Well Graded Sand with Silt, Well Graded Sand with Silt and Gravel
			SP-SM	Poorly Graded Sand with Silt, Poorly Graded Sand with Silt and Gravel
		CL, CI or CH fines	SW-SC	Well Graded Sand with Clay, Well Graded Sand with Clay and Gravel
			SP-SC	Poorly Graded Sand with Clay, Poorly Graded Sand with Clay and Gravel
Sands with more than 12% fines		ML, MI or MH fines	SM	Silty Sand, Silty Sand with Gravel
		CL, CI or CH fines	SC	Clayey Sand, Clayey Sand with Gravel
		CL-ML fines	SC-SM	Silty, Clayey Sand; Silty, Clayey Sand with Gravel

US STANDARD SIEVES

3 Inch ¾ Inch No. 4 No. 10 No. 40 No. 200

	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES & BOULDERS	GRAVELS		SANDS			SILTS AND CLAYS

RELATIVE DENSITY (SANDS AND GRAVELS)	STANDARD PENETRATION (BLOWS/FOOT)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	50+

1. Add "with sand" to group name if material contains 15% or greater of sand-sized particle. Add "with gravel" to group name if material contains 15% or greater of gravel-sized particle.

MOISTURE	CRITERIA
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below the water table

DATE: 10/25/2022		LOG OF EXPLORATORY DRILL HOLE						DH- 1							
PROJECT NAME: Gilman Avenue & Dillon Avenue Sites				PROJECT NUMBER: PA22.1046											
DRILL RIG: Mobile B-53B, 140-lb downhole hammer				LOGGED BY: FS											
HOLE DIAMETER: 8-inch hollow stem auger				HOLE ELEVATION: ---											
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---											
DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)		
PAVEMENT (±2" AC over ±6" AB)															
SANDY CLAY: Dark yellowish brown (10YR 3/4), moist, very stiff		CI	1	S											
			2	D	19	3.25			13		84				
			3												
			4	S											
			5	D	9	2.3				12		83			
			6												
			7												
SANDY LEAN CLAY: Dark yellowish brown (10YR 3/4), moist, very stiff		CL	8												
			9	S											
			10	D	16	3.5 4.0			9		94				
CLAYEY SAND with GRAVEL: Dark yellowish brown (10YR 3/4), moist, dense; fine to coarse sand, with fine to coarse gravel		SC	12												
			13												
			14	S											
WELL GRADED SAND with GRAVEL and CLAY: Dark yellowish brown (10YR 3/4), moist, dense; fine to coarse sand, with fine to coarse gravel		SW-SC	15	D	59				3		108				
			16												
			17												
BOTTOM OF HOLE @ 20 FEET No Groundwater Encountered			18												
			19	S		33									
			20	I											

DATE: 10/25/2022		LOG OF EXPLORATORY DRILL HOLE						DH- 2							
PROJECT NAME: Gilman Avenue & Dillon Avenue Sites				PROJECT NUMBER: PA22.1046											
DRILL RIG: Mobile B-53B, 140-lb downhole hammer				LOGGED BY: FS											
HOLE DIAMETER: 8-inch hollow stem auger				HOLE ELEVATION: ---											
SAMPLER:		D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample		GROUND WATER DEPTH:		Initial: --- Final: ---									
DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)		
PAVEMENT (±2" AC over ±6" AB)															
SANDY CLAY: Dark yellowish brown (10YR 3/4), moist, very stiff		CI	1	S	27	2.75			12		90				
			2	D		3.25									
			3												
			4	S	19	2.75									
5	D	2.0	11	84											
brown (10YR 4/3)			6												
			7												
			8	SC											
			9	S	27										
10	D	5	109												
CLAYEY SAND with GRAVEL: Dark yellowish brown (10YR 3/4), moist, medium dense; fine to coarse sand, with fine to coarse gravel			11												
			12												
			13												
			14	S	31										
15	D	5	107												
WELL GRADED SAND with GRAVEL and CLAY: Dark yellowish brown (10YR 3/4), moist, dense; fine to coarse sand, with fine to coarse gravel		SW-SC	16												
			17												
			18												
			19	S	31										
20	I														
BOTTOM OF HOLE @ 20 FEET No Groundwater Encountered															

DATE: 10/25/2022		LOG OF EXPLORATORY DRILL HOLE							DH- 3						
PROJECT NAME: Gilman Avenue & Dillon Avenue Sites					PROJECT NUMBER: PA22.1046										
DRILL RIG: Mobile B-53R, auto hammer					LOGGED BY: FS										
HOLE DIAMETER: 8-inch hollow stem auger					HOLE ELEVATION: ---										
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample					GROUND WATER DEPTH: Initial: --- Final: ---										
DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)		
PAVEMENT (±2" AC over ±6" AB)															
SANDY CLAY: Dark yellowish brown (10YR 3/4), moist, stiff stiff to very stiff		CI	1	S											
			2	D	6	2.0	72	39	16	21	87				
			3												
		stiff to very stiff	CI	4	S										
				5	D	6	2.3			15		88			
				6											
				7											
SANDY LEAN CLAY: Dark yellowish brown (10YR 3/4), moist, very stiff		CL	8												
			9	S											
			10	D	12	2.5			9		91				
CLAYEY SAND with GRAVEL: Dark yellowish brown (10YR 3/4), moist, medium dense; fine to coarse sand, with fine to coarse gravel		SC	11												
			12												
			13												
			14	S											
			15	D	17		20		5		104				
WELL GRADED SAND with GRAVEL and CLAY: Dark yellowish brown (10YR 3/4), moist, medium dense; fine to coarse sand, with fine to coarse gravel		SW-SC	16												
			17												
			18												
			19	S											
			20	I	21		11		4						

DATE: 10/25/2022		LOG OF EXPLORATORY DRILL HOLE						DH- 3						
PROJECT NAME: Gilman Avenue & Dillon Avenue Sites				PROJECT NUMBER: PA22.1046										
DRILL RIG: Mobile B-53R, auto hammer				LOGGED BY: FS										
HOLE DIAMETER: 8-inch hollow stem auger				HOLE ELEVATION: ---										
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample				GROUND WATER DEPTH: Initial: --- Final: ---										
DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)	
WELL GRADED SAND with GRAVEL and CLAY (continued)		SW-SC	21											
			22											
			23											
			24	S	47									
			25	I										
WELL GRADED GRAVEL with SAND and CLAY: Dark yellowish brown (10YR 3/4), moist, very dense; fine to coarse gravel, with fine to coarse sand		GW-GC	26											
			27											
			28											
			29	S	58									
			30	I		11		4						
			31											
			32											
			33											
			34	S	55									
			35	I										
BOTTOM OF HOLE = 40 FEET No Groundwater Encountered			36											
			37											
			38											
			39	S	70		10		6					
			40	I										

DATE: 10/25/2022		LOG OF EXPLORATORY DRILL HOLE							DH- 4					
PROJECT NAME: Gilman Avenue & Dillon Avenue Sites					PROJECT NUMBER: PA22.1046									
DRILL RIG: Mobile B-53B, 140-lb downhole hammer					LOGGED BY: FS									
HOLE DIAMETER: 8-inch hollow stem auger					HOLE ELEVATION: ---									
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample					GROUND WATER DEPTH: Initial: --- Final: ---									
DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)	
PAVEMENT (±2" AC over ±6" AB)														
CLAY: Dark yellowish brown (10YR 3/4), moist, stiff stiff to very stiff, with trace gravel		Cl	1	S										
			2	D	11	1.75			17		90			
			3											
			4	S										
			5	D	12	1.75	3.0			11		96		
			6											
			7											
SANDY LEAN CLAY to CLAYEY SAND: Dark yellowish brown (10YR 3/4), moist, very stiff clay to medium dense sand		CL/SC	8											
			9	S										
			10	D	13	2.75	2.5	52		10		91		
			11											
WELL GRADED SAND with GRAVEL and CLAY: Dark yellowish brown (10YR 3/4), moist, dense; fine to coarse sand, with fine to coarse gravel		SW-SC	12											
			13											
			14	S										
			15	D	49					2		113		
			16											
			17											
			18											
			19	S										
BOTTOM OF HOLE @ 20 FEET No Groundwater Encountered			20	I	32									

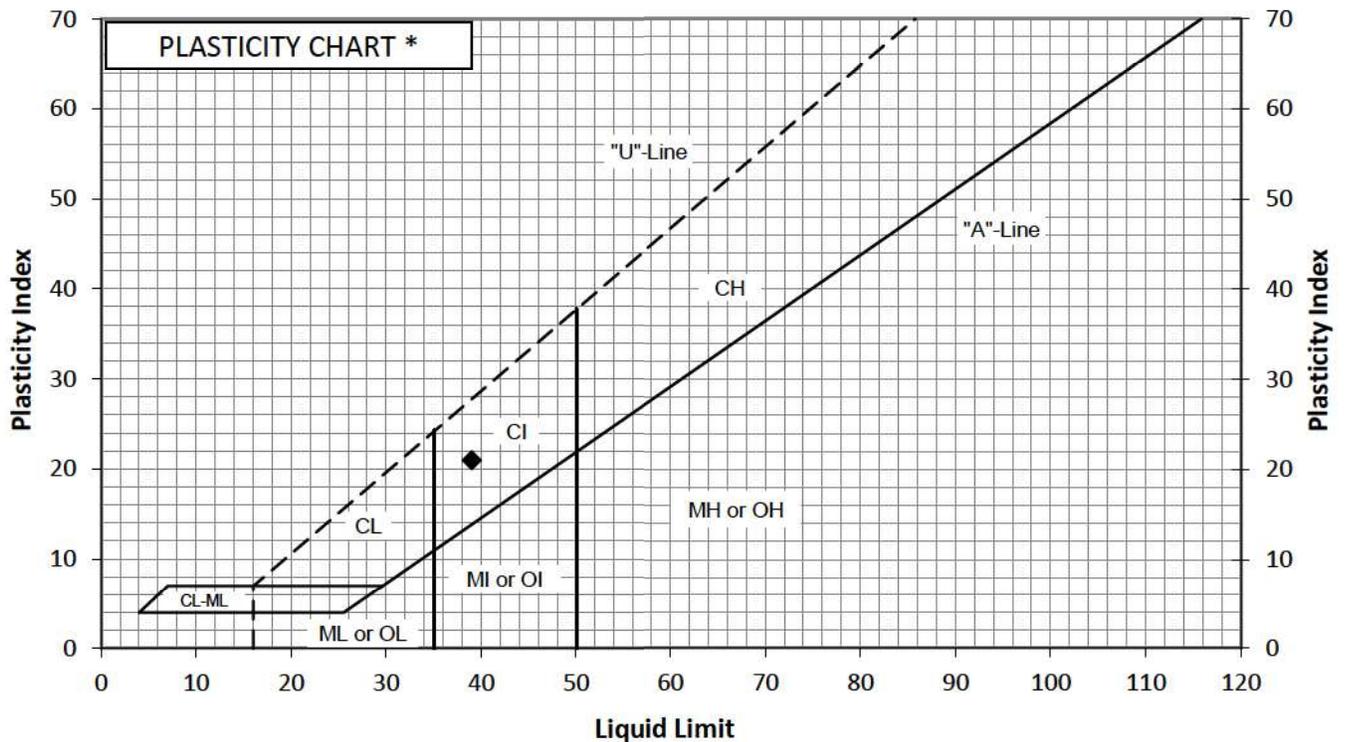
DATE: 10/25/2022		LOG OF EXPLORATORY DRILL HOLE							DH- 5					
PROJECT NAME: Gilman Avenue & Dillon Avenue Sites					PROJECT NUMBER: PA22.1046									
DRILL RIG: Mobile B-53B, 140-lb downhole hammer					LOGGED BY: FS									
HOLE DIAMETER: 8-inch hollow stem auger					HOLE ELEVATION: ---									
SAMPLER: D = 3" OD, 2½" ID Split-spoon X = 2½" OD, 2" ID Split-spoon I = Standard Penetrometer (2" OD SPT) S = Slough in sample					GROUND WATER DEPTH: Initial: --- Final: ---									
DESCRIPTION OF EARTH MATERIALS		SOIL TYPE	DEPTH (ft)	SAMPLE	BLOWS PER FOOT	POCKET PEN (tsf)	% PASSING #200 SIEVE	LIQUID LIMIT	WATER CONTENT	PLASTICITY INDEX	DRY DENSITY (pcf)	FAILURE STRAIN (%)	UNCONFINED COMPRESSIVE STRENGTH (psf)	
PAVEMENT (±4.5" concrete)														
CLAY: Dark yellowish brown (10YR 3/4), moist, stiff		CL	1	S										
			2	D	7	1.5			20		94			
			3											
			4	S										
			5	D	7	1.5				19		84		
			6											
			7											
			8											
SANDY LEAN CLAY: Dark yellowish brown (10YR 3/4), moist, very stiff		CL	9	S										
			10	D	15	2.5			10		88			
			11											
CLAYEY SAND with GRAVEL: Dark yellowish brown (10YR 3/4), moist, medium dense; fine to coarse sand, with fine to coarse gravel		SC	12											
			13											
			14	S										
WELL GRADED SAND with GRAVEL and CLAY: Dark yellowish brown (10YR 3/4), moist, dense; fine to coarse sand, with fine to coarse gravel			15	D	24				5		100			
			16											
			17											
BOTTOM OF HOLE @ 20 FEET No Groundwater Encountered		SW-SC	18											
			19	S										
			20	I	40									

APPENDIX B

LABORATORY TEST RESULTS

ATTERBERG LIMITS TEST RESULTS

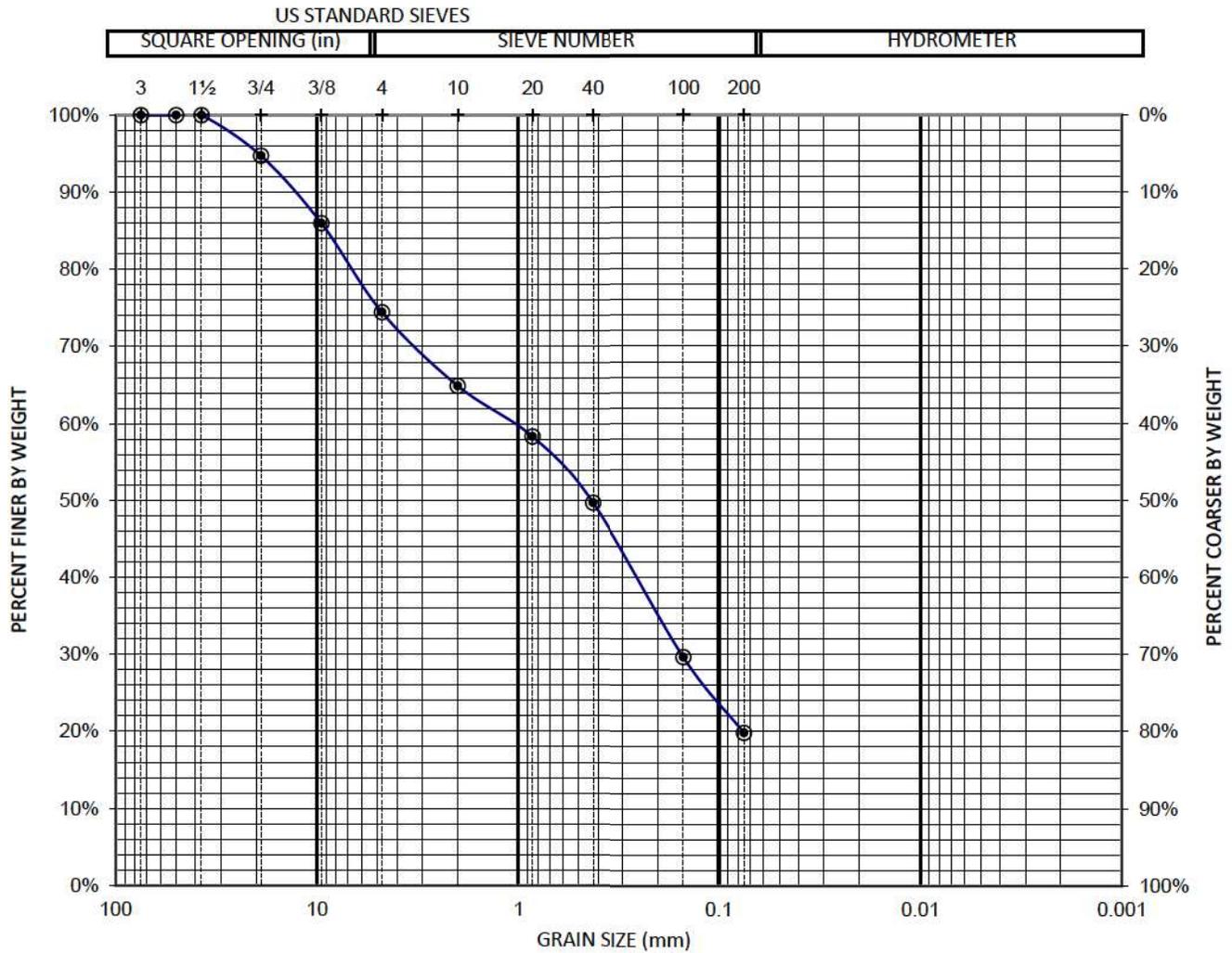
PROJECT NAME	Gilman Avenue & Dillon Avenue Sites	PROJECT No.	PA22.1046
DATE OF TEST	11/4/2022		
KEY SYMBOL	◆		
DRILL HOLE No.	3		
DEPTH (ft)	2		
NATURAL WATER CONTENT (%)	16		
% RETAINED No. 40 SIEVE (Est.)	---		
% PASSING No. 200 SIEVE	---		
LIQUID LIMIT	39		
PLASTIC LIMIT	18		
PLASTICITY INDEX	21		
CLASSIFICATION SYMBOL	CI		



* Based on the Unified Soil Classification System modified to incorporate the "intermediate" classifications CI, MI, and OI for soils with liquid limits between 35 and 50. In the unmodified Unified Soil Classification System, such soils would be classified as CL, ML and OL, respectively.

GRAIN SIZE TEST RESULTS

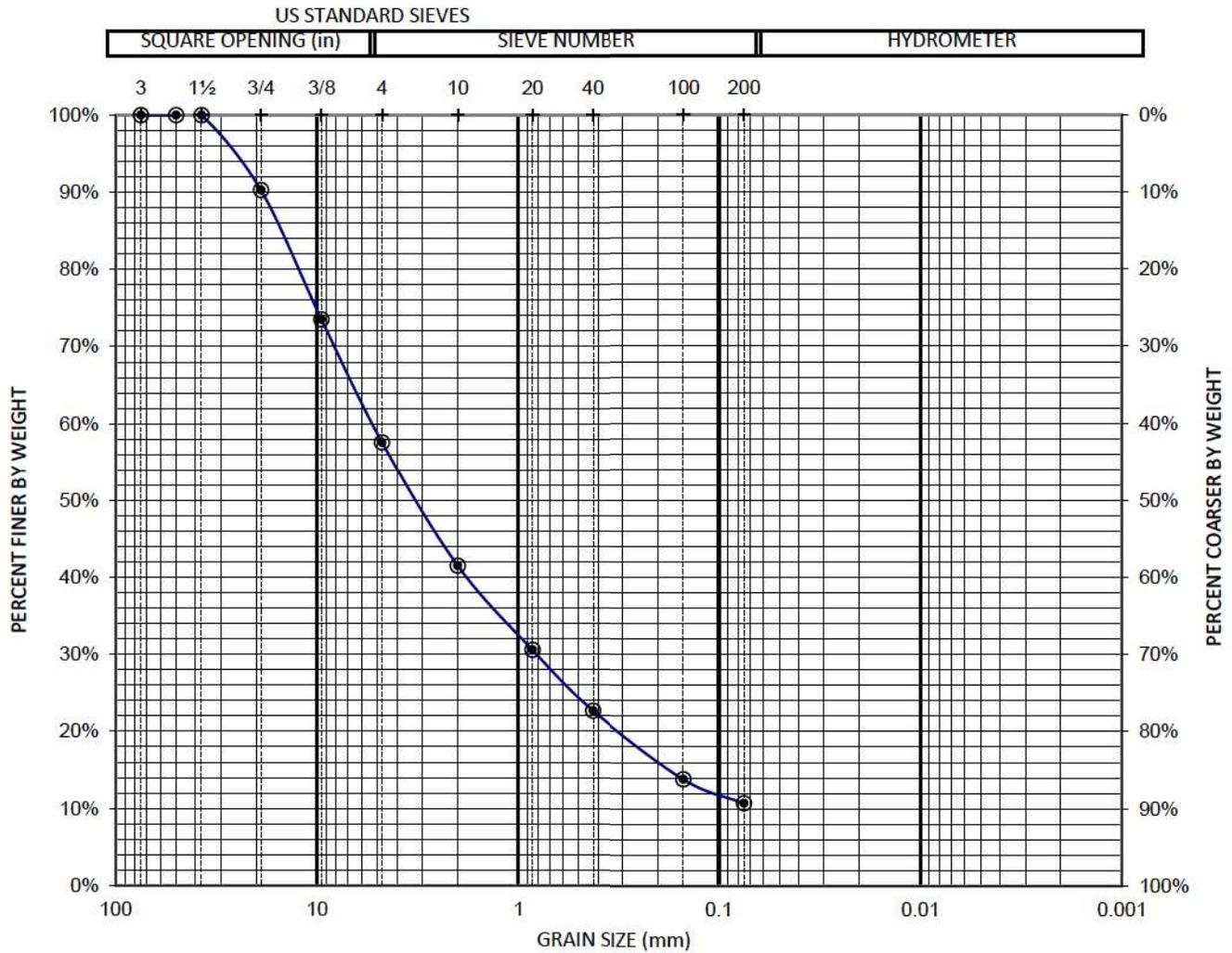
PROJECT NAME	Gilman Avenue & Dillon Avenue Sites	PROJECT No.	PA22.1046
DRILL HOLE No.	DH-3	DEPTH (ft)	14.5-15
SAMPLE	0	DATE OF TEST	10/28/2022
SOURCE/QUARRY: ---			
DESCRIPTION OF SOIL: Clayey Sand with Gravel			



REMARKS:

GRAIN SIZE TEST RESULTS

PROJECT NAME	Gilman Avenue & Dillon Avenue Sites	PROJECT No.	PA22.1046
DRILL HOLE No.	DH-3	DEPTH (ft)	19-20
SAMPLE	0	DATE OF TEST	10/28/2022
SOURCE/QUARRY: ---			
DESCRIPTION OF SOIL: Well Graded Sand with Gravel and Clay			

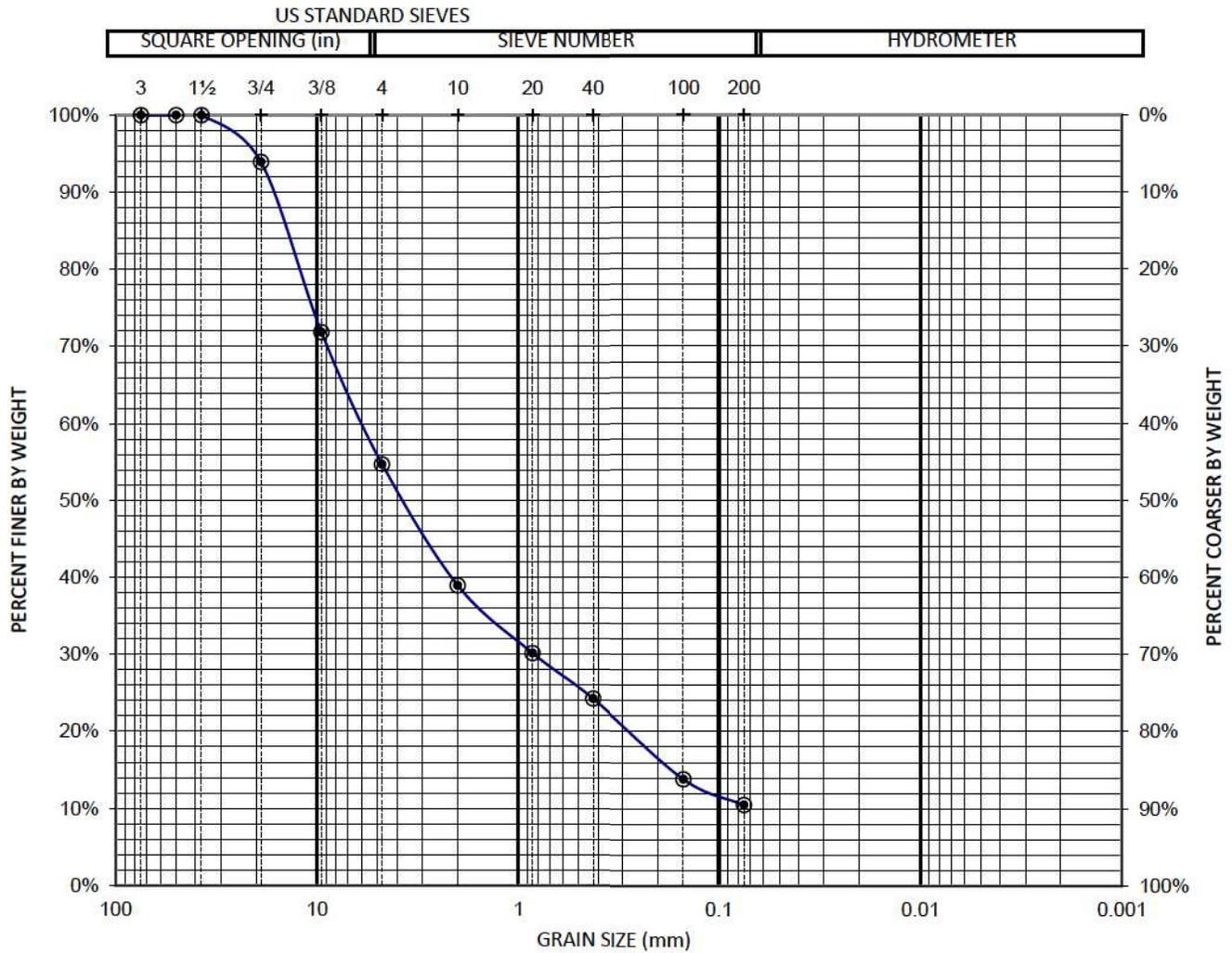


	COARSE	FINE	COARSE	MEDIUM	FINE	
COBBLES	GRAVEL		SAND			SILT & CLAY
	42.4%		46.9%			10.7%

REMARKS:

GRAIN SIZE TEST RESULTS

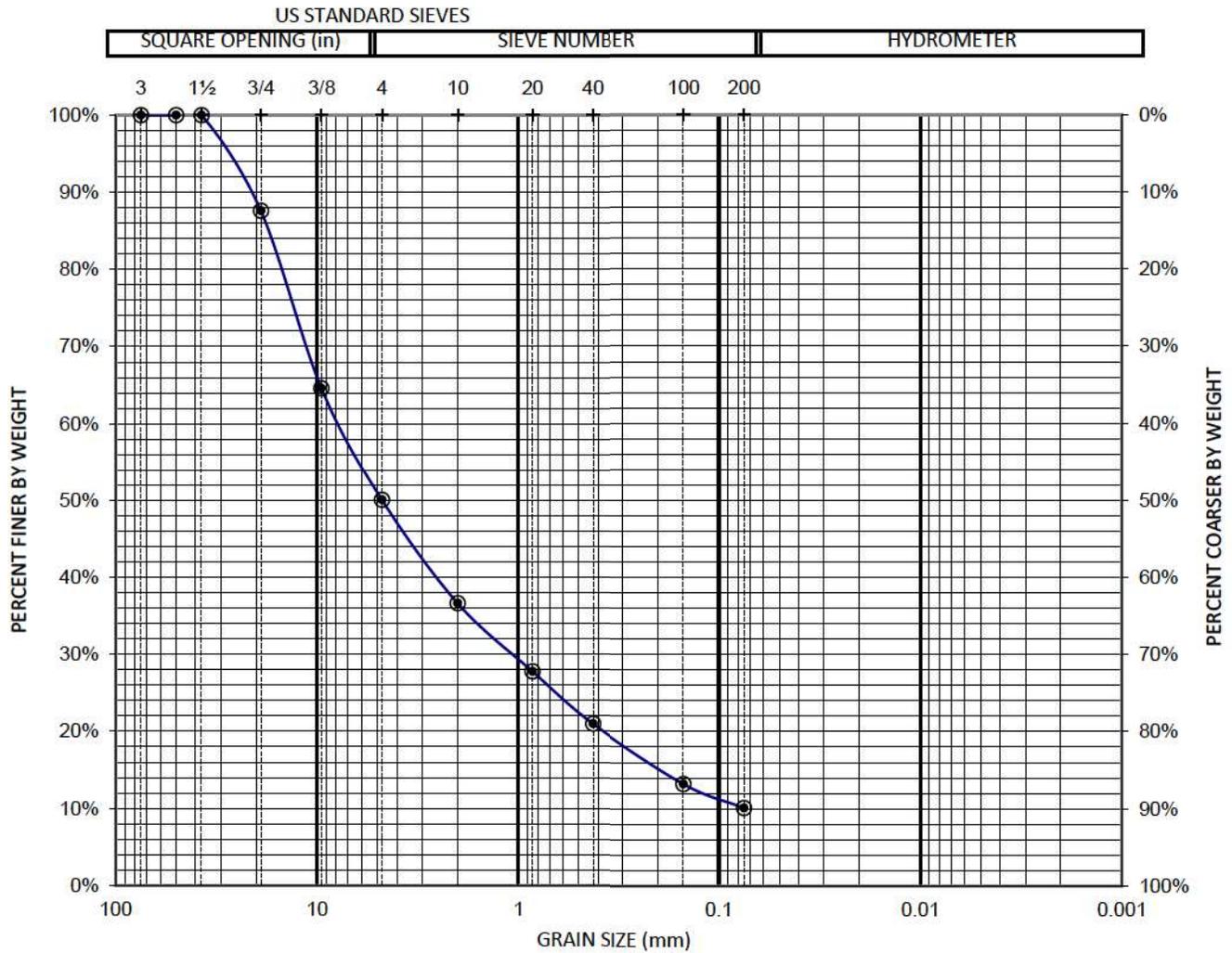
PROJECT NAME	Gilman Avenue & Dillon Avenue Sites	PROJECT No.	PA22.1046
DRILL HOLE No.	DH-3	DEPTH (ft)	29-30
SAMPLE	0	DATE OF TEST	10/28/2022
SOURCE/QUARRY: ---			
DESCRIPTION OF SOIL: Well Graded Gravel with Sand and Clay			



REMARKS:

GRAIN SIZE TEST RESULTS

PROJECT NAME	Gilman Avenue & Dillon Avenue Sites	PROJECT No.	PA22.1046
DRILL HOLE No.	DH-3	DEPTH (ft)	39-40
SAMPLE	0	DATE OF TEST	10/28/2022
SOURCE/QUARRY: ---			
DESCRIPTION OF SOIL: Well Graded Gravel with Sand and Clay			



REMARKS:

'R' VALUE CA 301

Project Gilman & Dillon ave

Date: 11/2/22

By: LD

Job #: PA22.1046

Sample : On Site Soil

Soil Type: Brown, Sandy Clay w. trace F. Gravel

TEST SPECIMEN		A	B	C	D
Compactor Air Pressure	psi	150	100	250	
Initial Moisture Content	%	9.4	9.4	9.4	
Water Added	ml	50	60	40	
Moisture at Compaction	%	14.0	14.9	13.0	
Sample & Mold Weight	gms	3225	3228	3219	
Mold Weight	gms	2103	2106	2099	
Net Sample Weight	gms	1122	1122	1120	
Sample Height	in.	2.539	2.542	2.518	
Dry Density	pcf	117.5	116.4	119.2	
Pressure	lbs	4515	2950	7730	
Exudation Pressure	psi	359	235	615	
Expansion Dial	x 0.0001	32	20	48	
Expansion Pressure	psf	139	87	208	
Ph at 1000lbs	psi	40	54	31	
Ph at 2000lbs	psi	92	118	69	
Displacement	turns	4.01	4.5	3.77	
R' Value		32	17	47	
Corrected 'R' Value		32	17	47	

FINAL 'R' VALUE	
By Exudation Pressure (@ 300 psi):	26
By Expansion Pressure :	23
TI =	5

FIGURE B-6



8 November, 2022

Job No. 2210056
Cust. No. 10854

1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

Mr. Beeson Liang
Geo-Logic Associates
6300 San Ignacio Ave., Suite A
San Jose, CA 95119

Subject: Project No.: PA22.1046.00
Project Name: Gilman & Dillion Avenue Sites
Corrosivity Analysis – ASTM Test Methods

Dear Mr. Liang:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on October 28, 2022. Based on the analytical results, this brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurements, Sample No.001 is classified as “corrosive” and Sample No.002 is classified as “moderately corrosive”. All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations are 24 mg/kg and 25 mg/kg. Both samples are determined to be insufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentrations are 66 mg/kg and 68 mg/kg and are determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations.

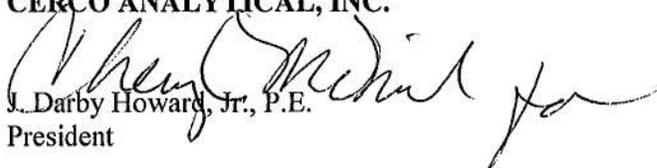
The pH of the soils are 7.27 and 7.43, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential for both samples is 250-mV and are indicative of potentially “slightly corrosive” soils resulting from anaerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call *JDH Corrosion Consultants, Inc.* at (925) 927-6630.

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.


J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Robson Homes
Santa Clara County, Summer**

APPENDIX D

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	10.00	Dwelling Unit	0.18	10,422.00	20
Condo/Townhouse	25.00	Dwelling Unit	1.27	60,204.00	80

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - acreages and sf from plans. population estimated based on bedrooms and JADUs
- Vehicle Trips - from trip gen
- Woodstoves - no woodstoves or wood fireplaces
- Land Use Change -
- Construction Off-road Equipment Mitigation -
- Mobile Land Use Mitigation - mitigation already part of project
- Area Mitigation -
- Energy Mitigation - from project estimated plans

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	1.50	0.00
tblFireplaces	NumberGas	3.75	0.00
tblFireplaces	NumberWood	1.70	0.00
tblFireplaces	NumberWood	4.25	0.00
tblLandUse	LandUseSquareFeet	10,000.00	10,422.00
tblLandUse	LandUseSquareFeet	25,000.00	60,204.00
tblLandUse	LotAcreage	0.63	0.18
tblLandUse	LotAcreage	1.56	1.27
tblLandUse	Population	29.00	20.00
tblLandUse	Population	72.00	80.00
tblVehicleTrips	ST_TR	8.14	47.00
tblVehicleTrips	ST_TR	8.14	184.00

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	SU_TR	6.28	47.00
tblVehicleTrips	SU_TR	6.28	184.00
tblVehicleTrips	WD_TR	7.32	47.00
tblVehicleTrips	WD_TR	7.32	184.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.4861	13.9048	13.7821	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,416.1457	2,416.1457	0.6471	0.0167	2,431.5310
2025	99.6160	10.6155	13.0233	0.0245	0.2325	0.3944	0.6269	0.0623	0.3804	0.4426	0.0000	2,258.2570	2,258.2570	0.4134	0.0162	2,271.3883
Maximum	99.6160	13.9048	13.7821	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,416.1457	2,416.1457	0.6471	0.0167	2,431.5310

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.4861	13.9048	13.7821	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,416.1457	2,416.1457	0.6471	0.0167	2,431.5310
2025	99.6160	10.6155	13.0233	0.0245	0.2325	0.3944	0.6269	0.0623	0.3804	0.4426	0.0000	2,258.2570	2,258.2570	0.4134	0.0162	2,271.3883
Maximum	99.6160	13.9048	13.7821	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,416.1457	2,416.1457	0.6471	0.0167	2,431.5310

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241
Energy	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997
Mobile	12.0819	10.8635	103.6084	0.2264	24.6209	0.1533	24.7742	6.5539	0.1427	6.6966		23,404.3143	23,404.3143	1.3170	0.9786	23,728.8708
Total	13.9681	11.0306	106.5517	0.2274	24.6209	0.1801	24.8010	6.5539	0.1695	6.7234	0.0000	23,580.3978	23,580.3978	1.3253	0.9818	23,906.0946

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241
Energy	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997
Mobile	10.5670	8.1699	76.4052	0.1530	16.3901	0.1086	16.4986	4.3629	0.1010	4.4639		15,815.6740	15,815.6740	1.0510	0.7422	16,063.1298
Total	12.4533	8.3370	79.3485	0.1540	16.3901	0.1354	16.5254	4.3629	0.1278	4.4907	0.0000	15,991.7576	15,991.7576	1.0593	0.7454	16,240.3535

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	10.84	24.42	25.53	32.28	33.43	24.85	33.37	33.43	24.61	33.21	0.00	32.18	32.18	20.07	24.08	32.07

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2024	4/26/2024	5	20	
2	Site Preparation	Site Preparation	4/27/2024	4/30/2024	5	2	
3	Grading	Grading	5/1/2024	5/6/2024	5	4	
4	Building Construction	Building Construction	5/7/2024	2/10/2025	5	200	
5	Paving	Paving	2/11/2025	2/24/2025	5	10	
6	Architectural Coating	Architectural Coating	2/25/2025	3/10/2025	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 143,018; Residential Outdoor: 47,673; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	25.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0321	0.0181	0.2942	8.8000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		91.1998	91.1998	2.1300e-003	2.0900e-003	91.8749
Total	0.0321	0.0181	0.2942	8.8000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		91.1998	91.1998	2.1300e-003	2.0900e-003	91.8749

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0321	0.0181	0.2942	8.8000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		91.1998	91.1998	2.1300e-003	2.0900e-003	91.8749
Total	0.0321	0.0181	0.2942	8.8000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		91.1998	91.1998	2.1300e-003	2.0900e-003	91.8749

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.1067	11.8407	6.6317	0.0172		0.4823	0.4823		0.4437	0.4437		1,665.8826	1,665.8826	0.5388		1,679.3521
Total	1.1067	11.8407	6.6317	0.0172	6.2662	0.4823	6.7485	3.0041	0.4437	3.4478		1,665.8826	1,665.8826	0.5388		1,679.3521

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0198	0.0111	0.1810	5.4000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		56.1230	56.1230	1.3100e-003	1.2800e-003	56.5384
Total	0.0198	0.0111	0.1810	5.4000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		56.1230	56.1230	1.3100e-003	1.2800e-003	56.5384

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.1067	11.8407	6.6317	0.0172		0.4823	0.4823		0.4437	0.4437	0.0000	1,665.8826	1,665.8826	0.5388		1,679.3521
Total	1.1067	11.8407	6.6317	0.0172	6.2662	0.4823	6.7485	3.0041	0.4437	3.4478	0.0000	1,665.8826	1,665.8826	0.5388		1,679.3521

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0198	0.0111	0.1810	5.4000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		56.1230	56.1230	1.3100e-003	1.2800e-003	56.5384
Total	0.0198	0.0111	0.1810	5.4000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		56.1230	56.1230	1.3100e-003	1.2800e-003	56.5384

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265		1,995.5803	1,995.5803	0.6454		2,011.7155
Total	1.3015	13.8178	8.6998	0.0206	7.0826	0.5722	7.6548	3.4247	0.5265	3.9512		1,995.5803	1,995.5803	0.6454		2,011.7155

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0139	0.2263	6.8000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		70.1537	70.1537	1.6400e-003	1.6100e-003	70.6730
Total	0.0247	0.0139	0.2263	6.8000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		70.1537	70.1537	1.6400e-003	1.6100e-003	70.6730

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265	0.0000	1,995.5803	1,995.5803	0.6454		2,011.7155
Total	1.3015	13.8178	8.6998	0.0206	7.0826	0.5722	7.6548	3.4247	0.5265	3.9512	0.0000	1,995.5803	1,995.5803	0.6454		2,011.7155

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0247	0.0139	0.2263	6.8000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		70.1537	70.1537	1.6400e-003	1.6100e-003	70.6730
Total	0.0247	0.0139	0.2263	6.8000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		70.1537	70.1537	1.6400e-003	1.6100e-003	70.6730

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348		2,001.9214	2,001.9214	0.3334		2,010.2563
Total	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348		2,001.9214	2,001.9214	0.3334		2,010.2563

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3600e-003	0.1720	0.0542	8.0000e-004	0.0271	1.0500e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		86.3270	86.3270	1.8300e-003	0.0127	90.1428
Worker	0.0618	0.0348	0.5658	1.7000e-003	0.2054	9.4000e-004	0.2063	0.0545	8.6000e-004	0.0553		175.3843	175.3843	4.0900e-003	4.0100e-003	176.6825
Total	0.0661	0.2068	0.6199	2.5000e-003	0.2325	1.9900e-003	0.2345	0.0623	1.8700e-003	0.0642		261.7113	261.7113	5.9200e-003	0.0167	266.8252

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348	0.0000	2,001.9214	2,001.9214	0.3334		2,010.2563
Total	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348	0.0000	2,001.9214	2,001.9214	0.3334		2,010.2563

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3600e-003	0.1720	0.0542	8.0000e-004	0.0271	1.0500e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		86.3270	86.3270	1.8300e-003	0.0127	90.1428
Worker	0.0618	0.0348	0.5658	1.7000e-003	0.2054	9.4000e-004	0.2063	0.0545	8.6000e-004	0.0553		175.3843	175.3843	4.0900e-003	4.0100e-003	176.6825
Total	0.0661	0.2068	0.6199	2.5000e-003	0.2325	1.9900e-003	0.2345	0.0623	1.8700e-003	0.0642		261.7113	261.7113	5.9200e-003	0.0167	266.8252

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785		2,002.1524	2,002.1524	0.3269		2,010.3248
Total	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785		2,002.1524	2,002.1524	0.3269		2,010.3248

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2600e-003	0.1713	0.0533	7.9000e-004	0.0271	1.0600e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		84.8628	84.8628	1.8100e-003	0.0124	88.6066
Worker	0.0581	0.0314	0.5306	1.6400e-003	0.2054	9.0000e-004	0.2063	0.0545	8.3000e-004	0.0553		171.2418	171.2418	3.7100e-003	3.7700e-003	172.4569
Total	0.0624	0.2027	0.5839	2.4300e-003	0.2325	1.9600e-003	0.2344	0.0623	1.8400e-003	0.0641		256.1046	256.1046	5.5200e-003	0.0162	261.0635

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785	0.0000	2,002.1524	2,002.1524	0.3269		2,010.3248
Total	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785	0.0000	2,002.1524	2,002.1524	0.3269		2,010.3248

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2600e-003	0.1713	0.0533	7.9000e-004	0.0271	1.0600e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		84.8628	84.8628	1.8100e-003	0.0124	88.6066
Worker	0.0581	0.0314	0.5306	1.6400e-003	0.2054	9.0000e-004	0.2063	0.0545	8.3000e-004	0.0553		171.2418	171.2418	3.7100e-003	3.7700e-003	172.4569
Total	0.0624	0.2027	0.5839	2.4300e-003	0.2325	1.9600e-003	0.2344	0.0623	1.8400e-003	0.0641		256.1046	256.1046	5.5200e-003	0.0162	261.0635

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276		1,297.8096	1,297.8096	0.4114		1,308.0951
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276		1,297.8096	1,297.8096	0.4114		1,308.0951

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0302	0.0163	0.2759	8.5000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		89.0457	89.0457	1.9300e-003	1.9600e-003	89.6776
Total	0.0302	0.0163	0.2759	8.5000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		89.0457	89.0457	1.9300e-003	1.9600e-003	89.6776

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276	0.0000	1,297.8096	1,297.8096	0.4114		1,308.0951
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276	0.0000	1,297.8096	1,297.8096	0.4114		1,308.0951

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0302	0.0163	0.2759	8.5000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		89.0457	89.0457	1.9300e-003	1.9600e-003	89.6776
Total	0.0302	0.0163	0.2759	8.5000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		89.0457	89.0457	1.9300e-003	1.9600e-003	89.6776

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	99.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	99.6044	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	6.2900e-003	0.1061	3.3000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		34.2484	34.2484	7.4000e-004	7.5000e-004	34.4914
Total	0.0116	6.2900e-003	0.1061	3.3000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		34.2484	34.2484	7.4000e-004	7.5000e-004	34.4914

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	99.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	99.6044	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	6.2900e-003	0.1061	3.3000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		34.2484	34.2484	7.4000e-004	7.5000e-004	34.4914
Total	0.0116	6.2900e-003	0.1061	3.3000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		34.2484	34.2484	7.4000e-004	7.5000e-004	34.4914

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	10.5670	8.1699	76.4052	0.1530	16.3901	0.1086	16.4986	4.3629	0.1010	4.4639		15,815.67 40	15,815.67 40	1.0510	0.7422	16,063.12 98
Unmitigated	12.0819	10.8635	103.6084	0.2264	24.6209	0.1533	24.7742	6.5539	0.1427	6.6966		23,404.31 43	23,404.31 43	1.3170	0.9786	23,728.87 08

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	470.00	470.00	470.00	1,085,515	722,625
Condo/Townhouse	4,600.00	4,600.00	4600.00	10,624,194	7,072,498
Total	5,070.00	5,070.00	5,070.00	11,709,709	7,795,123

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776
Condo/Townhouse	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997
NaturalGas Unmitigated	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	270.35	2.9200e-003	0.0249	0.0106	1.6000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003		31.8059	31.8059	6.1000e-004	5.8000e-004	31.9949
Condo/Townhouse	1182.17	0.0128	0.1089	0.0464	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003		139.0783	139.0783	2.6700e-003	2.5500e-003	139.9048
Total		0.0157	0.1339	0.0570	8.6000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.27035	2.9200e-003	0.0249	0.0106	1.6000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003		31.8059	31.8059	6.1000e-004	5.8000e-004	31.9949
Condo/Townhouse	1.18217	0.0128	0.1089	0.0464	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003		139.0783	139.0783	2.6700e-003	2.5500e-003	139.9048
Total		0.0157	0.1339	0.0570	8.6000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997

6.0 Area Detail

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241
Unmitigated	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5114					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0868	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.1993	5.1993	4.9900e-003		5.3241
Total	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5114					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0868	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.1993	5.1993	4.9900e-003		5.3241
Total	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241

7.0 Water Detail

7.1 Mitigation Measures Water

Robson Homes - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

**Robson Homes
Santa Clara County, Winter**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	10.00	Dwelling Unit	0.18	10,422.00	20
Condo/Townhouse	25.00	Dwelling Unit	1.27	60,204.00	80

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - acreages and sf from plans. population estimated based on bedrooms and JADUs
- Vehicle Trips - from trip gen
- Woodstoves - no woodstoves or wood fireplaces
- Land Use Change -
- Construction Off-road Equipment Mitigation -
- Mobile Land Use Mitigation - mitigation already part of project
- Area Mitigation -
- Energy Mitigation - from project estimated plans

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	1.50	0.00
tblFireplaces	NumberGas	3.75	0.00
tblFireplaces	NumberWood	1.70	0.00
tblFireplaces	NumberWood	4.25	0.00
tblLandUse	LandUseSquareFeet	10,000.00	10,422.00
tblLandUse	LandUseSquareFeet	25,000.00	60,204.00
tblLandUse	LotAcreage	0.63	0.18
tblLandUse	LotAcreage	1.56	1.27
tblLandUse	Population	29.00	20.00
tblLandUse	Population	72.00	80.00
tblVehicleTrips	ST_TR	8.14	47.00
tblVehicleTrips	ST_TR	8.14	184.00

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	SU_TR	6.28	47.00
tblVehicleTrips	SU_TR	6.28	184.00
tblVehicleTrips	WD_TR	7.32	47.00
tblVehicleTrips	WD_TR	7.32	184.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.4880	13.9088	13.7673	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,409.5060	2,409.5060	0.6473	0.0173	2,424.9867
2025	99.6164	10.6323	12.9997	0.0244	0.2325	0.3944	0.6269	0.0623	0.3804	0.4426	0.0000	2,245.9412	2,245.9412	0.4136	0.0167	2,259.2529
Maximum	99.6164	13.9088	13.7673	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,409.5060	2,409.5060	0.6473	0.0173	2,424.9867

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.4880	13.9088	13.7673	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,409.5060	2,409.5060	0.6473	0.0173	2,424.9867
2025	99.6164	10.6323	12.9997	0.0244	0.2325	0.3944	0.6269	0.0623	0.3804	0.4426	0.0000	2,245.9412	2,245.9412	0.4136	0.0167	2,259.2529
Maximum	99.6164	13.9088	13.7673	0.0250	7.1647	0.6316	7.7374	3.4465	0.5899	3.9733	0.0000	2,409.5060	2,409.5060	0.6473	0.0173	2,424.9867

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241
Energy	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997
Mobile	10.8572	12.4984	109.1517	0.2131	24.6209	0.1534	24.7743	6.5539	0.1428	6.6967		22,024.0377	22,024.0377	1.4907	1.0733	22,381.1330
Total	12.7435	12.6655	112.0949	0.2141	24.6209	0.1802	24.8011	6.5539	0.1696	6.7235	0.0000	22,200.1213	22,200.1213	1.4990	1.0764	22,558.3568

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241
Energy	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997
Mobile	9.2791	9.4155	83.4756	0.1442	16.3901	0.1086	16.4987	4.3629	0.1010	4.4640		14,903.9015	14,903.9015	1.2230	0.8179	15,178.2045
Total	11.1654	9.5826	86.4189	0.1452	16.3901	0.1355	16.5255	4.3629	0.1279	4.4908	0.0000	15,079.9851	15,079.9851	1.2313	0.8210	15,355.4283

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	12.38	24.34	22.91	32.18	33.43	24.84	33.37	33.43	24.60	33.21	0.00	32.07	32.07	17.86	23.72	31.93

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2024	4/26/2024	5	20	
2	Site Preparation	Site Preparation	4/27/2024	4/30/2024	5	2	
3	Grading	Grading	5/1/2024	5/6/2024	5	4	
4	Building Construction	Building Construction	5/7/2024	2/10/2025	5	200	
5	Paving	Paving	2/11/2025	2/24/2025	5	10	
6	Architectural Coating	Architectural Coating	2/25/2025	3/10/2025	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 143,018; Residential Outdoor: 47,673; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	25.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895		2,324.9459	2,324.9459	0.5884		2,339.6562

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0332	0.0221	0.2793	8.2000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		84.5602	84.5602	2.4100e-003	2.3800e-003	85.3305
Total	0.0332	0.0221	0.2793	8.2000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		84.5602	84.5602	2.4100e-003	2.3800e-003	85.3305

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562
Total	1.4397	13.8867	13.4879	0.0241		0.6311	0.6311		0.5895	0.5895	0.0000	2,324.9459	2,324.9459	0.5884		2,339.6562

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0332	0.0221	0.2793	8.2000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		84.5602	84.5602	2.4100e-003	2.3800e-003	85.3305
Total	0.0332	0.0221	0.2793	8.2000e-004	0.1068	4.9000e-004	0.1073	0.0283	4.5000e-004	0.0288		84.5602	84.5602	2.4100e-003	2.3800e-003	85.3305

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.1067	11.8407	6.6317	0.0172		0.4823	0.4823		0.4437	0.4437		1,665.8826	1,665.8826	0.5388		1,679.3521
Total	1.1067	11.8407	6.6317	0.0172	6.2662	0.4823	6.7485	3.0041	0.4437	3.4478		1,665.8826	1,665.8826	0.5388		1,679.3521

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	0.0136	0.1719	5.0000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		52.0370	52.0370	1.4800e-003	1.4700e-003	52.5111
Total	0.0204	0.0136	0.1719	5.0000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		52.0370	52.0370	1.4800e-003	1.4700e-003	52.5111

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2662	0.0000	6.2662	3.0041	0.0000	3.0041			0.0000			0.0000
Off-Road	1.1067	11.8407	6.6317	0.0172		0.4823	0.4823		0.4437	0.4437	0.0000	1,665.8826	1,665.8826	0.5388		1,679.3521
Total	1.1067	11.8407	6.6317	0.0172	6.2662	0.4823	6.7485	3.0041	0.4437	3.4478	0.0000	1,665.8826	1,665.8826	0.5388		1,679.3521

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	0.0136	0.1719	5.0000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		52.0370	52.0370	1.4800e-003	1.4700e-003	52.5111
Total	0.0204	0.0136	0.1719	5.0000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		52.0370	52.0370	1.4800e-003	1.4700e-003	52.5111

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265		1,995.5803	1,995.5803	0.6454		2,011.7155
Total	1.3015	13.8178	8.6998	0.0206	7.0826	0.5722	7.6548	3.4247	0.5265	3.9512		1,995.5803	1,995.5803	0.6454		2,011.7155

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0255	0.0170	0.2149	6.3000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		65.0463	65.0463	1.8500e-003	1.8300e-003	65.6389
Total	0.0255	0.0170	0.2149	6.3000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		65.0463	65.0463	1.8500e-003	1.8300e-003	65.6389

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.3015	13.8178	8.6998	0.0206		0.5722	0.5722		0.5265	0.5265	0.0000	1,995.5803	1,995.5803	0.6454		2,011.7155
Total	1.3015	13.8178	8.6998	0.0206	7.0826	0.5722	7.6548	3.4247	0.5265	3.9512	0.0000	1,995.5803	1,995.5803	0.6454		2,011.7155

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0255	0.0170	0.2149	6.3000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		65.0463	65.0463	1.8500e-003	1.8300e-003	65.6389
Total	0.0255	0.0170	0.2149	6.3000e-004	0.0822	3.8000e-004	0.0825	0.0218	3.5000e-004	0.0221		65.0463	65.0463	1.8500e-003	1.8300e-003	65.6389

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348		2,001.9214	2,001.9214	0.3334		2,010.2563
Total	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348		2,001.9214	2,001.9214	0.3334		2,010.2563

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2200e-003	0.1819	0.0561	8.1000e-004	0.0271	1.0600e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		86.4531	86.4531	1.8200e-003	0.0127	90.2782
Worker	0.0638	0.0425	0.5372	1.5800e-003	0.2054	9.4000e-004	0.2063	0.0545	8.6000e-004	0.0553		162.6157	162.6157	4.6300e-003	4.5800e-003	164.0972
Total	0.0680	0.2244	0.5933	2.3900e-003	0.2325	2.0000e-003	0.2345	0.0623	1.8700e-003	0.0642		249.0688	249.0688	6.4500e-003	0.0173	254.3753

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348	0.0000	2,001.9214	2,001.9214	0.3334		2,010.2563
Total	1.4200	11.0639	12.5172	0.0221		0.4506	0.4506		0.4348	0.4348	0.0000	2,001.9214	2,001.9214	0.3334		2,010.2563

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2200e-003	0.1819	0.0561	8.1000e-004	0.0271	1.0600e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		86.4531	86.4531	1.8200e-003	0.0127	90.2782
Worker	0.0638	0.0425	0.5372	1.5800e-003	0.2054	9.4000e-004	0.2063	0.0545	8.6000e-004	0.0553		162.6157	162.6157	4.6300e-003	4.5800e-003	164.0972
Total	0.0680	0.2244	0.5933	2.3900e-003	0.2325	2.0000e-003	0.2345	0.0623	1.8700e-003	0.0642		249.0688	249.0688	6.4500e-003	0.0173	254.3753

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785		2,002.1524	2,002.1524	0.3269		2,010.3248
Total	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785		2,002.1524	2,002.1524	0.3269		2,010.3248

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1200e-003	0.1812	0.0553	7.9000e-004	0.0271	1.0600e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		84.9890	84.9890	1.7900e-003	0.0124	88.7419
Worker	0.0602	0.0383	0.5051	1.5200e-003	0.2054	9.0000e-004	0.2063	0.0545	8.3000e-004	0.0553		158.7997	158.7997	4.2200e-003	4.3000e-003	160.1862
Total	0.0644	0.2195	0.5604	2.3100e-003	0.2325	1.9600e-003	0.2344	0.0623	1.8400e-003	0.0641		243.7887	243.7887	6.0100e-003	0.0167	248.9281

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785	0.0000	2,002.1524	2,002.1524	0.3269		2,010.3248
Total	1.3246	10.4128	12.4393	0.0221		0.3925	0.3925		0.3785	0.3785	0.0000	2,002.1524	2,002.1524	0.3269		2,010.3248

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.1200e-003	0.1812	0.0553	7.9000e-004	0.0271	1.0600e-003	0.0282	7.8000e-003	1.0100e-003	8.8100e-003		84.9890	84.9890	1.7900e-003	0.0124	88.7419
Worker	0.0602	0.0383	0.5051	1.5200e-003	0.2054	9.0000e-004	0.2063	0.0545	8.3000e-004	0.0553		158.7997	158.7997	4.2200e-003	4.3000e-003	160.1862
Total	0.0644	0.2195	0.5604	2.3100e-003	0.2325	1.9600e-003	0.2344	0.0623	1.8400e-003	0.0641		243.7887	243.7887	6.0100e-003	0.0167	248.9281

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276		1,297.8096	1,297.8096	0.4114		1,308.0951
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276		1,297.8096	1,297.8096	0.4114		1,308.0951

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0313	0.0199	0.2627	7.9000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		82.5759	82.5759	2.1900e-003	2.2400e-003	83.2968
Total	0.0313	0.0199	0.2627	7.9000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		82.5759	82.5759	2.1900e-003	2.2400e-003	83.2968

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276	0.0000	1,297.8096	1,297.8096	0.4114		1,308.0951
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5732	5.3259	8.7951	0.0136		0.2465	0.2465		0.2276	0.2276	0.0000	1,297.8096	1,297.8096	0.4114		1,308.0951

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0313	0.0199	0.2627	7.9000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		82.5759	82.5759	2.1900e-003	2.2400e-003	83.2968
Total	0.0313	0.0199	0.2627	7.9000e-004	0.1068	4.7000e-004	0.1073	0.0283	4.3000e-004	0.0288		82.5759	82.5759	2.1900e-003	2.2400e-003	83.2968

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	99.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	99.6044	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0121	7.6600e-003	0.1010	3.0000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		31.7599	31.7599	8.4000e-004	8.6000e-004	32.0372
Total	0.0121	7.6600e-003	0.1010	3.0000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		31.7599	31.7599	8.4000e-004	8.6000e-004	32.0372

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	99.4335					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	99.6044	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0121	7.6600e-003	0.1010	3.0000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		31.7599	31.7599	8.4000e-004	8.6000e-004	32.0372
Total	0.0121	7.6600e-003	0.1010	3.0000e-004	0.0411	1.8000e-004	0.0413	0.0109	1.7000e-004	0.0111		31.7599	31.7599	8.4000e-004	8.6000e-004	32.0372

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Integrate Below Market Rate Housing

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.2791	9.4155	83.4756	0.1442	16.3901	0.1086	16.4987	4.3629	0.1010	4.4640		14,903.90 15	14,903.90 15	1.2230	0.8179	15,178.20 45
Unmitigated	10.8572	12.4984	109.1517	0.2131	24.6209	0.1534	24.7743	6.5539	0.1428	6.6967		22,024.03 77	22,024.03 77	1.4907	1.0733	22,381.13 30

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	470.00	470.00	470.00	1,085,515	722,625
Condo/Townhouse	4,600.00	4,600.00	4600.00	10,624,194	7,072,498
Total	5,070.00	5,070.00	5,070.00	11,709,709	7,795,123

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776
Condo/Townhouse	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997
NaturalGas Unmitigated	0.0157	0.1339	0.0570	8.5000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	270.35	2.9200e-003	0.0249	0.0106	1.6000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003		31.8059	31.8059	6.1000e-004	5.8000e-004	31.9949
Condo/Townhouse	1182.17	0.0128	0.1089	0.0464	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003		139.0783	139.0783	2.6700e-003	2.5500e-003	139.9048
Total		0.0157	0.1339	0.0570	8.6000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	0.27035	2.9200e-003	0.0249	0.0106	1.6000e-004		2.0100e-003	2.0100e-003		2.0100e-003	2.0100e-003		31.8059	31.8059	6.1000e-004	5.8000e-004	31.9949
Condo/Townhouse	1.18217	0.0128	0.1089	0.0464	7.0000e-004		8.8100e-003	8.8100e-003		8.8100e-003	8.8100e-003		139.0783	139.0783	2.6700e-003	2.5500e-003	139.9048
Total		0.0157	0.1339	0.0570	8.6000e-004		0.0108	0.0108		0.0108	0.0108		170.8843	170.8843	3.2800e-003	3.1300e-003	171.8997

6.0 Area Detail

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241
Unmitigated	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5114					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0868	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.1993	5.1993	4.9900e-003		5.3241
Total	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241

Robson Homes - Santa Clara County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2724					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.5114					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0868	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160		5.1993	5.1993	4.9900e-003		5.3241
Total	1.8706	0.0333	2.8863	1.5000e-004		0.0160	0.0160		0.0160	0.0160	0.0000	5.1993	5.1993	4.9900e-003	0.0000	5.3241

7.0 Water Detail

7.1 Mitigation Measures Water

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	10.00	Dwelling Unit	0.18	10,422.00	20
Condo/Townhouse	25.00	Dwelling Unit	1.27	60,204.00	80

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

- Project Characteristics -
- Land Use - acreages and sf from plans. population estimated based on bedrooms and JADUs
- Vehicle Trips - from trip gen
- Woodstoves - no woodstoves or wood fireplaces
- Land Use Change -
- Construction Off-road Equipment Mitigation -
- Mobile Land Use Mitigation - mitigation already part of project
- Area Mitigation -
- Energy Mitigation - from project estimated plans

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	1.50	0.00
tblFireplaces	NumberGas	3.75	0.00
tblFireplaces	NumberWood	1.70	0.00
tblFireplaces	NumberWood	4.25	0.00
tblLandUse	LandUseSquareFeet	10,000.00	10,422.00
tblLandUse	LandUseSquareFeet	25,000.00	60,204.00
tblLandUse	LotAcreage	0.63	0.18
tblLandUse	LotAcreage	1.56	1.27
tblLandUse	Population	29.00	20.00
tblLandUse	Population	72.00	80.00
tblVehicleTrips	ST_TR	8.14	47.00
tblVehicleTrips	ST_TR	8.14	184.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	SU_TR	6.28	47.00
tblVehicleTrips	SU_TR	6.28	184.00
tblVehicleTrips	WD_TR	7.32	47.00
tblVehicleTrips	WD_TR	7.32	184.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1453	1.1431	1.2819	2.4000e-003	0.0409	0.0466	0.0875	0.0154	0.0447	0.0601	0.0000	201.8944	201.8944	0.0334	1.3400e-003	203.1285
2025	0.5212	0.1866	0.2431	4.4000e-004	3.9700e-003	7.2100e-003	0.0112	1.0600e-003	6.9100e-003	7.9800e-003	0.0000	37.2529	37.2529	6.3200e-003	2.3000e-004	37.4796
Maximum	0.5212	1.1431	1.2819	2.4000e-003	0.0409	0.0466	0.0875	0.0154	0.0447	0.0601	0.0000	201.8944	201.8944	0.0334	1.3400e-003	203.1285

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.1453	1.1431	1.2819	2.4000e-003	0.0409	0.0466	0.0875	0.0154	0.0447	0.0601	0.0000	201.8941	201.8941	0.0334	1.3400e-003	203.1283
2025	0.5212	0.1866	0.2431	4.4000e-004	3.9700e-003	7.2100e-003	0.0112	1.0600e-003	6.9100e-003	7.9800e-003	0.0000	37.2529	37.2529	6.3200e-003	2.3000e-004	37.4796
Maximum	0.5212	1.1431	1.2819	2.4000e-003	0.0409	0.0466	0.0875	0.0154	0.0447	0.0601	0.0000	201.8941	201.8941	0.0334	1.3400e-003	203.1283

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2024	6-30-2024	0.4444	0.4444
2	7-1-2024	9-30-2024	0.4192	0.4192
3	10-1-2024	12-31-2024	0.4198	0.4198
4	1-1-2025	3-31-2025	0.7096	0.7096
		Highest	0.7096	0.7096

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3334	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347
Energy	2.8600e-003	0.0244	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	43.2642	43.2642	2.9600e-003	8.1000e-004	43.5804
Mobile	1.9705	2.1470	18.7148	0.0391	4.3273	0.0279	4.3551	1.1551	0.0259	1.1810	0.0000	3,662.4274	3,662.4274	0.2321	0.1702	3,718.9499
Waste						0.0000	0.0000		0.0000	0.0000	3.2682	0.0000	3.2682	0.1931	0.0000	8.0967
Water						0.0000	0.0000		0.0000	0.0000	0.7235	1.6072	2.3307	0.0746	1.7900e-003	4.7271
Total	2.3067	2.1744	18.9850	0.0392	4.3273	0.0313	4.3585	1.1551	0.0294	1.1844	3.9916	3,707.7233	3,711.7149	0.5031	0.1728	3,775.7887

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3334	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347
Energy	2.8600e-003	0.0244	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	43.2642	43.2642	2.9600e-003	8.1000e-004	43.5804
Mobile	1.6911	1.6156	14.1454	0.0264	2.8806	0.0197	2.9004	0.7689	0.0184	0.7873	0.0000	2,477.5285	2,477.5285	0.1885	0.1295	2,520.8278
Waste						0.0000	0.0000		0.0000	0.0000	3.2682	0.0000	3.2682	0.1931	0.0000	8.0967
Water						0.0000	0.0000		0.0000	0.0000	0.7235	1.6072	2.3307	0.0746	1.7900e-003	4.7271
Total	2.0273	1.6430	14.4155	0.0266	2.8806	0.0232	2.9038	0.7689	0.0218	0.7907	3.9916	2,522.8244	2,526.8160	0.4596	0.1321	2,577.6666

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	12.11	24.44	24.07	32.22	33.43	26.01	33.38	33.43	25.82	33.24	0.00	31.96	31.92	8.66	23.56	31.73

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2024	4/26/2024	5	20	
2	Site Preparation	Site Preparation	4/27/2024	4/30/2024	5	2	
3	Grading	Grading	5/1/2024	5/6/2024	5	4	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	5/7/2024	2/10/2025	5	200
5	Paving	Paving	2/11/2025	2/24/2025	5	10
6	Architectural Coating	Architectural Coating	2/25/2025	3/10/2025	5	10

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 143,018; Residential Outdoor: 47,673; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

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Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	25.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0144	0.1389	0.1349	2.4000e-004		6.3100e-003	6.3100e-003		5.8900e-003	5.8900e-003	0.0000	21.0916	21.0916	5.3400e-003	0.0000	21.2250
Total	0.0144	0.1389	0.1349	2.4000e-004		6.3100e-003	6.3100e-003		5.8900e-003	5.8900e-003	0.0000	21.0916	21.0916	5.3400e-003	0.0000	21.2250

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3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.0000e-004	2.7200e-003	1.0000e-005	1.0300e-003	0.0000	1.0400e-003	2.7000e-004	0.0000	2.8000e-004	0.0000	0.7755	0.7755	2.0000e-005	2.0000e-005	0.7821
Total	3.0000e-004	2.0000e-004	2.7200e-003	1.0000e-005	1.0300e-003	0.0000	1.0400e-003	2.7000e-004	0.0000	2.8000e-004	0.0000	0.7755	0.7755	2.0000e-005	2.0000e-005	0.7821

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0144	0.1389	0.1349	2.4000e-004		6.3100e-003	6.3100e-003		5.8900e-003	5.8900e-003	0.0000	21.0915	21.0915	5.3400e-003	0.0000	21.2250
Total	0.0144	0.1389	0.1349	2.4000e-004		6.3100e-003	6.3100e-003		5.8900e-003	5.8900e-003	0.0000	21.0915	21.0915	5.3400e-003	0.0000	21.2250

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.0000e-004	2.7200e-003	1.0000e-005	1.0300e-003	0.0000	1.0400e-003	2.7000e-004	0.0000	2.8000e-004	0.0000	0.7755	0.7755	2.0000e-005	2.0000e-005	0.7821
Total	3.0000e-004	2.0000e-004	2.7200e-003	1.0000e-005	1.0300e-003	0.0000	1.0400e-003	2.7000e-004	0.0000	2.8000e-004	0.0000	0.7755	0.7755	2.0000e-005	2.0000e-005	0.7821

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1100e-003	0.0118	6.6300e-003	2.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	1.5113	1.5113	4.9000e-004	0.0000	1.5235
Total	1.1100e-003	0.0118	6.6300e-003	2.0000e-005	6.2700e-003	4.8000e-004	6.7500e-003	3.0000e-003	4.4000e-004	3.4400e-003	0.0000	1.5113	1.5113	4.9000e-004	0.0000	1.5235

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0477	0.0477	0.0000	0.0000	0.0481
Total	2.0000e-005	1.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0477	0.0477	0.0000	0.0000	0.0481

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1100e-003	0.0118	6.6300e-003	2.0000e-005		4.8000e-004	4.8000e-004		4.4000e-004	4.4000e-004	0.0000	1.5113	1.5113	4.9000e-004	0.0000	1.5235
Total	1.1100e-003	0.0118	6.6300e-003	2.0000e-005	6.2700e-003	4.8000e-004	6.7500e-003	3.0000e-003	4.4000e-004	3.4400e-003	0.0000	1.5113	1.5113	4.9000e-004	0.0000	1.5235

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3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	1.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0477	0.0477	0.0000	0.0000	0.0481
Total	2.0000e-005	1.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0477	0.0477	0.0000	0.0000	0.0481

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-003	0.0276	0.0174	4.0000e-005		1.1400e-003	1.1400e-003		1.0500e-003	1.0500e-003	0.0000	3.6207	3.6207	1.1700e-003	0.0000	3.6500
Total	2.6000e-003	0.0276	0.0174	4.0000e-005	0.0142	1.1400e-003	0.0153	6.8500e-003	1.0500e-003	7.9000e-003	0.0000	3.6207	3.6207	1.1700e-003	0.0000	3.6500

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3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	4.2000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1193	0.1193	0.0000	0.0000	0.1203
Total	5.0000e-005	3.0000e-005	4.2000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1193	0.1193	0.0000	0.0000	0.1203

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-003	0.0276	0.0174	4.0000e-005		1.1400e-003	1.1400e-003		1.0500e-003	1.0500e-003	0.0000	3.6207	3.6207	1.1700e-003	0.0000	3.6500
Total	2.6000e-003	0.0276	0.0174	4.0000e-005	0.0142	1.1400e-003	0.0153	6.8500e-003	1.0500e-003	7.9000e-003	0.0000	3.6207	3.6207	1.1700e-003	0.0000	3.6500

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3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	4.2000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1193	0.1193	0.0000	0.0000	0.1203
Total	5.0000e-005	3.0000e-005	4.2000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1193	0.1193	0.0000	0.0000	0.1203

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1214	0.9460	1.0702	1.8900e-003		0.0385	0.0385		0.0372	0.0372	0.0000	155.2776	155.2776	0.0259	0.0000	155.9241
Total	0.1214	0.9460	1.0702	1.8900e-003		0.0385	0.0385		0.0372	0.0372	0.0000	155.2776	155.2776	0.0259	0.0000	155.9241

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3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7000e-004	0.0152	4.7100e-003	7.0000e-005	2.2500e-003	9.0000e-005	2.3400e-003	6.5000e-004	9.0000e-005	7.4000e-004	0.0000	6.7000	6.7000	1.4000e-004	9.8000e-004	6.9963
Worker	5.0100e-003	3.3300e-003	0.0447	1.4000e-004	0.0170	8.0000e-005	0.0170	4.5100e-003	7.0000e-005	4.5800e-003	0.0000	12.7507	12.7507	3.4000e-004	3.4000e-004	12.8591
Total	5.3800e-003	0.0186	0.0494	2.1000e-004	0.0192	1.7000e-004	0.0194	5.1600e-003	1.6000e-004	5.3200e-003	0.0000	19.4507	19.4507	4.8000e-004	1.3200e-003	19.8554

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1214	0.9460	1.0702	1.8900e-003		0.0385	0.0385		0.0372	0.0372	0.0000	155.2774	155.2774	0.0259	0.0000	155.9239
Total	0.1214	0.9460	1.0702	1.8900e-003		0.0385	0.0385		0.0372	0.0372	0.0000	155.2774	155.2774	0.0259	0.0000	155.9239

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7000e-004	0.0152	4.7100e-003	7.0000e-005	2.2500e-003	9.0000e-005	2.3400e-003	6.5000e-004	9.0000e-005	7.4000e-004	0.0000	6.7000	6.7000	1.4000e-004	9.8000e-004	6.9963
Worker	5.0100e-003	3.3300e-003	0.0447	1.4000e-004	0.0170	8.0000e-005	0.0170	4.5100e-003	7.0000e-005	4.5800e-003	0.0000	12.7507	12.7507	3.4000e-004	3.4000e-004	12.8591
Total	5.3800e-003	0.0186	0.0494	2.1000e-004	0.0192	1.7000e-004	0.0194	5.1600e-003	1.6000e-004	5.3200e-003	0.0000	19.4507	19.4507	4.8000e-004	1.3200e-003	19.8554

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0192	0.1510	0.1804	3.2000e-004		5.6900e-003	5.6900e-003		5.4900e-003	5.4900e-003	0.0000	26.3367	26.3367	4.3000e-003	0.0000	26.4442
Total	0.0192	0.1510	0.1804	3.2000e-004		5.6900e-003	5.6900e-003		5.4900e-003	5.4900e-003	0.0000	26.3367	26.3367	4.3000e-003	0.0000	26.4442

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3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.5700e-003	7.9000e-004	1.0000e-005	3.8000e-004	2.0000e-005	4.0000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.1170	1.1170	2.0000e-005	1.6000e-004	1.1663
Worker	8.0000e-004	5.1000e-004	7.1300e-003	2.0000e-005	2.8800e-003	1.0000e-005	2.8900e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.1116	2.1116	5.0000e-005	5.0000e-005	2.1288
Total	8.6000e-004	3.0800e-003	7.9200e-003	3.0000e-005	3.2600e-003	3.0000e-005	3.2900e-003	8.7000e-004	2.0000e-005	9.1000e-004	0.0000	3.2286	3.2286	7.0000e-005	2.1000e-004	3.2951

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0192	0.1510	0.1804	3.2000e-004		5.6900e-003	5.6900e-003		5.4900e-003	5.4900e-003	0.0000	26.3366	26.3366	4.3000e-003	0.0000	26.4441
Total	0.0192	0.1510	0.1804	3.2000e-004		5.6900e-003	5.6900e-003		5.4900e-003	5.4900e-003	0.0000	26.3366	26.3366	4.3000e-003	0.0000	26.4441

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3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.5700e-003	7.9000e-004	1.0000e-005	3.8000e-004	2.0000e-005	4.0000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.1170	1.1170	2.0000e-005	1.6000e-004	1.1663
Worker	8.0000e-004	5.1000e-004	7.1300e-003	2.0000e-005	2.8800e-003	1.0000e-005	2.8900e-003	7.6000e-004	1.0000e-005	7.8000e-004	0.0000	2.1116	2.1116	5.0000e-005	5.0000e-005	2.1288
Total	8.6000e-004	3.0800e-003	7.9200e-003	3.0000e-005	3.2600e-003	3.0000e-005	3.2900e-003	8.7000e-004	2.0000e-005	9.1000e-004	0.0000	3.2286	3.2286	7.0000e-005	2.1000e-004	3.2951

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8700e-003	0.0266	0.0440	7.0000e-005		1.2300e-003	1.2300e-003		1.1400e-003	1.1400e-003	0.0000	5.8868	5.8868	1.8700e-003	0.0000	5.9334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8700e-003	0.0266	0.0440	7.0000e-005		1.2300e-003	1.2300e-003		1.1400e-003	1.1400e-003	0.0000	5.8868	5.8868	1.8700e-003	0.0000	5.9334

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3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	9.0000e-005	1.2800e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3786	0.3786	1.0000e-005	1.0000e-005	0.3817
Total	1.4000e-004	9.0000e-005	1.2800e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3786	0.3786	1.0000e-005	1.0000e-005	0.3817

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8700e-003	0.0266	0.0440	7.0000e-005		1.2300e-003	1.2300e-003		1.1400e-003	1.1400e-003	0.0000	5.8868	5.8868	1.8700e-003	0.0000	5.9334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.8700e-003	0.0266	0.0440	7.0000e-005		1.2300e-003	1.2300e-003		1.1400e-003	1.1400e-003	0.0000	5.8868	5.8868	1.8700e-003	0.0000	5.9334

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3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	9.0000e-005	1.2800e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3786	0.3786	1.0000e-005	1.0000e-005	0.3817
Total	1.4000e-004	9.0000e-005	1.2800e-003	0.0000	5.2000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.3786	0.3786	1.0000e-005	1.0000e-005	0.3817

3.7 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	0.4980	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784

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3.7 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1456	0.1456	0.0000	0.0000	0.1468
Total	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1456	0.1456	0.0000	0.0000	0.1468

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.5000e-004	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	0.4980	5.7300e-003	9.0500e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1456	0.1456	0.0000	0.0000	0.1468
Total	6.0000e-005	4.0000e-005	4.9000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1456	0.1456	0.0000	0.0000	0.1468

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Integrate Below Market Rate Housing

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6911	1.6156	14.1454	0.0264	2.8806	0.0197	2.9004	0.7689	0.0184	0.7873	0.0000	2,477.5285	2,477.5285	0.1885	0.1295	2,520.8278
Unmitigated	1.9705	2.1470	18.7148	0.0391	4.3273	0.0279	4.3551	1.1551	0.0259	1.1810	0.0000	3,662.4274	3,662.4274	0.2321	0.1702	3,718.9499

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	470.00	470.00	470.00	1,085,515	722,625
Condo/Townhouse	4,600.00	4,600.00	4600.00	10,624,194	7,072,498
Total	5,070.00	5,070.00	5,070.00	11,709,709	7,795,123

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776
Condo/Townhouse	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776

5.0 Energy Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	14.9724	14.9724	2.4200e-003	2.9000e-004	15.1204
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	14.9724	14.9724	2.4200e-003	2.9000e-004	15.1204
NaturalGas Mitigated	2.8600e-003	0.0244	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	28.2918	28.2918	5.4000e-004	5.2000e-004	28.4599
NaturalGas Unmitigated	2.8600e-003	0.0244	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	28.2918	28.2918	5.4000e-004	5.2000e-004	28.4599

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	98677.9	5.3000e-004	4.5500e-003	1.9300e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2658	5.2658	1.0000e-004	1.0000e-004	5.2971
Condo/Townhouse	431491	2.3300e-003	0.0199	8.4600e-003	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	23.0260	23.0260	4.4000e-004	4.2000e-004	23.1628
Total		2.8600e-003	0.0244	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	28.2918	28.2918	5.4000e-004	5.2000e-004	28.4599

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	98677.9	5.3000e-004	4.5500e-003	1.9300e-003	3.0000e-005		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	5.2658	5.2658	1.0000e-004	1.0000e-004	5.2971
Condo/Townhouse	431491	2.3300e-003	0.0199	8.4600e-003	1.3000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	23.0260	23.0260	4.4000e-004	4.2000e-004	23.1628
Total		2.8600e-003	0.0244	0.0104	1.6000e-004		1.9800e-003	1.9800e-003		1.9800e-003	1.9800e-003	0.0000	28.2918	28.2918	5.4000e-004	5.2000e-004	28.4599

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	40610.1	3.7574	6.1000e-004	7.0000e-005	3.7946
Condo/Townhouse	121212	11.2150	1.8100e-003	2.2000e-004	11.3259
Total		14.9724	2.4200e-003	2.9000e-004	15.1204

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	40610.1	3.7574	6.1000e-004	7.0000e-005	3.7946
Condo/Townhouse	121212	11.2150	1.8100e-003	2.2000e-004	11.3259
Total		14.9724	2.4200e-003	2.9000e-004	15.1204

6.0 Area Detail

Robson Homes - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3334	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347
Unmitigated	0.3334	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347

Robson Homes - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0497					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2758					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.8100e-003	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347
Total	0.3334	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0497					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2758					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.8100e-003	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347
Total	0.3334	2.9900e-003	0.2598	1.0000e-005		1.4400e-003	1.4400e-003		1.4400e-003	1.4400e-003	0.0000	0.4245	0.4245	4.1000e-004	0.0000	0.4347

7.0 Water Detail

7.1 Mitigation Measures Water

Robson Homes - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.3307	0.0746	1.7900e-003	4.7271
Unmitigated	2.3307	0.0746	1.7900e-003	4.7271

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.65154 / 0.410754	0.6659	0.0213	5.1000e-004	1.3506
Condo/Townhouse	1.62885 / 1.02688	1.6648	0.0533	1.2800e-003	3.3765
Total		2.3307	0.0746	1.7900e-003	4.7271

Robson Homes - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.65154 / 0.410754	0.6659	0.0213	5.1000e-004	1.3506
Condo/Townhouse	1.62885 / 1.02688	1.6648	0.0533	1.2800e-003	3.3765
Total		2.3307	0.0746	1.7900e-003	4.7271

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.2682	0.1931	0.0000	8.0967
Unmitigated	3.2682	0.1931	0.0000	8.0967

Robson Homes - Santa Clara County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	4.6	0.9338	0.0552	0.0000	2.3134
Condo/Townhouse	11.5	2.3344	0.1380	0.0000	5.7834
Total		3.2682	0.1931	0.0000	8.0967

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	4.6	0.9338	0.0552	0.0000	2.3134
Condo/Townhouse	11.5	2.3344	0.1380	0.0000	5.7834
Total		3.2682	0.1931	0.0000	8.0967

9.0 Operational Offroad

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Santa Clara County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	1	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	1	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	1	1	No Change	0.00
Cranes	Diesel	No Change	1	1	No Change	0.00
Forklifts	Diesel	No Change	1	1	No Change	0.00
Generator Sets	Diesel	No Change	1	1	No Change	0.00
Graders	Diesel	No Change	1	2	No Change	0.00
Pavers	Diesel	No Change	1	1	No Change	0.00
Paving Equipment	Diesel	No Change	1	1	No Change	0.00
Rollers	Diesel	No Change	1	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	1	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	1	8	No Change	0.00
Welders	Diesel	No Change	1	3	No Change	0.00

Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Air Compressors	8.50000E-004	5.73000E-003	9.05000E-003	1.00000E-005	2.60000E-004	2.60000E-004	0.00000E+000	1.27663E+000	1.27663E+000	7.00000E-005	0.00000E+000	1.27837E+000
Cement and Mortar Mixers	2.20000E-004	1.38000E-003	1.16000E-003	0.00000E+000	5.00000E-005	5.00000E-005	0.00000E+000	1.71850E-001	1.71850E-001	2.00000E-005	0.00000E+000	1.72300E-001
Concrete/Industrial Saws	3.13000E-003	2.41400E-002	3.65000E-002	6.00000E-005	1.11000E-003	1.11000E-003	0.00000E+000	5.37656E+000	5.37656E+000	2.60000E-004	0.00000E+000	5.38295E+000
Cranes	2.46800E-002	2.59160E-001	1.32690E-001	4.30000E-004	1.08100E-002	9.95000E-003	0.00000E+000	3.80208E+001	3.80208E+001	1.23000E-002	0.00000E+000	3.83282E+001
Forklifts	6.99000E-003	6.55600E-002	8.53900E-002	1.10000E-004	3.75000E-003	3.45000E-003	0.00000E+000	1.00719E+001	1.00719E+001	3.26000E-003	0.00000E+000	1.01533E+001
Generator Sets	2.82300E-002	2.52290E-001	3.66320E-001	6.60000E-004	1.08500E-002	1.08500E-002	0.00000E+000	5.65208E+001	5.65208E+001	2.26000E-003	0.00000E+000	5.65772E+001
Graders	1.06000E-003	1.24700E-002	4.97000E-003	2.00000E-005	4.00000E-004	3.70000E-004	0.00000E+000	1.74318E+000	1.74318E+000	5.60000E-004	0.00000E+000	1.75727E+000
Pavers	6.50000E-004	5.94000E-003	1.08600E-002	2.00000E-005	2.80000E-004	2.60000E-004	0.00000E+000	1.54786E+000	1.54786E+000	5.00000E-004	0.00000E+000	1.56038E+000
Paving Equipment	7.30000E-004	6.32000E-003	1.27300E-002	2.00000E-005	3.10000E-004	2.90000E-004	0.00000E+000	1.78859E+000	1.78859E+000	5.80000E-004	0.00000E+000	1.80306E+000
Rollers	6.00000E-004	6.31000E-003	8.08000E-003	1.00000E-005	3.20000E-004	2.90000E-004	0.00000E+000	1.00835E+000	1.00835E+000	3.30000E-004	0.00000E+000	1.01651E+000
Rubber Tired Dozers	8.95000E-003	9.17700E-002	4.03100E-002	1.10000E-004	4.13000E-003	3.80000E-003	0.00000E+000	9.65914E+000	9.65914E+000	3.12000E-003	0.00000E+000	9.73724E+000
Tractors/Loaders/Backhoes	1.62900E-002	1.64030E-001	2.55880E-001	3.60000E-004	7.41000E-003	6.82000E-003	0.00000E+000	3.13495E+001	3.13495E+001	1.01400E-002	0.00000E+000	3.16030E+001
Welders	7.00500E-002	4.12540E-001	4.98580E-001	7.70000E-004	1.39500E-002	1.39500E-002	0.00000E+000	5.64662E+001	5.64662E+001	5.71000E-003	0.00000E+000	5.66088E+001

Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Air Compressors	8.50000E-004	5.73000E-003	9.05000E-003	1.00000E-005	2.60000E-004	2.60000E-004	0.00000E+000	1.27663E+000	1.27663E+000	7.00000E-005	0.00000E+000	1.27837E+000
Cement and Mortar Mixers	2.20000E-004	1.38000E-003	1.16000E-003	0.00000E+000	5.00000E-005	5.00000E-005	0.00000E+000	1.71850E-001	1.71850E-001	2.00000E-005	0.00000E+000	1.72300E-001
Concrete/Industrial Saws	3.13000E-003	2.41400E-002	3.65000E-002	6.00000E-005	1.11000E-003	1.11000E-003	0.00000E+000	5.37656E+000	5.37656E+000	2.60000E-004	0.00000E+000	5.38294E+000
Cranes	2.46800E-002	2.59160E-001	1.32690E-001	4.30000E-004	1.08100E-002	9.95000E-003	0.00000E+000	3.80208E+001	3.80208E+001	1.23000E-002	0.00000E+000	3.83282E+001
Forklifts	6.99000E-003	6.55600E-002	8.53900E-002	1.10000E-004	3.75000E-003	3.45000E-003	0.00000E+000	1.00718E+001	1.00718E+001	3.26000E-003	0.00000E+000	1.01533E+001
Generator Sets	2.82300E-002	2.52290E-001	3.66320E-001	6.60000E-004	1.08500E-002	1.08500E-002	0.00000E+000	5.65207E+001	5.65207E+001	2.26000E-003	0.00000E+000	5.65771E+001
Graders	1.06000E-003	1.24700E-002	4.97000E-003	2.00000E-005	4.00000E-004	3.70000E-004	0.00000E+000	1.74317E+000	1.74317E+000	5.60000E-004	0.00000E+000	1.75727E+000
Pavers	6.50000E-004	5.94000E-003	1.08600E-002	2.00000E-005	2.80000E-004	2.60000E-004	0.00000E+000	1.54786E+000	1.54786E+000	5.00000E-004	0.00000E+000	1.56037E+000
Paving Equipment	7.30000E-004	6.32000E-003	1.27300E-002	2.00000E-005	3.10000E-004	2.90000E-004	0.00000E+000	1.78859E+000	1.78859E+000	5.80000E-004	0.00000E+000	1.80305E+000
Rollers	6.00000E-004	6.31000E-003	8.08000E-003	1.00000E-005	3.20000E-004	2.90000E-004	0.00000E+000	1.00835E+000	1.00835E+000	3.30000E-004	0.00000E+000	1.01651E+000
Rubber Tired Dozers	8.95000E-003	9.17700E-002	4.03100E-002	1.10000E-004	4.13000E-003	3.80000E-003	0.00000E+000	9.65913E+000	9.65913E+000	3.12000E-003	0.00000E+000	9.73723E+000
Tractors/Loaders/Balckhoes	1.62900E-002	1.64030E-001	2.55880E-001	3.60000E-004	7.41000E-003	6.82000E-003	0.00000E+000	3.13494E+001	3.13494E+001	1.01400E-002	0.00000E+000	3.16029E+001
Welders	7.00500E-002	4.12540E-001	4.98580E-001	7.70000E-004	1.39500E-002	1.39500E-002	0.00000E+000	5.64661E+001	5.64661E+001	5.71000E-003	0.00000E+000	5.66088E+001

Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85772E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.31507E-006	1.31507E-006	0.00000E+000	0.00000E+000	1.30452E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.92866E-007	9.92866E-007	0.00000E+000	0.00000E+000	9.84903E-007
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.23848E-006	1.23848E-006	0.00000E+000	0.00000E+000	1.23725E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	5.73664E-006	5.73664E-006	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	6.40870E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	5.54613E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.03529E-006	1.03529E-006	0.00000E+000	0.00000E+000	1.02699E-006
Tractors/Loaders/Balckhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.27594E-006	1.27594E-006	0.00000E+000	0.00000E+000	1.26570E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.23968E-006	1.23968E-006	0.00000E+000	0.00000E+000	1.23656E-006

Fugitive Dust Mitigation

Yes/No Mitigation Measure Mitigation Input Mitigation Input Mitigation Input

No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00
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Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Water Exposed Area	PM10 Reduction	0.00	PM2.5 Reduction	0.00	Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.02	0.01	0.02	0.01	0.00	0.00
Demolition	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.01	0.01	0.01	0.01	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.01	0.00	0.01	0.00	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Robson Homes

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	14.18	24.75	24.42	32.36	29.20	29.22	0.00	32.35	32.35	18.77	23.92	32.22
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value 3
Yes	Land Use	Increase Density	0.00	24.00	0.00	
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
Yes	Land Use	Increase Transit Accessibility	0.21	0.10		
Yes	Land Use	Integrate Below Market Rate Housing	0.00	11.00		
	Land Use	Land Use SubTotal	0.33			

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.33		
No	Commute	Implement Trip Reduction Program			
No	Commute	Transit Subsidy			
No	Commute	Implement Employee Parking "Cash Out"			
No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00		
No	Commute	Employee Vanpool/Shuttle	0.00		2.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

No	Commute	Provide Ride Sharing Program			
	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00		
		Total VMT Reduction	0.33		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	150.00
Yes	Use Low VOC Paint (Non-residential Interior)	100.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

No	Install High Efficiency Lighting		
No	On-site Renewable		30.00

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

San Francisco Bay Regional Water Quality Control Board

November 21, 2023

GeoTracker ID: [T10000020779](#) (RAS)

Robson Homes LLC
Attn: Mr. Mark Robson
2185 The Alameda, Suite 150
San Jose, CA 95126
mrobson@robsonhomes.com

Subject: Approval of November 15, 2023, Current Conditions Report and Corrective Action Plan, Antoun Property, 85 Gilman Avenue, 101 Gilman Avenue, and 60 Dillon Avenue, Campbell, Santa Clara County

Dear Mr. Robson:

This letter documents our review and approval of the November 15, 2023, Current Conditions Report and Corrective Action Plan ([CCR/CAP](#)) prepared on behalf of Robson Homes LLC (Robson Homes) and the Antoun Family Trust for the Antoun Property located at 85 Gilman Avenue, 101 Gilman Avenue, and 60 Dillon Avenue in Cambell. The CCR/CAP describes the site characteristics, previous environmental work performed at the Site, nature and extent of contamination, and completed and proposed corrective actions. The basis for our approval is explained below.

BACKGROUND

Site Description and Proposed Redevelopment

The “Site” includes three properties that comprise approximately 0.6 acres. The current land use for the Site is light industrial/commercial with the surrounding properties being a mix of residential and light industrial/commercial. The Site was originally developed in the early 1900s with residential dwellings and transitioned along with the surrounding properties to light industrial and commercial properties by the 1970s. Several businesses have operated at the Site, including metal etching, woodworking, pest control, painting, and construction contracting. Chemical use from current and historical industrial operations includes/included small quantities of trichloroethane (TCA), trichloroethene (TCE), epoxies and paint thinners, lacquers, coatings, primers, inks, nitric acid, and sodium carbonate.

The proposed Site redevelopment includes demolition of all existing buildings and parking lots and development of a residential subdivision including townhome units and a private street.

Environmental Investigations and Remediation

Since 2015, environmental investigations were conducted to characterize soil, soil vapor, and groundwater at the Site. The primary concerns are: (1) soil – lead, nickel, hexavalent chromium, cobalt, and dieldrin in shallow soil at concentrations slightly above the current (2019) Regional Water Board Environmental Screening Levels (ESLs) for residential direct exposure; and (2) soil vapor – volatile organic compounds (VOCs), primarily carbon tetrachloride and tetrachloroethene (PCE) at concentrations above the residential direct exposure ESLs. No concerns were identified for groundwater.

A soil vapor extraction (SVE) system was operated as an interim measure from approximately August 2021 to March 2022 to reduce soil vapor concentrations of carbon tetrachloride and PCE. Following shutdown of the SVE system, soil vapor sampling confirmed the SVE system was effective at reducing VOC concentrations. Residual VOC concentrations in soil vapor are low strength and do not pose a significant vapor intrusion threat considering the proposed future residential use.

The CCR/CAP proposes the following corrective actions to protect the community during and after Site redevelopment: (1) excavation of shallow soil to address metals and dieldrin following building demolition; and (2) sampling of soil for VOCs beneath the buildings to assess the potential for a significant residual source, and if necessary, contingent corrective action (e.g., excavation, additional SVE, mitigation).

In August 2023, subsequent to preparation of the Draft CCR/CAP, soil borings were advanced inside the buildings to enable soil sampling for VOCs. No VOCs were detected in soil samples except for PCE in one sample beneath the residential direct exposure ESL and 1,2,4-trimethylbenzene (124-TMB) in one sample. Although there is no residential direct exposure ESL for 124-TMB, the detected concentration is far below the 2023 USEPA Regional Screening Level for Resident Soil. These results indicate there is no significant residual source of VOCs in soil beneath the buildings, and hence, contingent corrective action for VOCs is not warranted. In October 2023, the three monitoring wells were re-sampled for VOCs to confirm the previous results. No VOCs were detected. The results of the August and October 2023 sampling are presented in the [October 19, 2023, Results of Additional Soil and Groundwater Sampling](#).

Public Comment

The Draft CCR/CAP was posted for a 30-day public comment period between August 24 and September 22, 2023. Regional Water Board staff reviewed the comments and the November 6, 2023, response to comments prepared on behalf of Robson Homes. Based on staff review, no changes were deemed necessary to the CCR/CAP.

BASIS FOR APPROVAL

Following a 30-day public comment period, Regional Water Board staff have reviewed the public comments and have found the CCR/CAP acceptable. Hence, the CCR/CAP is approved.

Antoun Property, Cambell

November 21, 2023

Page 3

NEXT STEPS

Since the soil sampling beneath the buildings has been performed and no significant VOC contamination was detected, the remaining task to implement for the CAP is the excavation of shallow soil to address metals and dieldrin following building demolition. After implementation of the CAP and submission of a completion report deemed acceptable by the Regional Water Board, the Site will be eligible for no further action (NFA). A proposal should be submitted for NFA that addresses the narrative criteria presented in the [2009 Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites](#). Detailed criteria are presented in Attachment A of the 2009 Assessment Tool.

If you have any questions, please contact Ross Steenson of my staff at (510) 622-2445 or Ross.Steenson@waterboards.ca.gov.

Sincerely,

Jessica Watkins, P.E.
Groundwater Protection Division Manager

Copy:

Anne Gates, Ramboll, agates@ramboll.com

APPENDIX F

3 February 2023

Molly Robson

Robson Homes

2185 The Alameda, Suite 150

San Jose, CA 95126

merobson@robsonhomes.com

**Subject: 60 Dillon and 57 – 101 Gilman, Campbell, CA –
Environmental Noise Study
Salter Project 22-0554**

Dear Molly:

As requested, we have conducted an environmental noise study for the proposed residences at 60 Dillon Avenue, 57 Gilman Avenue, 63 Gilman Avenue, 71 to 79 Gilman Avenue, 85 Gilman Avenue, and 101 Gilman Avenue in Campbell. The project consists of 29 attached 3-story homes over 9 buildings on a 1.2 acre site in Campbell. The purpose of the study is to quantify the noise environment at the site and identify noise reduction measures as needed.

ACOUSTICAL CRITERIA

California Building Code (CBC)

The 2022 California Building Code, Section 1206.4, states that interior noise levels attributable to exterior noise sources shall not exceed CNEL¹ 45 dB in any habitable room.

Campbell General Plan

Policy CNR-10 of the Campbell General Plan requires traffic-related noise be reduced to CNEL 45 dB indoors, which is consistent with the California Building Code requirement.

¹ CNEL (Community Noise Equivalent Level) – A descriptor for a 24-hour A-weighted average noise level. CNEL accounts for the increased acoustical sensitivity of people to noise during the evening and nighttime hours. CNEL penalizes sound levels by 5 dB during the hours of 7 PM to 10 PM and by 10 dB during the hours from 10 PM to 7 AM. For practical purposes, the DNL and CNEL are usually interchangeable.



Policy CNR-10 also has a CNEL 60 dB goal for outdoor noise in noise sensitive outdoor activity areas. Noise-sensitive outdoor activity areas are typically considered rear yard, common-use courtyard, etc. Section 21.16.070 E of the City of Campbell Municipal Code does not explicitly refer to private balconies as noise sensitive outdoor activity areas. As such, we have applied this requirement to the 2,200 square foot common open space behind the building at 60 Dillon Avenue, but not at 2nd floor private balconies.

NOISE ENVIRONMENT

Existing Noise Environment

The noise environment at the site is influenced primarily by traffic on Campbell Avenue, Dillon Avenue, Gillman Avenue, and SR-17.

To quantify the existing noise environment, we conducted multiday measurements at the site between 6 and 11 October 22. Table 1 below and **Figure 1** attached show the maximum measured CNEL, Leq(h)², and a description of the approximate monitor locations.

Table 1: Measured Noise Levels

Monitor	Location	Date	Measured Noise Level
L-1	Dillon Ave Monitor 25 feet east of Dillon Ave centerline 385 feet south of Campbell Ave centerline 12 feet above grade	6 to 11 October 2022	CNEL 66 dB ³ Leq(h) 66 dB
L-2	Gilman Ave Monitor 25 feet west of Gilman Ave centerline 190 feet south of Campbell Ave centerline, 12 feet above grade		CNEL 63 dB Leq(h) 66 dB
S-1	Mid Site Spot Measurement 140 feet west of Gilman 230 feet south of Campbell Ave centerline 5/25 feet above grade	6 October 2022 10:45-11:00	CNEL 57/61 dB Leq(h) 60/64 dB
S-2	Gilman Ave Spot Measurement 25 feet east of Dillon Ave centerline 385 feet south of Campbell Ave centerline 12 feet above grade	6 October 2022 11:15-11:30	CNEL 59 dB Leq(h) 62 dB



To account for future traffic volumes, we have added a 1 dB increase in environmental noise across the site for our estimates.

INTERIOR RESIDENTIAL NOISE

Exterior building assemblies will need to be sound-rated to reduce environmental noise to meet the California Building Code and Campbell General Plan criteria inside residences. Estimates suggest minimum STC 28 exterior windows and doors will be needed throughout the site, which is based on the following:

- Site Plan dated 13 January 2023, and floor plans and elevations dated 23 December 2022
- Residences will have hard finish floors
- The exterior wall assembly will be equivalent to a single stud assembly with a 3-coat stucco system, or comparable with a cementitious or wood siding finish

Sound insulation (STC) ratings should be for the complete assembly, including glass and frame, and should be based on laboratory test reports of similar sized samples from an NVLAP accredited laboratory. Only tested sound-rated assemblies should be used. For reference, typical construction-grade windows generally achieve STC 28.

Since windows will need to be closed to meet the interior noise criteria, the mechanical design should meet ventilation requirements with windows in the closed position, and the ventilation system will need to be designed such that it does not compromise sound insulation of the building shell.

OUTDOOR USE SPACE

The project includes an approximately 2,200 square foot open space behind the building at 60 Dillon Avenue. Estimated noise levels for a standing receiver at the open space are below CNEL 60 dB, which falls within the City's target.

*

*

*

² L_{eq} – The equivalent steady-state A-weighted sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period.

³ Landscaping equipment near the noise monitor on 6 October 2022 during 19:00 not included in data

This concludes our environmental noise study for the 60 Dillon and 57 – 101 Gilman project. Please call with any questions.

Best,

SALTER



Greg Enenstein
Associate



Alexander K. Salter, PE
Vice President

Enclosure





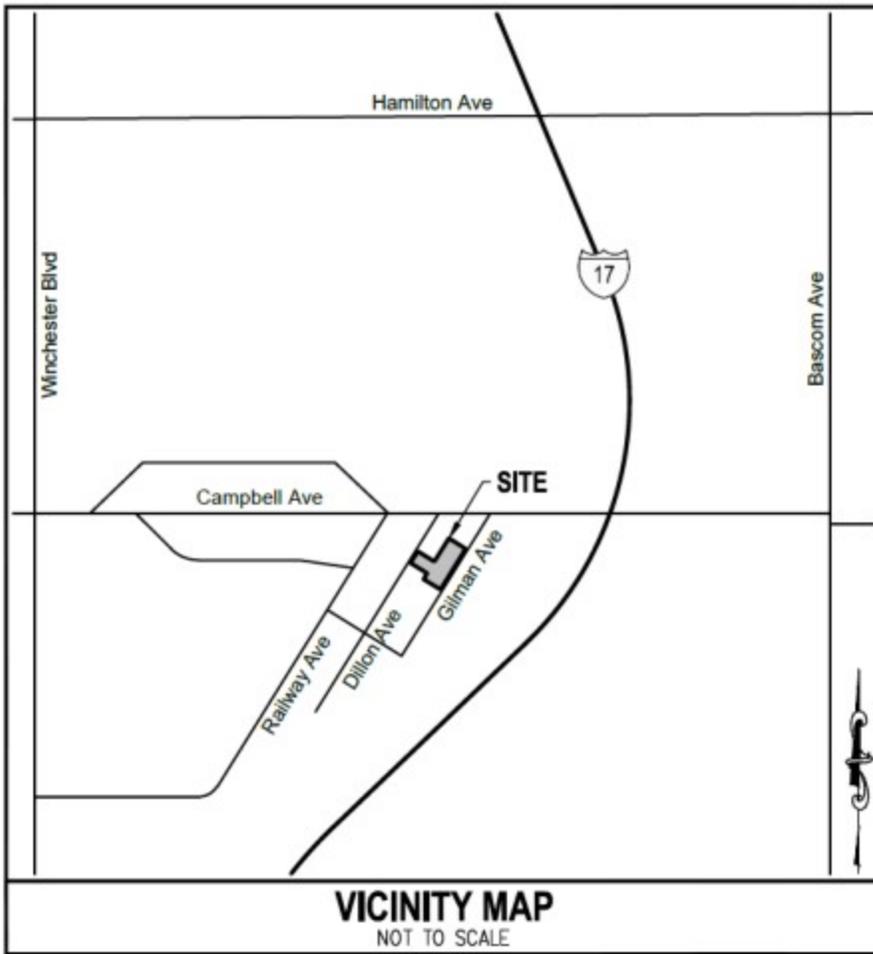
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60 DILLON AND 57-101 GILMAN MEASUREMENT LOCATIONS AND MEASURED NOISE LEVELS

FIGURE 1

Salter #
22-0554

GRE/AKS
10.25.22



Project Description:

The project proposes 25 townhomes with 3-bedroom and 2-bedroom floor plans, and 12 of the townhomes include Junior Accessory Dwelling Units consisting of 322 SF to 328 SF, and a 10-unit apartment building with 1-bedroom and 2-bedroom units. 23 of the townhomes will be sold at market rate, one will be sold at the moderate-income level, and one will be sold at the very low-income level, and two of the apartments will rent at the very low-income level. The site plan includes 50 covered and 14 uncovered parking spaces, internal driveways, and landscaping, and will cover 26,884 SF of the 50,094 SF site (54% coverage).



Richard Walker
Principal Planner



M: 310-804-0477
O: 424-404-7504
[website](#) | [linkedin](#) | [email](#)

APPENDIX G

Richard Walker

From: Richard Walker
Sent: Monday, November 20, 2023 1:13 PM
To: aerieways@aol.com; vjltestingcenter@aol.com; amahmutsuntribal@gmail.com; kanyon@kanyonconsulting.com; ams@indiancanyon.org; cnijmeh@muwekma.org; monicavarellano@gmail.com; huskanam@gmail.com; Katherine Perez; Lcamarena@tamien.org; thpo@tamien.org; qgeary@tamien.org; chochenyo@AOL.com; vincent.d.medina@gmail.com; kwood8934@aol.com
Cc: Daniel Fama; Nishant Seoni
Subject: City of Campbell - AB 52 Consultation
Importance: High

Dear Tribes,

The City of Campbell planning department is pleased to provide the location and description of a proposed multi-family housing project that requires compliance with the California Environmental Quality Act (CEQA). According to the CEQA Mitigated Negative Declaration that was prepared for the project (PLN-2023-125), the project will have no impacts on tribal cultural resources. However, California Assembly Bill (AB 52) requires public agencies to consult with tribes during the CEQA process. Therefore, the city planning department is requesting your review of the proposed project location and description, and any comments or concerns that you may have regarding the proposed project and its potential for impacts on tribal cultural resources. Please respond by email or by telephone at 424-404-7504. Thank you for your assistance, have a good day.

Project Location:

The 1.15-acre (50,094 SF) project site is located south of Campbell Ave between Dillon Ave and Gilman Ave, at 60 Dillon Avenue, and 57, 63, 71, 85, 101 Gilman Avenue, Campbell, CA 95008 and consists of six lots (APNs: 412-09-026; 412-09-032;-33;-34;-35;-36).

APPENDIX H

From: Daniel Fama
Sent: Monday, March 18, 2024 2:58 PM
To: Richard Walker
Cc: Lisa Brancatelli; Andrew Quan; Nishant Seoni
Subject: Re: Valley Water Comments on Robson Homes Planned Development

Hi Richard - Please see the below email from the Water District.

From: Andrew Quan <AQuan@valleywater.org>
Sent: Monday, March 18, 2024 2:22:33 PM
To: Daniel Fama <danielf@campbellca.gov>
Cc: Lisa Brancatelli <LBrancatelli@valleywater.org>
Subject: Valley Water Comments on Robson Homes Planned Development

You don't often get email from aquan@valleywater.org. [Learn why this is important](#)

Afternoon Daniel,

Valley Water has reviewed the Notice of Intent (NOI) to Adopt a Mitigated Negative Declaration (MND) for the Robson Homes Planned Development project in Campbell, received on February 27, 2024.

Per our review, we have the following comments:

1. **Section X, Hydrology and Water Quality, on Page 38 and 56:** According to the Federal Emergency Management Agency's (FEMA) current Flood Insurance Rate Map (FIRM) No. 06085C0237H, effective date May 18, 2009, the project site is located within Zone X, an area of minimal flood hazard". While the document is accurate in stating that the project site is located in Zone X, the description for Zone X at this site should be revised for accuracy to "described as an area of minimal flood hazard" instead of "described as 0.2% annual chance flood hazard". Please include the FEMA FIRM No.
2. Valley Water records indicate that 3 active wells are located on the project site. If the wells will continue to be used following permitted activity, they must be protected so that they do not become lost or damaged during completion of permitted activity. If the well will not be used following permitted activity, they must be properly destroyed under permit from Valley Water.

While Valley Water has records for most wells located in the County, it is always possible that a well exists that is not in Valley Water records. If previously unknown wells are found on the subject property during development, they must be properly destroyed under permit from Valley Water or registered with Valley Water and protected from damage.

For more information, please call Valley Water's Well Ordinance Program Hotline at 408-630-2660.

Thank you for the opportunity to comment on this NOI. For any future correspondence, please reference File 35121. You may reach me at AQuan@valleywater.org or at 408-630-1667.

Thank you,

ANDREW QUAN

ASSISTANT ENGINEER II - CIVIL

Community Projects Review Unit

Tel. (408) 630-1667

Santa Clara Valley Water District is now known as:



Clean Water • Healthy Environment • Flood Protection

VALLEY WATER

5750 Almaden Expressway, San Jose CA 95118

www.valleywater.org

From: Yee, Richard <RYee@robsonhomes.com>
Sent: Wednesday, March 20, 2024 5:44 PM
To: Nishant Seoni
Cc: Daniel Fama
Subject: RE: Project update

WARNING: This email originated from an external sender! Please do not open attachments or click on links unless you are certain it is legitimate.

Hi Nishant,

I have received comments regarding the mitigation measures from our construction:

AQ-1: BAAQMD Basic Control Measures

3) We think it is excessive to water 3 times a day as well as 4) sweep daily with water sweepers.

AQ-2: Enhanced Control Measures

We don't think we should have to provide these enhanced control measures.

GHG-1: Implement the following construction best practices

What is a US EPA SmartWay certified trucks (for deliveries and equipment transport).

Why do we need to offer meal options onsite or shuttles to nearby meal destinations when the downtown (food/restaurants) are a block away?

"Minimize energy used during site preparation by deconstructing existing structures to the greatest extent feasible" is time consuming (more energy) and expensive.

We are not going to certify wood products through a sustainable forestry program (although I read this is a recommendation and not required – is this correct?)

Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water (for example, we can start by not watering 3x a day and water sweepers as well).

We are open to a call/meeting if that would help to discuss the items we do not think are necessary.

Thank you.

Richard

From: Yee, Richard <RYee@robsonhomes.com>
Sent: Thursday, April 4, 2024 9:23 AM
To: Nishant Seoni
Cc: Darren Holland
Subject: RE: Updated mitigation measures

WARNING: This email originated from an external sender! Please do not open attachments or click on links unless you are certain it is legitimate.

Hi Nishant,

Thank you for responding to our comments.

Unfortunately, we noticed some additional items that are either new or we missed in our last review – my apologies if we missed them:

MM GHG-1

Use zero emission and hybrid-powered equipment to the greatest extent possible particularly if emissions are occurring near sensitive receptors or located within a BAAQMD designated CARE or Assembly Bill 617 community.

“To the greatest extent possible” means I am expending every effort and expense to make this happen. Can we revise the language to say “if reasonably available”?

Also, do you know if our project site falls under any of the 3 categories? The last part of the MM sounds very boiler plate and not specific at all to our project. We either need to or not.

Require all on-road heavy-duty trucks to be zero emissions or meet the most stringent emissions standard, such as model year 2024 to 2026 as a condition of contract.

What is on-road? What is a heavy-duty truck? Why would any vendor want to sign a contract with us if they have to replace all their vehicles with 2024 models? We cannot agree to this MM.

Use California Air Resources Board-approved renewable diesel fuel in off-road construction equipment and on-road trucks.

What is the intent of this MM? If we are buying gas in California, isn't the fuel legit? What is “renewable diesel fuel”? What if the trucks use regular gas? Does this mean we can't use gas powered vehicles? We don't think this MM is necessary.

We are available to discuss these items further if it would help.

Thank you.
Richard
408 761-0354 cell