INITIAL STUDY / NEGATIVE DECLARATION

FOR

THE COTTAGES AT KERN

FILE NOS. AS 20-20, Z 20-06, TM 20-06

APRIL 19, 2021

PREPARED FOR:
COMMUNITY DEVELOPMENT DEPARTMENT
CITY OF GILROY

PREPARED BY:
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A. BACKGROUND

Project Title	The Cottages at Kern (Architectural and Site Review AS 20-20, Zone Change Z 20-06, and Vesting Tract Map TM 20-06)
Project Description	The subdivision of the two existing lots into 32 lots, and the construction and occupation of 29 single family residences. The remaining three lots are for shared project access and amenity components.
Lead Agency Contact Person and Phone Number	Miguel Contreras, Planner Planning Division, Community Development Department City of Gilroy (408) 846-0440
Date Prepared	March 2021
Study Prepared by	M-Group 307 Orchard City Drive, Suite 100 Campbell, CA 95008
Project Location	Eastside of Kern Avenue between Tatum Avenue and St Clar Avenue, Gilroy, CA 95020 9130 & 9160 Kern Avenue APNs 790-17-002, 790-17-003
Project Sponsor Name and Address	Chris Zaballos, Director of Entitlements DR Horton 6883 Owens Drive Pleasanton, CA 94588
2020 General Plan Land Use	Medium Density Residential
2040 General Plan Land Use	Neighborhood Low Density Residential
Existing Zoning	R-3 (Medium Density Residential)
Proposed Zoning	R-3 PUD (Medium Density Residential with the Planned Unit Development Combining District)

Purpose and Intent

The purpose of this Initial Study/Negative Declaration (IS/ND) is to analyze the environmental impacts associated with the proposed Kern Avenue Cottages Project (hereinafter referred to as the "Project"). This IS/ND is intended to inform City decision-makers, responsible agencies, interested parties, and the general public about the potential environmental effects of the proposed project. The Lead Agency (City of Gilroy) intends to tier this document off of the

environmental impact report (SCH # 2015082014) prepared for the recently adopted 2040 General Plan to provide a comprehensive analysis of the project impacts and effects.

Legal Authority

This IS/ND for the Project has been prepared in full accordance with the procedural and substantive requirements of CEQA and the CEQA Guidelines. M-Group, at the request of the City of Gilroy, has prepared an Initial Study to determine the level of environmental review necessary for the proposed project. This IS/ND is being "tiered" from the analysis contained in the Environmental Impact Report for the 2020 General Plan that's was certified on April 9, 2001 and in the Final Environmental Impact Report (FEIR) for the 2040 General Plan as certified by the City Council on November 2, 2020.

CEQA Guidelines Section 15152 describes "tiering" as a mechanism to base a project specific analysis on a previously prepared environmental review document. Tiering refers to using the analysis of potential impacts contained in a broader EIR (such as one prepared for the general plan) with later environmental documents prepared for smaller projects; incorporating by reference the general discussions from the EIR; and concentrating on project impacts specific to the later project.

The 2040 General Plan and Final Environmental Impact Report referenced in this Initial Study are available for public review in the Community Development Department, 7351 Rosanna Street, Gilroy, CA 95020 during normal business hours and at the following internet location: http://www.cityofgilroy.org/274/2040-General-Plan.

Relationship to the 2020 and 2040 General Plans and EIRs

The Project was determined to be complete a few days prior to the City Council's approval of the 2040 General Plan. For that reason, the Project's General Plan conformity will be evaluated against the 2020 General Plan. The Land Use Designation for the site under the 2020 General Plan was Medium Density Residential with a density range of between 8 and 16 dwelling units per acre. The target density is 12 dwelling units per acre. The project proposes a density of 8.3 and is consistent with the characteristics and allowable density for that land use designation.

At a density of 8.3 dwelling units per acre, the Project is also consistent with the Land Use Designation set forth in the Gilroy 2040 General Plan. The 2040 General Plan Land Use Diagram identifies the site as Neighborhood District Low Density Residential. The maximum average density is 17.3 dwelling units per acre with a target density of 12.8 dwelling units per acre. The purpose of the land use designation is to support a range of attached and detached residential uses at densities up to 30 units per acre; though most future development is expected to occur at densities of between 7 and 9 units per acre.

Tiering this analysis off the certified Final Environmental Impact Reports for the 2020 General Plan and 2040 General Plan means that whenever a General Plan policy or program, or mitigation measure may mitigate or reduce an environmental impact, it is incorporated by this reference into the IS/ND. This incorporation by reference includes any Statements of

Overriding Considerations that may have been adopted during the certification process. Overriding consideration were adopted for the following impacts:

Agricultural Resources	Loss of Important Farmland
Air Quality	Inconsistent with Clean Air Plan
	Degrade Air Quality
Greenhouse Gases	Increased Greenhouse Gas Emissions
	Conflict with Applicable Plan, Policy or Regulation Adopted to Reduce Greenhouse Gas Emissions
Transportation/Mobility	Excess Vehicle Miles Traveled

Setting

The City of Gilroy encompasses approximately sixteen square miles in the central part of the Santa Clara Valley. The Santa Clara Valley is bounded by San Francisco Bay on the north, the Santa Cruz Mountains to the west, the Diablo Range to the east, and includes the agricultural lands around Hollister in the south. The Calaveras/Hayward fault zone parallels the Diablo Range along the east side of the valley. The project site is located in a residential area in northern Gilroy. The project is surrounded by unincorporated properties within the Sphere of Influence on three sides of the site. Figure 1 shows the location of the Project.

The Project site consists of a vacant rectangular parcel located on the east side of Kern Avenue south of Tatum Avenue. Access to the site will be from Kern Avenue. This vacant site contains minimal topography but has been used in the past as a place to deposit excess dirt from other grading projects. The site elevations range from 210 feet to 224 feet above mean sea level. Most of the site is between 212 and 215 feet above mean sea level. The highest elevation is atop a large dirt pile in the northern portion of the site. The site is crossed by a jurisdictional water primarily created by urban runoff from Kern Avenue. The surrounding land uses are a combination of residential, agricultural, and rural business residential uses. Figure 2 shows the location of the site and the surrounding area. Images of the site are provided in Figure 3.

Description of Project

The Project proposes to subdivide the 3.74-acre site into a total of 32 parcels, including a dedication for the right-of-way for Kern Avenue. Twenty-nine of the parcels would be residential and would each contain a single detached residential dwelling unit. The net project site, excluding those portions of the site being dedicated to Kern Avenue, is approximately 3.5 acres. This results in a project density of approximately 8.3 dwelling units per acre. Two of the parcels would be for shared site access and onsite parking, and one parcel would be an open space/play area. The proposed residential parcels would range in size from 3,082 square

feet to 7,389 square feet; though most residential lots are between 3,500 and 4,500 square feet in area. The layout of site plan is shown on Figure 4.

The project consists of three different floor plans. The smallest of the floor plan is a 1,544 square foot, 3-bedroom/2½-bath unit. The mid-sized floor plan is a 1,769 square foot, 4-bedroom/2½-bath unit. The largest of the three floor plans is for a 1,917 square foot 4-bedroom/3-bath unit. Each unit includes a two-car garage and fenced rear yard. The project will install street frontage improvements (i.e. additional paving, curb, gutter, and sidewalk) along Kern Avenue.

The proposed land use of the project, single family residential, is a permitted use in the R-3 Zoning district. The Planned Unit Development (PUD) proposes to modify some of the R-3 development standards for the project site.

Proposed modifications to the development standards would facilitate the detached single family dwelling, as opposed to a medium density, attached residential produce. The modified development standards are depicted in the following table. The Project would comply with the other requirements of the Zoning Code including maximum building height, minimum rear yard setback, minimum private open space, the minimum distance between the back of sidewalk and the face of the garage, and minimum required parking.

	Current R-3 Requirements	**Proposed with PUD**
Minimum Lot Size	8,880 square feet	3,000 square feet
Minimum Front Yard Setback (from the face of the curb)	26 feet	13 feet
Minimum Street Side Yard Setback (from the face of the curb)	21 feet	10 feet
Minimum Non-street Side Yard Setback	12 feet	5 feet

The project is proposed to be construction in four phases. Phase One would involve the construction of two model homes and a temporary parking lot (on a final phase residential lot). Phases Two and Three each involve 12 units located along the private street and alley. The final phase would involve construction of the three final units fronting on Kern Avenue. The proposed phasing plan for the Project is contained in Figure 5. The analysis assumes that all site development would occur with the first phase and that all construction will occur at the same time. This assumption provides the maximum potential impacts from project construction.

Site Layout and Access

The project site would be accessed through the City road network via Kern Avenue. Five of the twenty-nine residences face (front upon) and have direct access to Kern Avenue. The other twenty-four residences would front on and take access from the private street and alley internal to the project. The layout of site plan is shown on Figure 4.

The proposed sidewalk along the Project's Kern Avenue frontage would not immediately connect to sidewalks north or south of the site since there are no sidewalks in those areas. In the future when new development or public street improvements occur, these sidewalks would become connected.

Architecture

The Project is proposing three different architectural styles, with details typical of two-story suburban tract homes. All the units will have stucco exteriors with decorative shutters on the front elevations. The front elevations will have additional architectural details consistent with the underlying style. A "Traditional" style includes horizontal lap wood accent siding and flat slate-style roof tile. The "Spanish" style includes curved arches around the front door and porch along with decorative shutters, decorative tile vents, and a low profile "S" tile roofing. The "Farmhouse" style includes a board & batten accent siding and flat slate- style roof tile. Primary exterior colors include a variety of earth tones. Trim colors will complement the primary exterior colors consistent with the underlying architectural style. Typical building elevations are provided in Figure 6.

Landscaping

The project includes street trees, front yard landscaping for all of the proposed residences, and in the play area. The proposed street tree along Kern Avenue is the Red Maple (*Acer Rubrum*). These trees are depicted with this symbol, on Figure 4. The street tree along the private street is the Valley Oak (*Quercus Lobata*). These trees are depicted with this symbol, on Figure 4. The front yard landscaping include a variety of trees, shrubs and groundcover of primarily low water use species. The rear yards of the units would be landscaped by the future owners. Future rear yard landscaping is expected to include combinations of trees, shrubs, groundcover, turf, and non-landscape materials. All developer installed landscaping will be required to comply with the City's water efficient irrigation standards and requirements.

Utilities

The site is currently served by all utilities from the adjacent streets. The City of Gilroy provides water, sewer and storm drain. Pacific Gas & Electric provides natural gas and electrical service. Communication utilities are provided by Verizon and Charter Communications. No new public streets or street extensions would result from the Project.

Entitlements

The Project requires the following City (Lead Agency) entitlement (application) approvals:

- Architectural and Site Review pursuant to Article L of Chapter 30 of the Gilroy City Code to approve the site layout, building architecture and materials.
- Zone Change to add a Planned Unit Development (PUD) combining district designation to the R-3 (High Density Residential) Zoning Designation for the project site to establish project-specific design standards pursuant to Article XXVI of Chapter 30 of the Gilroy City Code.

- Vesting Tentative Tract Map pursuant to Article III of Chapter 21 of the Gilroy City Code to subdivide the project site into 32 parcels.

Other Public Agencies Whose Approval is Required

- Central Coast Regional Water Quality Control Board - Water Quality Certification (Section 401, Federal Clean Water Act)
- California Department of Fish and Wildlife - Streambed Alteration Agreement (Chapter 1600, State Fish and Game Code)

Figure 1 Regional Location

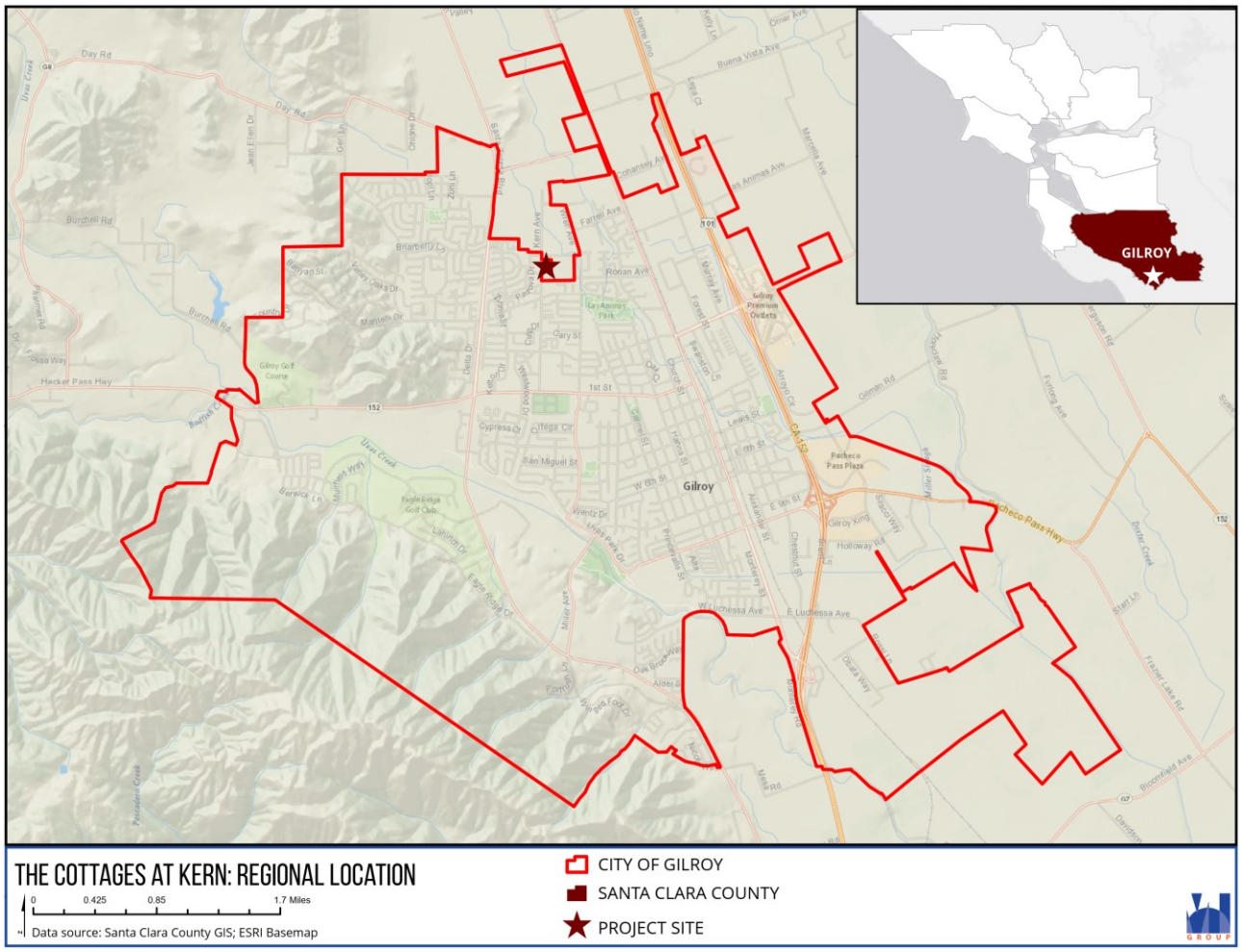

Figure 2 Project Vicinity

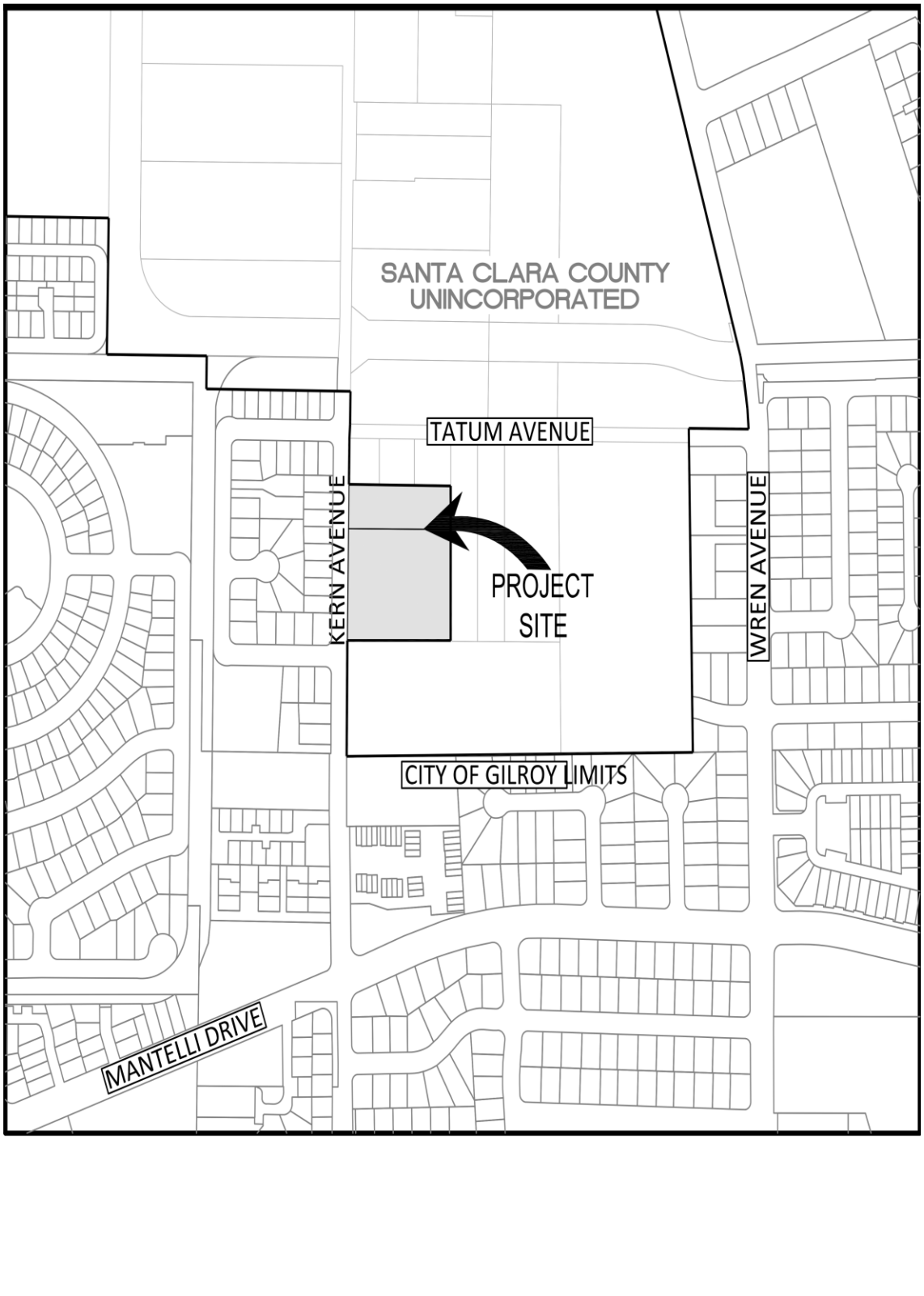

Figure 3 Site Images

Figure 3-1. View of the Project Site from the middle of the site looking south.

Figure 3-2. View of the Project Site from the southwest corner looking northeast.

NOTE: The mound of grading spoil material is visible as a small hill on the left edge of the image.

Figure 3-3. Jurisdictional drainage swale from Kern Avenue looking east (in the downstream direction).

Figure 3-4. Large mound of previously dumped grading spoil on the northern portion of the site as viewed from the northern property line.

Figure 4 Illustrated Site & Landscape Plan

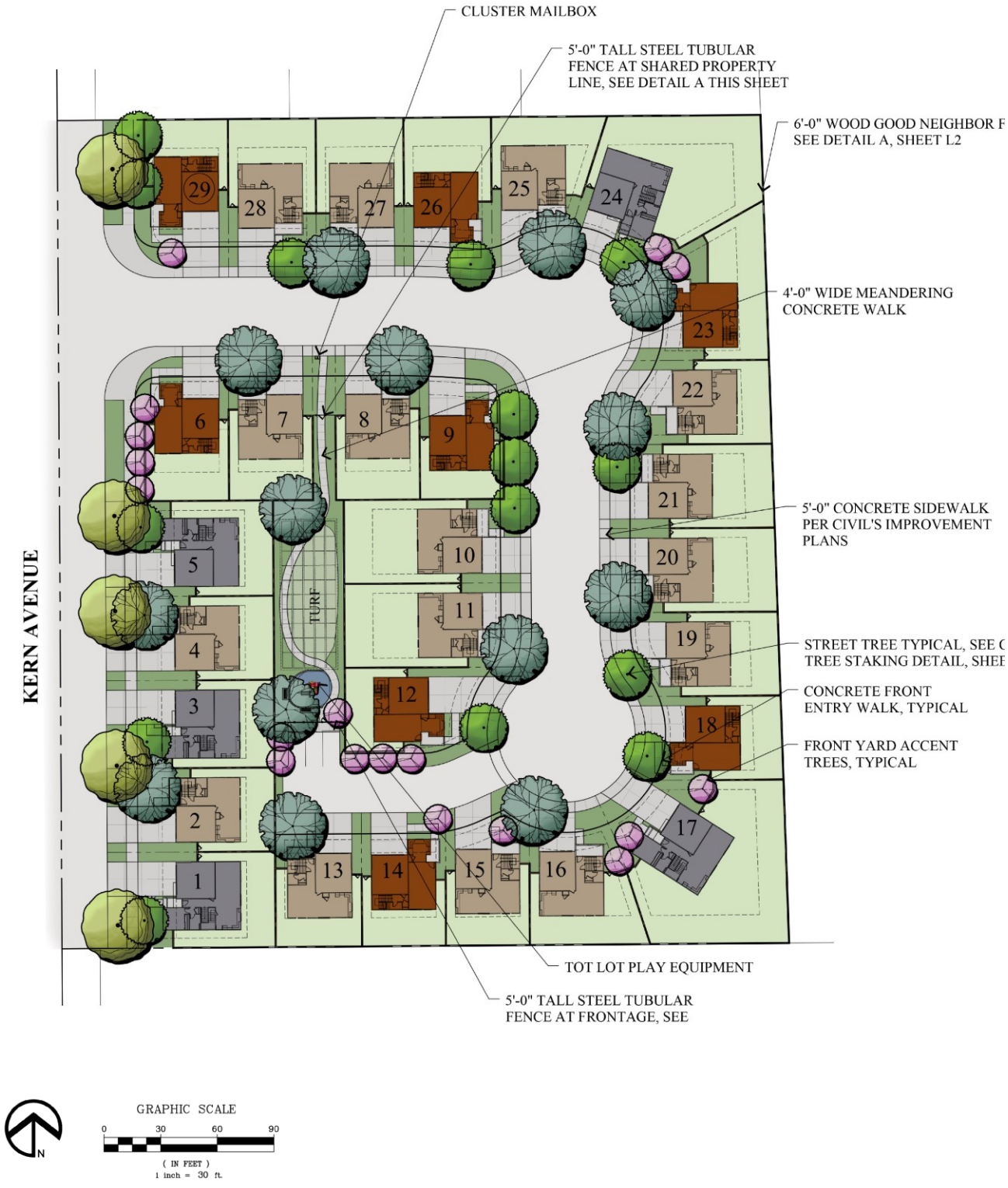

Figure 5 Conceptual Phasing Plan

Note: The proposed Model Homes are marked with an **"M".** The related model home parking, that will be removed during the third and final phase, is marked with a **"P".**

Figure 6 Typical Building Front Elevations

PLAN 2A - SPANISH PLAN 3B - FARMHOUSE

PLAN 1C - TRADITIONAL PLAN 3A - SPANISH

B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following compares 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.

	Significant Impacts from the Final EIR for 2040 General Plan	**Additional Site Specific Significant Impacts from Project**
Aesthetics	☐	☐
Agriculture and Forestry Resources	☒	☐
Air Quality	☒	☐
Biological Resources	☐	☐
Cultural and Tribal Resources	☐	☐
Energy	☐	☐
Geology and Soils	☐	☐
Greenhouse Gas Emissions	☒	☐
Hazards, Hazardous Materials, and Wildfires	☐	☐
Stormwater, Flooding, and Groundwater	☐	☐
Land Use and Planning	☐	☐
Mineral Resources	☐	☐
Noise and Vibration	☐	☐
Population and Housing	☐	☐
Public Services	☐	☐
Recreation	☐	☐
Transportation and Mobility	☒	☐
Utilities/Service Systems	☐	☐
Additional CEQA Topics	☐	☐

C. 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.

☐ 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 (1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (2) 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.

Miguel Contreras 3/30/21

Name and Title Date

D. EVALUATION OF ENVIRONMENTAL IMPACTS

The evaluation of the potential impacts of the proposed project is contained in the following series of checklists and accompanying narratives. The following notes apply to this section.

Notes:

1. "Summary of FEIR Conclusions" describes the results of the analysis contained in the Final Environmental Impact Report for the 2040 General Plan. This listing provides the baseline analysis that the tiered negative declaration relates to.

2. "Discussion of Project Specific Impacts" assesses the impacts of the Project in the context of the Final Environmental Impact Report and indicates whether additional impacts are expected to occur. This assessment uses three different criteria to compare the specific impacts of the project with the impacts related to the General Plan.

    - "Result in a New Significant Impact", means that the specific impact of the project result is a new significant unmitigable impact to the environment beyond the impacts identified in the Final Environmental Impact Reports.

    - "Have an Equal or Less Impact to the Impacts in FEIR for the General Plan", means that the Project will result in a specific impact to the environment beyond the impacts identified in the Final Environmental Impact Report and will require mitigation.

    - "Equal or Less Impact", means that the impacts of the Project are consistent with the impacts outlined in the Final Environmental Impact Reports and that no additional analysis is required.

3. "Standard Requirements Applicable to the Project", when indicated, standard permits, practices and requirements that will mitigate or address specific project effects are identified.

4. "Project Specific Standard Mitigating Requirements", identifies standard code or program requirements that mitigate or reduce potential impacts. These standardized requirements are applied to all projects or activities whether discretionary or ministerial.

5. "Project Specific Mitigation Measures", identifies additional project specific impacts or implement the requirements of the General Plan. The numbering of the mitigation measures in this tiered document are additive to the mitigation measures in the Final EIR. In other words, if there are two mitigation measures in the adopted mitigation monitoring program, an additional project mitigation measure would be identified as mitigation measure #3.

6. “Comments”, provides additional information regarding the impact. For impacts not discussed in the Environmental Impact Report for the General Plan, refer to Item 7 below.

7 "Conclusion" summarizes the analysis of the Project in the context of the Final Environmental Impact Report and any supplemental project-specific studies that may have

been prepared and any project specific mitigation measures. All answers are taken into account, including both on-site and off-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

8 When an impact was not discussed in the Final Environmental Impact Report for the General Plan an analysis has been provided to assess the impacts of the Project. The impact descriptions are as follows:

- “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.
- "Less-Than-Significant Impact with Mitigation Measures Incorporated” applies where the incorporation of mitigation measures reduces an effect from “Potentially Significant Impact” to a “Less-Than-Significant Impact.” The mitigation measures are described, along with a brief explanation of how they reduce the effect to a less-than-significant level.
- "Less-Than-Significant Impact” applies where the project will have some level of non-significant impact or change on the environment.
- “No Impact” answer indicates that the project would have no impact or effect. A “No Impact” answer is 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).

1. AESTHETICS

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Aesthics. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Affect Panoramic Views of Scenic Hillsides and Open Space.	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
b. Affect the Scenic Character in the Hecker Pass Specific Plan Area.	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Affect Scenic Resources Viewed from Hecker Pass Highway, Santa Teresa Boulevard, or U.S. Highway 101.	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
d. Visually Affect Community Gateways.	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
e. Lighting from New Development May Affect Day or Nighttime Views.	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
f. Visual Effects of Walls and/or Fences Over Seven Feet Tall.	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Affect Panoramic Views of Scenic Hillsides and Open Space?	☐	☐	☒
b. Affect the Scenic Character in the Hecker Pass Specific Plan Area?	☐	☐	☒
c. Affect Scenic Resources Viewed from Hecker Pass Highway, Santa Teresa Boulevard, or U.S. Highway 101?	☐	☐	☒
d. Visually Affect Community Gateways?	☐	☐	☒
e. Lighting from New Development May Affect Day or Nighttime Views?	☐	☐	☒
f. Visual Effects of Walls and/or Fences Over Seven Feet Tall?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policy:

LU 8.13 Limit Light Pollution Encourage measures to limit light pollution from outdoor sources, and direct outdoor lighting downward and away from sensitive receptors.

PFS 8.11 Light Pollution and Glare. Require that light sources and fixtures be selected, designed, and located to minimize light pollution and glare.

Comments:

a. **Affect Panoramic Views – Equal or Less Impact.** The project is not located in or adjacent to a scenic hillside or open space area. The site is located on the valley floor within the Urban Growth Boundary, an area where urban development is anticipated. The Project involves the construction of typical two-story residential structures in an area containing primarily one- and two-story residential structures. Consequently, in the visual context of the Planning Area the Project will not stand out or be noticeably visible. As a result, no impacts to panoramic views beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Affect Scenic Character in the Hecker Pass Area – Equal or Less Impact.** The project is not located in or adjacent to the area of the Hecker Pass Specific Plan. In addition, the project is not visible from the area of the Hecker Pass Specific Plan. As a result, no impacts to the scenic character in and around the Hecker Pass area would occur.

c. **Affect Scenic Resources Viewed from Hecker Pass Highway, Santa Teresa Boulevard, or U.S. Highway 101 - Equal or Less Impact.** The Project is not located at or visible from the Hecker Pass Highway, Santa Teresa Boulevard, or U.S. Highway 101. As a result, no impacts to scenic resources as viewed from community gateways would occur.

d. **Affect a City Gateway – Equal or Less Impact.** The Project is not located at or visible from a community gateway. As a result, no impacts to the aesthetics of community gateways beyond those identified in the Final EIR for the 2040 General Plan would occur.

e. **Light and Glare – Equal or Less Impact.** The Project is located on the valley floor within the Urban Growth Boundary, an area where urban development is anticipated. The project would result in additional nighttime lighting as envisioned in the 2040 General Plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

f. **High Fences and Walls over Seven Feet in Height – Equal or Less Impact.** The Project plans indicate that fencing will 6 feet in height or less. As a result, no impacts will occur due to fences or walls exceeding 7 feet in height.

Project Specific Standard Mitigating Requirements

None.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on aesthetic resources. The Project would not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the 2040 General Plan.

2. AGRICULTURE AND FORESTRY RESOURCES

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Agricultural Resources. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Convert prime farmland or farmland of statewide importance to an urban use?	Significant and Unavoidable even with the Goals, Policies, and Actions contained in the 2040 General Plan. A Statement of Overriding Considerations was adopted for this impact.
b. Conflict with a Williamson Act contract?	No Impact.
c. Other Changes that Could Result in Conversion of Farmland to Non-Agricultural Use?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Convert prime farmland or farmland of statewide importance to an urban use?	☐	☐	☒
b. Conflict with a Williamson Act contract?	☐	☐	☒
c. Other Changes that Could Result in Conversion of Farmland to Non-Agricultural Use?	☐	☐	☒
d. Conflict with existing zoning for, or cause rezoning of, forest land (Public Resources Code section 12220(g)), timberland (Public Resources Code section 4526), or timberland zoned Timberland Production (Government Code section 51104(g))?	☐	☐	☒
e. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☒
f. Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of forest land to non-forest use?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "Memorandum on Land Evaluation and Site Assessment Model Results" prepared by First Carbon Solutions, dated March 25, 2020.

Standard Requirements Applicable to the Project:

The Project is located in an area identified for future urban development. As implemented by the Zoning Code, the project location is a standard of the General Plan since it encourages . new residential development to locate within the existing Urban Service Area (Policy LU 1.2 Residential Growth).

Comments:

a. **Convert Prime Agricultural Lands – Equal or Less Impact.** The site is located within the current Urban Service Area and the Urban Growth Boundary in an area where urban development is anticipated. In addition, an evaluation of the indicated that the conversion of the site to urban uses would not significantly affect agricultural resources. As a result, no impacts to prime agricultural lands beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Conflict with a Williamson Act Contract – Equal or Less Impact.** The project site is not affected a Williamson Act contract and is located within the Urban Growth Boundary where urban development is anticipated. As a result, no conflicts with a Williamson Act contract beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Result in Other Changes that Could Result in Conversion of Farmland to Non-Agricultural Use – Equal or Less Impact.** The Project is located within the Urban Growth Boundary in an area where urban development is planned for and anticipated. As a result, no impacts to agricultural lands beyond those identified in the Final EIR for the 2040 General Plan would occur.

d - f. **Impacts to Timberlands:** The Final Environmental Impact Report for the 2040 General Plan did not evaluate the impacts of the General Plan to forest or timber lands. This discussion augments the analysis contained in the FEIR.

No Impact. The Project is not located in an area used or zoned for forest product or timber production. The site is currently covered by ruderal non-native grass lands. As a result, no impacts would occur.

Project Specific Standard Mitigating Requirements

None.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did identify significant impacts due to the conversation of agricultural lands within the Planning Area. However, the project site is located within the City Limits in an area planned for non-agricultural use. As a result, the Project would not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the 2040 General Plan which included a Statement of Overriding Considerations. In addition, as discussed above, no impacts to forestry resources will occur as a result of this Project.

3. AIR QUALITY

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Air Quality. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Conflict with the Bay Area Air Quality Management District (BAAQMD) Clean Air Plan?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan and with the addition of expanded General Plan Policies to the Natural Resource Conservation Element. Mitigation Measure AQ-1 added General Plan Policy NCR 3.15 *Reduce Construction Emissions,* to require the use of low emission construction equipment; and Mitigation Measure NCR 3.16 *Implement Dust-Control Measure*s, to require BAAQMD dust control for all projects.
b. Increase in Operational Criteria Air Pollutant Emissions Resulting from an Increase in Vehicle Miles Traveled Will Degrade Air Quality?	Significant and Unavoidable even with the Goals, Policies, and Actions contained in the 2040 General Plan. A Statement of Overriding Considerations was adopted for this impact.
c. Adverse Effects to Sensitive Receptors from Toxic Air Contaminants?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan, and with the addition of expanded General Plan Policies to the Natural Resource Conservation Element. Mitigation Measures AQ-3, AQ-4 and AQ-5 which added the following policies to the General Plan: NCR 3.17 *Sensitive Receptors within 500 feet of U.S. Highway 101*, NCR 3.18 *Sensitive Receptors within 500 feet of Existing Point Sources or Existing Heavy Industrial Designated Areas*, and NCR 3-19 *New Industrial Uses within 500 feet of Sensitive Receptors.*
d. Adverse Effects from Odors?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Conflict with the Bay Area Air Quality Management District Clean Air Plan?	☐	☐	☒
b. Increase in Operational Criteria Air Pollutant Emissions Resulting from an Increase in Vehicle Miles Traveled Will Degrade Air Quality?	☐	☐	☒

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
c. Adverse Effects to Sensitive Receptors from Toxic Air Contaminants?	☐	☐	☒
d. Adverse Effects from Odors?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "The Cottages at Kern - Construction Community Risk Assessment" prepared by Illingworth and Rodkin, dated February 10, 2021.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policies:

NCR 3.15 Reduce Construction Emissions. Require the use of low emissions construction equipment for public and private projects, consistent with the air district 2017 Clean Air Plan. Where construction-related emissions would exceed the applicable Thresholds of Significance, the City will consider, on a case-by-case basis, implementing Additional Construction Mitigation Measures (Table 8-3 in BAAQMD's CEQA Guidelines).

This requirement will be implemented through standard requirements Number 1.

NCR 3.16 Implement Dust-Control Measures. Require the implementation of the air district's dust control measures during construction of individual projects, consistent with the air district 2017 Clean Air Plan.

This requirement will be implemented through the standard requirements Number 2.

Comments:

a. **Conflict with the BAAQMD Clean Air Plan – Equal or Less Impact.** The 2040 General Plan contains policies and implementation programs which support the local implementation of the Clean Air Plan. The project does not exceed any of the potential significance thresholds established by the Bay Area Air Quality Management District (BAAQMD) that could mandate a full project specific air quality analysis. The lowest BAAQMD analysis threshold for single family residential products is 56 residential units (for operational impacts). Since the project consists of only 29 units, the proposed project would not result in an impact different than the potential effects described in the Final EIR. As a result, no conflicts with a BAAQMD Clean Air Plan beyond those identified in the Final EIR for the 2040 General Plan, would occur.

b. **Increase Criteria Pollutants – Equal or Less Impact.** The Project involves the construction of 29 single family dwelling units. According to BAAQMD's screening threshold for criteria pollutants from a single family residential project is 325 dwelling units. Because the Project is much smaller and as well as being consistent with the development density/intensity projected by the General Plan. The FEIR which included a statement of overriding considerations due to an increase in operational critical pollutants associated with Vehicle Miles Traveled (VMT). As such, the Project would not result in an impact different the potential effects described in the Final EIR. Development and business activities

consistent with the General Plan would result in a significant increase in criteria pollutants during the time-span of the 2040 General Plan. As a result, no impacts, beyond those identified in the Final EIR for the 2040 General Plan, would occur.

c. **Impact Sensitive Receptors – Equal or Less Impact.** The proposed project will result in project specific impacts related to construction that are similar to the effects described in the Final EIR.

Impacts related to increased community risk can occur either by introducing new sensitive receptors, such as residential uses, in proximity to existing sources of Toxic Air Contaminants (TACs) or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. Temporary project construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors (i.e. residences, schools, playgrounds, childcare centers, retirement homes, hospitals, and medical clinics). Since the project is a residential project in a residential area, the primary community health risks are associated with project construction on adjacent existing residents.

Based on modeling of health risk, the combination of TAC exposures from the project and nearby existing sources of TACs was evaluated. For cumulative community risk impacts, the BAAQMD CEQA Guidelines recommend that lead agencies consider sources of TAC emissions located within 1,000 feet of the residential Most Effected Individual (MEI). The MEI is the person (receptor) that would have the highest potential TAC exposure caused by the project. For this study, the most effected individual was determined to be an infant located in the residence at 9190 Kern Avenue. As shown in Table 1 below, the cumulative cancer risk, annual PM2.5 concentration, and related hazard index associated with project construction.

Table 1 - Combined Community TAC Sources, Most Effected Individual

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction:	Unmitigated	28.7	0.16	0.02
	Mitigated *	**2.1**	**0.04**	**<0.01**
BAAQMD Single Source Threshold		*10.0*	*0.3*	*1.0*
Exceeds Threshold with Mitigation?		***No***	***No***	***No***
Nearby Cumulative Source				
Mantelli Drive (ADT 10,800)		0.1	0.01	<0.01
Combined Cumulative & Project Sources				
Total Combined Sources	Unmitigated	28.8	0.17	<0.03
	Mitigated *	**2.2**	**0.05**	**<0.02**
BAAQMD Cumulative Source Threshold		*100.0*	*0.8*	*10.0*
Exceeds Threshold with Mitigation?		***No***	***No***	***No***

* Mitigated through Standard Requirements 1 and 2.

As shown in Table 1, the cumulative cancer risk, annual PM2.5 concentration, and hazard index associated with project construction do not exceed the established significance thresholds. The impact assessment identified that the requirements contained in Standard

Requirements 1 and 2 will reduce PM2.5 emissions from project construction and mitigate the potential effects from project construction. These measures, combined with the City's standard conditions of approval, the project would have a less-than-significant impact with respect to community risk caused by construction activities. As a result, no impacts beyond those identified in the Final Environmental Impact Report are anticipated.

d. **Create Objectionable Odors – Equal or Less Impact**. The project could result in localized odors during project construction (e.g. diesel exhaust, glues, and coatings) and during when the occupancy (e.g. cooking). These emissions might be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site by resulting in confirmed odor complaints. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

The following standard requirements implemented through the conditions of project approval will reduce potential air quality impacts to a less than significant level.

1. **Use construction equipment that has low diesel particulate matter exhaust emissions:**

   During any construction period the applicant shall prepare a plan to reduce emissions such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction. The plan shall be approved prior to the issuance of the first construction-related permit. The following feasible measures to achieve a 66 percent reduction in particulate matter exhaust (in comparison to the emissions from uncontrolled equipment) could involve the following:

   - 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 (PM_{10} and $PM_{2.5}$).
   - The use of construction equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control.
   - The use of electrical or non-diesel fueled equipment.

2. **Include basic 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 required for 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. Clear signage, that provides regulations for idling times, 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.

Project Specific Mitigation Measures:

None Required.

Conclusion:

The general air quality impacts of the project are included in the anticipated future development from the 2040 General Plan. Project specific impacts are addressed through the implementation of two standards requirements. These mitigation measures will ensure that temporary project construction impacts will be reduced to Less Than Significant levels. As a result, the Project's air quality impacts would not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the 2040 General Plan, which included a Statement of Overriding Considerations.

4. BIOLOGICAL RESOURCES

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Biologic Resources. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Adverse Effect on Special-Status Plant and Wildlife Species and Protected Nesting Birds?	Less than Significant with additional mitigation included in the Final EIR. This additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measure BIO-1 modified the proposed language for General Plan Policy *NCR 1.7 - Rare, Threatened, and Endangered Species*, to further reduce any impacts to these biologic resources.
b. Adverse Effect on Sensitive Natural Communities?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measures BIO-1 and BIO-2 also reduce any impacts.
c. Adverse Effect on Jurisdictional Wetlands and Waterways?	Less than Significant with additional mitigation included in the Final EIR. This additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measure BIO-2 added a new policy to the 2040 General Plan. *Policy NCR 1.13 - Assess Potential Wetland Impacts,* requires that applicants with potential jurisdictional wetlands or waterways retain a qualified biologist/wetland regulatory specialist to conduct a site investigation and assess the potential impact.
d. Adverse Effect on Wildlife Movement?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
e. Adverse Effect on Regulated Trees?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
f. No Conflict with Habitat Conservation Plan?	No Impact.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Adverse Effect on Special-Status Plant and Wildlife Species and Protected Nesting Birds?	☐	☐	☒
b. Adverse Effect on Sensitive Natural Communities?	☐	☐	☒

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
c. Adverse Effect on Jurisdictional Wetlands and Waterways?	☐	☐	☒
d. Adverse Effect on Wildlife Movement?	☐	☐	☒
e. Adverse Effect on Regulated Trees?	☐	☐	☒
f. Conflict with Habitat Conservation Plan?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "Biological Resource Assessment for Kern and St. Clar Project" prepared by Coast Ridge Ecology, dated February 10, 2021.
- "Kern and St Clar Project, Santa Clara Valley Habitat Plan, Application for Private Project, Supplemental Attachment" prepared by HT Harvey Ecological Consultants, September 3, 2020.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policies related to biologic resources.

NCR 1.1 Habitat Plan Compliance. For all covered activities throughout the city, comply fully with permit conditions of the Santa Clara Valley Habitat Plan. This will protect natural resources by minimizing impacts on sensitive natural communities and 18 covered species, facilitating wildlife movement, and establishing stream setbacks and buffers. Associated permit fees will be used for reserve system preservation, habitat enhancement and restoration, and adaptive management and monitoring.

Habitat Plan compliance is addressed under impact "f"" below and incorporated into the standard requirements.

NCR 1.7 Special Status. Species Special-status species are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW), or as Rare Plant Rank 1B or 2B species by the California Native Plant Society (CNPS). This designation also includes CDFW Species of Special Concern and Fully Protected Species. For special-status species that are not among the 18 covered species in the Habitat Plan, minimize future development in areas that support such species. Conduct focused surveys per applicable regulatory agency protocols as appropriate to determine if such species occur on a given project site, as determined necessary by a qualified biologist. If development of occupied habitat must occur, species impacts shall be avoided or minimized, and if required by a regulatory agency or the CEQA process, loss of wildlife habitat or individual plants should be fully compensated on the site. If off-site mitigation is necessary, it should occur within the Gilroy Planning Area whenever possible with a priority given to existing habitat mitigation banks. Habitat mitigation shall be accompanied by a long-term management plan and monitoring program prepared by a qualified biologist and include provisions for protection of mitigation lands in perpetuity through the establishment of easements and adequate funding for maintenance and monitoring.

This policy is incorporated into the standard requirements.

NCR 1.8 Native Nesting Bird Protection. Protect native nesting birds, which are protected by the Federal Migratory Bird Treaty Act and the California Fish and Game Code.

This policy is incorporated into the standard requirements.

NCR 1.13 Assess Potential Wetland Impacts. Applicants of projects on sites where potential jurisdictional wetlands or waterways are present shall retain a qualified biologist/wetland regulatory specialist to conduct a site investigation and assess whether wetland or waterway features are jurisdictional with regard to the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), Santa Clara Valley Habitat Plan, and/or California Department of Fish and Wildlife (CDFW). This investigation will include assessing potential impacts to wetland and riparian habitats and determining whether any stream buffers/riparian setbacks are required by the Santa Clara Valley Habitat Plan. If a feature is found to be jurisdictional or potentially jurisdictional, the applicant shall comply with the appropriate permitting process with each agency claiming jurisdiction prior to disturbance of the feature, and a qualified biologist/wetland regulatory specialist shall conduct a detailed wetland delineation if necessary.

This policy is incorporated into the previously identified special studies and the standard requirements.

Comments:

a. **Adverse Effect on Special-Status Plant and Wildlife Species and Protected Nesting Birds – Equal or Less Impact.** The Final Environmental Impact Report for the 2040 General Plan assessed the generalize potential for impacts to special status species. A project specific assessment was conducted of the site. The assessment identified a number of common species on and around the site including: Anna's hummingbird, Turkey vulture, Rock pigeon, American crow, Brewer's blackbird, House finch, House sparrow, Vesper sparrow, Ruby-crowned kinglet, Black phoebe, Yellow-rumped warbler, Eurasian collared-dove, Western meadowlark, Mule deer (from scat), Botta's pocket gopher (from burrows), and the Sierran treefrog. No special status species were identified. However, because a number of sensitive species are known to existing in the Planning Area, there is the potential for an impact to several sensitive species when project construction occurs. These potential impacts are addressed by the standard requirements listed below. With the implementation of the standard requirements and the provisions of the Santa Clara Valley Habitat Plan discussed below, no new or more severe impacts to special status species beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Adverse Effect on Sensitive Natural Communities – Equal or Less Impact.** The project site is currently undeveloped and is partially surrounded by urban development. According to the Biologic Resource Assessment, other than the seasonal wetland discussed under discussion 4.c. below, there are no sensitive natural communities on the project site. As a result, no impacts to sensitive natural communities beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Adverse Effect on Jurisdictional Wetlands and Waterways – Equal or Less Impact.** The project site contains a seasonal wetland in a shallow swale which extends eastward from Kern Avenue across the site. The swale is approximately three feet wide and one foot deep along most of its length. There are no ponds or perennial wetlands on, or adjacent to the site. The western end of the swale is a twelve-inch culvert with transports road runoff. The seasonal wetland is dominated by Italian rye grass (*Festuca perennis*) and

Mediterranean barley (*Hordeum marinum*). Both species are found in both wetland and non-wetland locations. Other plant species in the swale include common vetch (*Vicia sativa*), wild lettuce (*Lactuca serriola*), and wild chicory (*Cichorium intybys*). The area of seasonal wetland is approximately 0.044 acres. Project construction will impact all of this seasonal wetland. The impact will be addressed through the implementation of Standard Requirement 6.

d. **Adverse Effect on Wildlife Movement – Equal or Less Impact.** The project site is currently undeveloped and is substantially surrounded by urban development. The project area is unlikely to provide a movement corridor for terrestrial wildlife due to the surrounding residential development and the lack of wildlife sign observed during the site survey. While the proposed development project would create a barrier to wildlife movement, the lack of suitable breeding, foraging, or other habitat in the project area suggests this would have a generally low impact on local species. As a result, no impacts to special status species beyond those identified in the Final EIR for the 2040 General Plan would occur.

e. **Conflict with Local Ordinances – Equal or Less Impact.** The Project will not conflict with any local ordinances affecting biologic resources, including significant trees. There are no significant trees on the project site. As a result, no impacts to special status species beyond those identified in the Final EIR for the 2040 General Plan would occur.

f. **Conflict with Habitat Conservation Plan – Equal or Less Impact.** A habitat conservation plan (HCP) extends a federally granted endangered species permit (i.e. take authorization) to all projects and activities it covers. The HCP process recognizes the impact of land use activities and establishes a program to provide for a net benefit to specific species. The project site is located within the boundary of the Santa Clara Valley Habitat Plan (SCVHP). The site is less than two acres in size and has a land cover designation of Urban-Suburban and is not known to contain habitat for any of the Plan species. The SCVHP meets the requirements federal Endangered Species Act and enables local agencies to allow projects and activities to occur in endangered species' habitats. In exchange, those projects and activities must incorporate HCP-prescribed measures to avoid, minimize, or compensate for adverse effects on natural communities and endangered species. A key component of the of the SCVHP in urbanized/Suburban environs is the payment of required impact fees. The Project will be required to comply with the provisions of the Habitat Plan and identified as standard requirements.

Project Specific Standard Mitigating Requirements

The following standard requirements will reduce potential biologic resource impacts to a less than significant level and implement the Santa Clara Valley Habitat Plan.

3. **Payment of SCVHP Impact Fees**

   Prior to the issuance of a grading permit, the Project shall pay the required HCP impact fees.

4. **Nesting Bird Protection**

   If Project related work is scheduled during the nesting season (February 1 and August 31), a qualified biologist will conduct two surveys for active bird nests. A preconstruction nesting bird survey shall be conducted. If active bird nests are detected, a suitable nest buffer should be installed (typically between 50 to 250 feet, depending on species) as recommended by the biologist. The buffer shall be clearly marked. If buffer establishment is not possible, work will cease in the area until young have fledged and the nest is no longer

active. The buffer will be maintained until the young have fledged and are foraging independently. If tree removal and grading activities occur outside of the nesting bird season, preconstruction surveys for nesting birds are not necessary.

5. **Special Status Species Protection**

Prior to the issuance of a grading permit, a pre-construction survey shall be conducted by a qualified biologist to confirm that the California red-legged frog, California tiger salamander and American badger are not on the project site. If any of these species are identified onsite or an area affected by construction, the requirements of USFWS and/or CDFW shall be implemented to minimize or avoid any impacts, including but not limited to the installation and monitoring of exclusionary fencing, an education training for all contractors working on site, and on-site monitoring by a qualified biologist or trained biological monitor.

6. **Wetland Permits**

Prior to the issuance of a grading permit, the applicant shall obtain the appropriate permits and clearances from Federal, State, and regional agencies for affects to the identified seasonal wetland. Evidence of permit issuance shall be provided to the Planning Division.

Project Specific Mitigation Measures:

None required.

Conclusion:

The general impacts to biologic resources are included in the anticipated future development from the 2040 General Plan. Project specific impacts are addressed through the implementation of the standard requirements identified above and will ensure that any project impacts will be Less Than Significant. As a result, the Project's impacts to biological resources would not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the 2040 General Plan.

5. CULTURAL AND TRIBAL RESOURCES

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Cutural and Tribal Resources. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Adverse Change in the Significance of a Historic Resource?	Less than Significant with additional mitigation included in the Final EIR. This additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measure CR-1 modifies Goal NCR 5, Policy NCR 5.5, NCR 5.10, and Implementation Program 7 to further reduce any impacts to cultural resources.
b. Adverse Change in the Significance of a Unique Archaeological Resource?	Less than Significant with additional mitigation included in the Final EIR. This additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measure CR-2 modifies Goal NCR 5, Policy NCR 5.2, NCR 5.5, and Implementation Program 7 to further reduce any impacts to cultural resources.
c. Disturb Native American Human Remains?	Less than Significant with additional mitigation included in the Final EIR. This additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measures CR-1 and CR-2 to further reduce any impacts to cultural resource.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Adverse Change in the Significance of a Historic Resource?	☐	☐	☒
b. Adverse Change in the Significance of a Unique Archaeological Resource?	☐	☐	☒
c. Disturb Native American Human Remains?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "Section 106 Cultural Resources Assessment - Kern Avenue Residential Project, City of Gilroy, Santa Clara County, California", prepared by FirstCarbon Solutions, dated February 24, 2021. This report contains confidential information and is not available for public review.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policies:

NCR 5.2 Historic and Pre-historic Archaeological Resources and CEQA. Discretionary projects subject to the California Environmental Quality Act (CEQA) which include disturbance of the existing ground surface of the project site will require an archaeological survey and records search if the project site is located in a moderate to high archaeological sensitivity zone as identified on Figure 3.5-1 of the General Plan EIR, or if other evidence suggests the project site to be archaeologically sensitive. The site is located in an area of Low Archeologic Sensitivity.

This policy is incorporated into the previously identified special study.

NCR 5.3 Archaeological Resources Protection. Ensure that all projects involving ground-disturbing activities include procedures to protect archaeological resources if discovered during excavation. Projects shall follow CEQA and other applicable State laws. A cultural resource survey was conducted for the project site.

This policy is incorporated into the previously identified special study and the standard requirements.

Comments:

a. **Adverse Change in the Significance of a Historic Resource – Equal or Less Impact.** The project site vacant. The Cultural Resources Assessment also did not identify any historic resources on the project site. As a result, no impacts to historic resources, beyond those identified in the Final EIR for the General Plan, would occur.

b. **Adverse Change in the Significance of a Unique Archeologic Resource – Equal or Less Impact.** Tribal cultural resource representatives identified by the Native American Heritage Commission (NAHC) were identified and consulted with in compliance with the provisions of AB 52 (2013). None of the contacted Tribal organizations contacted requested a consultation on the Project. In addition, the Cultural Resources Assessment did not identify any historic resources on the project site but did recommend a mitigation measure, identified as Standard Requirement 7, to address the inadvertent discovery of archeologic or tribal resources consistent with the General Plan. The mitigation measure would reduce any impacts to a less than significant level. .As a result, no impacts to archeologic or tribal resources, beyond those identified in the Final EIR for the General Plan, would occur.

c. **Disturb Native American Human Remains – Equal or Less Impact.** The Cultural Resources Assessment did not identify any locations of human remains onsite but did recommend a mitigation measure, identified as Standard Requirement 8, to address the inadvertent discovery of human remains during project construction consistent with the General Plan. The mitigation measure would reduce any impacts to a less than significant level. As a result, no impacts beyond those identified in the Final EIR for the General Plan, would occur.

Project Specific Standard Mitigating Requirements

The following standard requirements will reduce potential cultural resource impacts to a less than significant level.

7. **Perform Construction Monitoring, Evaluate Uncovered Archaeological Features, and Mitigate Potential Disturbance for Cultural Resources**.

Prior to grading or excavation on the Project site, the applicant shall hire a qualified professional archaeologist (i.e., one who meets the Secretary of the Interior's professional qualifications for archaeology or one under the supervision of such a professional) to monitor all ground disturbing activities, to the extent determined necessary by the archaeologist. In the event that any prehistoric or historic-period subsurface archaeological features or deposits, including darkened soil (midden), that could conceal cultural deposits, animal bone, obsidian and/or mortar are discovered during earth-moving activities, all ground-disturbing activity within 50 feet of the discovery shall be halted immediately, and the Planning and Building Divisions shall be notified within 24 hours. City staff may consult with the project archeologist to assess the significance of the find. If Native American archaeological, ethnographic, or spiritual resources are discovered, all identification and treatment of the resources shall be conducted by a qualified archaeologist and Native American representatives identified by the Native American Heritage Commission. If tribal cultural representatives identified he NAHC fail to make a recommendation within 48 hours after being notified by the NAHC, the landowner or his/her authorized representative shall either rebury all Native American tribal cultural resources on the project site in a location not subject to further subsurface disturbance, or be handled in a manner consistent with the Secretary of the Interior's Standards for Archaeological Documentation and acceptable to the Planning and Building Divisions.

8. **Comply with State Regulations Regarding the Discovery of Human Remains at the Project Site.**

If human remains are discovered during any construction activities, all ground-disturbing activity within fifty feet of the remains shall be halted immediately, and the County Coroner shall be notified immediately (according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code) and the Planning and Building Divisions shall be notified and all ground-disturbing activities within 50 feet of where the remains were discovered shall cease. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within twenty-four hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98. If the NAHC is unable to identify a most likely descendent or the most likely descendent fails to make a recommendation within 48 hours after being notified by the NAHC; the landowner or his/her authorized representative shall rebury the Native American human remains and all associated grave goods with appropriate dignity on the project site in a location not subject to further subsurface disturbance: If the landowner or his authorized representative rejects the recommendations of the most likely descendant, the matter shall be referred to the City. The City may retain the services of a professional archeologist of the City's choosing to provided technical assistance. The Applicant shall reimburse the City for all costs. No construction activity on the site shall be allowed to continue until the disagreement is resolved. The Planning Division shall be responsible for approval of recommended mitigation as it deems appropriate, taking account of the provisions of state law, as set forth in State CEQA Guidelines Section 15064.5(e) and Public Resources Code Section 5097.98.

Project Specific Mitigation Measures:

None required.

Conclusion:

The general impacts cultural and tribal resources are included in the anticipated future development from the 2040 General Plan. Project specific impacts are addressed through the implementation of standard requirements listed above. These mitigation measures will ensure that any project impacts will be Less Than Significant. As a result, the Project's air quality impacts would not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the 2040 General Plan.

6. ENERGY CONSERVATION

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Energy. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Development Consistent with the Gilroy 2040 General Plan Would Increase Energy Use but Would not Result in Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
b. Development Consistent with the Gilroy 2040 General Plan Would Not Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency?	No Impact.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Development Consistent with the Gilroy 2040 General Plan Would Increase Energy Use but Would not Result in Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources?	☐	☐	☒
b. Development Consistent with the Gilroy 2040 General Plan Would Not Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policies:

LU 8.12 Outdoor Lighting Energy. Efficiency Select outdoor lighting fixtures to provide maximum energy efficiency as well as effective lighting.

PFS 8.4 Energy Conservation. Reduce energy consumption by encouraging the use of green building technologies, supporting the use of alternative energy sources, and disseminating public information regarding energy conservation techniques.

PFS 8.10 Outdoor Lighting and Energy Efficiency. Select outdoor lamps and light fixtures that maximize energy efficiency, provide effective lighting, and are compatible with the neighborhood context.

Comments:

a. **Development Consistent with the Gilroy 2040 General Plan Would Increase Energy Use but Would not Result in Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources – Equal or Less Impact.** The Project is consistent with the General Plan and is development envisioned by the General Plan. As a result, no energy impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Development Consistent with the Gilroy 2040 General Plan Would Not Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency – Equal or Less Impact.** The Project is consistent with the General Plan and does not involve components that would conflict or obstruct the implementation of any plan to achieve renewable energy or energy efficiency goals. As a result, no energy impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

9. During the approval and construction phases, the Project will be required to comply with the Requirements contained in Title 24 Energy Efficiency, contained in Chapter 6 of the Gilroy Municipal Code.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

7. GEOLOGY AND SOILS

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Geology and Soils. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Expose People or Structures to Loss or Injury Involving Fault Ruptures?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
b. Expose People or Structures to Loss or Injury Involving Seismic Ground Shaking?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Expose People or Structures to Loss or Injury Involving Seismically-Induced Ground Failure?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
d. Expose People or Structures to or Injury Involving Seismically-Induced Landslides?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
e. Result in Soil Erosion or Loss of Topsoil?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
f. Development Located on an Unstable Geologic Unit or Soil and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
g. Development Located on Expansive Soil, Creating Risks to Life or Property?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Expose People or Structures to Loss or Injury Involving Fault Ruptures?	☐	☐	☒
b. Expose People or Structures to Loss or Injury Involving Seismic Ground Shaking?	☐	☐	☒
c. Expose People or Structures to Loss or Injury Involving Seismically-Induced Ground Failure?	☐	☐	☒
d. Expose People or Structures to or Injury Involving Seismically-Induced Landslides?	☐	☐	☒
e. Result in Soil Erosion or Loss of Topsoil?	☐	☐	☒

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
f. Development Located on an Unstable Geologic Unit or Soil and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse?	☐	☐	☒
g. Development Located on Expansive Soil, Creating Risks to Life or Property?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "*Geotechnical Investigation on Proposed Residential Development at Kern Avenue*", prepared by Quantum Geotechnical, Inc, dated March 25, 2020.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policies:

PH 1.1 Location of Future Development. Allow development only in those areas where potential danger to the health, safety, and welfare of residents can be adequately mitigated to an acceptable level of risk. This applies to development in areas subject to flood damage, fire damage, or geological hazard due to their location and/or design.

PH 2.2 Site Investigation and Mitigation. Ensure proper soils and geologic site investigation and appropriate mitigation for development proposals in areas of unconsolidated fill, and areas subject to seasonal high groundwater tables or other potentially unstable soils.

This policy is incorporated into the previously identified special study.

PH 2.5 Geologic Hazards Reports. Require geologic hazards reports for all new development applications to assess potential geologic hazards and to determine if these hazards can be adequately mitigated.

This policy is incorporated into the previously identified special study.

PH 2.6 Erosion and Deposition Control. Require all new development proposals to include a site plan detailing appropriate methods of erosion and deposition control during site development and subsequent use.

This policy is implement through the standard requirements.

Comments:

a. **Expose People or Structures to Loss or Injury Involving Fault Ruptures – Equal or Less Impact.** The Project site is located within this seismically active region but is not located in any identified earthquake fault rupture zones. As a result, no impacts from surface fault ruptures, beyond those identified in the Final EIR for the General Plan would occur.

b. **Expose People or Structures to Loss or Injury Involving Seismic Ground Shaking - Equal or Less Impact**. The Project site is located within this seismically active region and has the potential to experience seismic ground shaking as described in the Final EIR. As a

result, no impacts from seismic ground shaking, beyond those identified in the Final EIR for the General Plan, would occur.

c. **Expose People or Structures to Loss or Injury Involving Seismically-Induced Ground Failure – Equal or Less-Impact.** The site is located within this seismically active region. However onsite soils are relatively stable lacking the characteristics associated with The Geotechnical Investigation did not identify subsurface soils that were prone ground failure. As a result, no impacts beyond those in the Final EIR for the General Plan would occur.

d. **Expose People or Structures to or Injury Involving Seismically-Induced Landslides – Equal or Less impact**. According to the Geotechnical Investigation, the site is not located in an area prone to seismically induced landslides. As a result, no impacts beyond those identified in the Final EIR for the General Plan would occur.

e. **Result in Soil Erosion or Loss of Topsoil – Equal or Less Impact**. The site is relatively level, except for the mounds of previously dumped grading spoil. Standard erosion control measures will reduce soil erosion from project construction. With this standard requirement it is unlikely to normally result in soil erosion or the loss of top soil. As a result, no impacts beyond those identified in the Final EIR for the General Plan would occur.

f. **Development Located on an Unstable Geologic Unit or Soil and Potentially Result in On- or Off-Site Landslide, Lateral Spreading, Subsidence, Liquefaction, or Collapse – Equal or Less Impact**. According to the Geotechnical Investigation, the site is not located in an area containing an unstable geologic units. As a result, no impacts beyond those identified in the Final EIR for the General Plan would occur.

Project Specific Standard Mitigating Requirements

The following standard requirements will reduce potential geotechnical and soil-related impacts to a less than significant level.

10. **Implement Erosion Control Measures**

    Prior to the issuance of a grading permit, the grading plan shall incorporate erosion control measures to prevent the eroded material from being transported off-site.

11. **Final Geotechnical Investigation**

    Prior to the issuance of a building permit, submittal of a final geotechnical investigation will be required. The recommendations contained in the final investigation will minimize the impacts from geologic and soil hazards.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

8. GREENHOUSE GAS EMISSIONS

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Greenhouse Gas Emissions. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Generate a Volume of GHG Emissions in 2040 That May Have a Significant Impact on Climate Change?	Significant and Unavoidable even with the additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan and Mitigation Measures GHG-1 and GHG-2 to modify Policy NCR 3.14 and GHG-2 with the addition of Implementation Action CAP-37. A Statement of Overriding Considerations was adopted for this impact.
b. Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing GHG Emissions?	Significant and Unavoidable even with the additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan and Mitigation Measures GHG-1 and GHG-2 to modify Policy NCR 3.14 and GHG-2 with the addition of Implementation Action CAP-37. A Statement of Overriding Considerations was adopted for this impact.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Generate a Volume of GHG Emissions in 2040 That May Have a Significant Impact on Climate Change?	☐	☐	☒
b. Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing GHG Emissions?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None (the Project is below the established screening thresholds).

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policy in addiiton to the policies identifed for air quality:

M 1.7 Reduce Vehicle Miles Traveled. Reduce vehicle miles traveled (VMT) and greenhouse gas emissions by developing a transportation network that makes it convenient to use transit, ride a bicycle, walk, or use other non-automobile modes of transportation.

Comments:

a. **Generate a Volume of GHG Emissions in 2040 That May Have a Significant Impact on Climate Change in Significant GHG Emissions – Equal or Less Impact**. The Project is consistent with the General Plan which recognized that significant impacts from greenhouse gas emissions will result in. A Statement of Overriding Considerations was adopted for this impact. In addition, as discussed under the Air Quality discussion, the project is smaller than BAAQMD's screening thresholds and no additional analysis was performed. As a result, no impacts beyond those identified in the Final EIR for the General Plan would occur.

b. **Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing GHG Emissions – Equal or Less Impact**. The Project is consistent with the General Plan which recognized that significant impacts from greenhouse gas emissions will result from the existing and proposed land uses and activities identified in the General Plan. A Statement of Overriding Considerations was adopted for this impact. In addition, as discussed under the Air Quality discussion, the project is smaller than BAAQMD's screening thresholds and no additional analysis was performed. As a result, no beyond those identified in the Final EIR for the General Plan would occur.

Project Specific Standard Mitigating Requirements

The Project includes the construction of pedestrian facilities along the project frontage.

Project Specific Mitigation Measures:

None Required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan which included a Statement of Overriding Considerations.

9. HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRES

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Hazards and Hazardous Materials. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Create a Hazard to the Public or Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
b. Create a Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste Within One-Quarter Mile of an Existing or Proposed School?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
d. Inclusion of a Site Which is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
e. The 2040 General Plan Would Not Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan?	No Impact.
f. Expose People and Structures to a Risk of Loss, Injury, or Death Involving Wildland Fires, Including Where Wildlands are Adjacent to Urbanized Areas or Where Residences are Intermixed with Wildlands?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Create a Hazard to the Public or Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials?	☐	☐	☒
b. Create a Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of	☐	☐	☒

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
Hazardous Materials into the Environment?			
c. Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste Within One-Quarter Mile of an Existing or Proposed School?	☐	☐	☒
d. Inclusion of a Site Which is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5?	☐	☐	☒
e. The 2040 General Plan Would Not Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan?	☐	☐	☒
f. Expose People and Structures to a Risk of Loss, Injury, or Death Involving Wildland Fires, Including Where Wildlands are Adjacent to Urbanized Areas or Where Residences are Intermixed with Wildlands?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policy:

PH 4.2 Development Review. Provide plan checks for new construction, remodels, tenant improvements, and demolitions to ensure compliance with applicable life safety and fire protection system requirements, including special requirements for fire safety in areas with wildfire risk.

This policy is implemented through the application review and approval process.

Comments:

a. **Create a Hazard to the Public or Environment Through the Routine Transport, Use, or Disposal of Hazardous Materials – Equal or Less Impact.** The project does not involve the use, transport, or disposal of hazardous materials, though some limited amounts of potentially hazardous materials could be involved in project construction. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Create a Hazard to the Public or the Environment Through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment – Equal or Less Impact.** The project would not involve any significant storage of hazardous materials on site or generate hazardous waste to cause release of detectable amounts of hazardous materials into the environment (beyond amounts typical of residential activities). This means that the project will not 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. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste Within One-Quarter Mile of an Existing or Proposed School – Equal or Less Impact.** The project will not result in the emission of hazardous emissions. As a result, no impacts to adopted evacuation emergency response or evacuation plans, beyond those identified in the Final EIR for the 2040 General Plan would occur.

d. **Inclusion of a Site Which is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5 - Equal or Less Impact.** The California Department of Toxic Substances Control (DTSC) maintains a hazardous waste and substances site list, also known as the "Cortese List." A government database search was performed in order to identify whether the project site or sites in the vicinity are listed as a Cortese or a hazardous materials site. Neither the project site nor the adjacent sites are included on the Cortese list. As a result, no impacts to adopted evacuation emergency response or evacuation plans, beyond those identified in the Final EIR for the 2040 General Plan would occur.

e. **The 2040 General Plan Would Not Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan – Equal or Less Impact.** The project will not alter or affect the existing road pattern and is not expected to impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As a result, no impacts to adopted evacuation emergency response or evacuation plans, beyond those identified in the Final EIR for the 2040 General Plan would occur.

f. **Expose People and Structures to a Risk of Loss, Injury, or Death Involving Wildland Fires, Including Where Wildlands are Adjacent to Urbanized Areas or Where Residences are Intermixed with Wildlands – Equal or Less Impact.** The Project is located within an largely urbanized area in the City of Gilroy. The closest High Fire Hazard area is west of Santa Teresa Boulevard approximately ¾ of a mile west of the site (according to the Fire Hazards Severity Zones maps published by the California Department of Forestry and Fire Protection). This issue is addressed in the 2040 General Plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

None.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

10. STORMWATER, FLOODING, AND GROUNDWATER

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Aesthics. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Diminished Water Quality from Storm Water Pollutants?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
b. Increased Storm Water Runoff?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Expose People to Flooding Risks by Placing Housing or Structures Within a 100-Year Flood Hazard Area?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
d. Expose People or Structures to Hazards from Flooding as a Result of Dam Failure?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
e. Deplete Groundwater Supplies?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
f. Interfere with Groundwater Recharge?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Diminished Water Quality from Storm Water Pollutants?	☐	☐	☒
b. Increased Storm Water Runoff?	☐	☐	☒
c. Expose People to Flooding Risks by Placing Housing or Structures Within a 100-Year Flood Hazard Area?	☐	☐	☒
d. Expose People or Structures to Hazards from Flooding as a Result of Dam Failure?	☐	☐	☒
e. Deplete Groundwater Supplies?	☐	☐	☒
f. Interfere with Groundwater Recharge?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "Preliminary Post-Construction Stormwater Control Plan for The Cottages at Kern" prepared by Ruggeri-Jensen-Azar, dated September 2020.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policies:

NCR 1.14 Maintain Pre-Project Stormwater Flows. Encourage project design for smaller projects in the areas of the unconfined Llagas sub-basin to maintain pre-project stormwater flows consistent with City stormwater standards that prohibit offsite discharge up to the 95th percentile storm event for Tier 3 projects, allow treat and release for Tier 2 projects, and allow a more passive, 'best practices' design to minimize runoff for Tier 1 projects.

This policy is incorporated into the previously identified special study.

NCR 4.4 Abandoned and Unused Wells. Require developers to identify and seal abandoned and unused wells within their developments in accordance with the City and Valley Water requirements.

This policy is implemented through the standard requirements.

PH 1.1 Location of Future Development. Allow development only in those areas where potential danger to the health, safety, and welfare of residents can be adequately mitigated to an acceptable level of risk. This applies to development in areas subject to flood damage, fire damage, or geological hazard due to their location and/or design.

This policy was addressed with the General Plan Land Use Plan.

PH 2.6 Erosion and Deposition Control. Require all new development proposals to include a site plan detailing appropriate methods of erosion and deposition control during site development and subsequent use.

This policy is implemented through the standard requirements.

PH 3.1 Development Restrictions in Flood Areas. Ensure all new development on publicly and privately owned land within flood prone, mudslide, or flood related erosion areas (as indicated by the Federal Emergency Management Agency in the flood hazards zones or in Ordinance no. 2017-01) incorporate uniform enforceable measures that reduce losses due to flood related hazards to an acceptable level of risk.

This policy was addressed with the General Plan Land Use Plan.

PH 3.6 Permeable Surfaces for Runoff Reduction and Absorption. Require new development to include landscaped areas for reducing runoff and increasing runoff absorption capacities and encourage the use of permeable paving materials.

This policy is incorporated into the previously identified special study.

Comments:

a. **Diminished Water Quality from Storm Water Pollutants - Equal or Less Impact.** The Project involves the development of a vacant, largely pervious site. Development of site will result in a change in the character of any stormwater runoff. This effect was evaluated in the environmental impact report for the general plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Increased Stormwater Runoff – Equal or Less Impact**. The Project involves the development of a vacant, largely pervious site. The increase in impervious area will

increase the amount of stormwater runoff. This effect was evaluated in the environmental impact report for the general plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Expose People to Flooding Risks by Placing Housing or Structures Within a 100-Year Flood Hazard Area – Equal or Less Impact**. According to the Flood Insurance Rate Map for this portion of Gilroy, the site and adjacent areas are not within the 100-Year floodway (i.e. areas having a one percent annual probability of inundation). As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

d. **Expose People or Structures to Hazards from Flooding as a Result of Dam Failure – Equal or Less Impact**. The project site is within identified dam inundation area for the Anderson Valley Dam. In the event of a catastrophic dam failure, flood waters would reach the site in about 10 hours. This effect was evaluated in the environmental impact report for the general plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

e. **Deplete Groundwater Resources - Equal or Less Impact**. The City of Gilroy relies on groundwater from the underlying Llagas Groundwater Basin. The Basin is managed to provide water for both agriculture and urban uses. The Project will result in the use of water for both residential and landscaping purposes. This water use by the Project is anticipated by the General Plan and in the management of the groundwater basin. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

f. **Interfere with Groundwater Recharge – Equal or Less Impact**. The project site is currently vacant and provides some increment of groundwater recharge. The project will be required to retain the design rainfall events which could result some potential recharge of groundwater. The impact on groundwater recharge within the Planning Area was addressed in the environmental impact report for the General Plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

The following standard requirements will reduce potential impacts to a less than significant level.

12. **Water Efficient Irrigation**

    Implementation of the requirements of Article XXXVIII. Landscaping, Water Efficiency, and Storm Water Retention and Treatment will reduce water use.

13. **Proper Closure of Abandoned Wells**.

    The Project will comply with the provisions of Santa Clara Valley Water District Ordinance No. 90-1 regulating the classification, construction and destruction of wells and other deep excavations; requiring the destruction of abandoned or unused wells; adopting water contamination hazard standards; and making violation a misdemeanor.

Project Specific Mitigation Measures:

None Required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

11. LAND USE AND PLANNING

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan, and the General Plan document itself evaluated Planning Area-wide impacts to land use and planning issues. However the analysis was not adequate to evaluate these topics on the scale of a small project.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Physically divide an established community?	☐	☒	☐
b. Conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policy that are incorporated into the design of the Project:

LU 3.4 Compatible Lotting Pattern. For infill projects where there is an established pattern of lot sizes abutting a project site, new development should reflect the existing lotting pattern, particularly the lot width of parcels directly across an existing street.

This policy was addressed by the layout of the proposed project and the requirements of the Planned Unit Development combining district.

Comments:

The Final Environmental Impact Report for the 2040 General Plan did not evaluate these General Plan impacts. This discussion augments the analysis contained in the FEIR for the General Plan.

a. **Divide the Community – No Impact**. The Final Environmental Impact Report for the 2040 General Plan did not evaluate the specific impacts of this Project. The Project involves the development of two existing lots consistent that will not alter the existing or proposed road network or create a barrier that would isolate any portion of the Planning Area and is not in

a location where it could divide an established community. As a result, the Project will not physically divide an established community and no impacts are anticipated.

b. **Conflict with Local Plans – No Impact**. The Final Environmental Impact Report for the 2040 General Plan did not evaluate the compliance of the Project with the 2040 General Plan. The Project is consistent with the Land Use Plan, goals and policies contained in the 2040 General Plan (and its implementing provisions). As a result, no impacts will occur.

Project Specific Standard Mitigating Requirements

None.

Project Specific Mitigation Measures:

None Required.

Conclusion:

The Project will not result in an adverse environmental impact to Land Use and Planning issues since the project will not create a barrier to divide the community and is consistent with the General Plan. No impacts to these issues will occur.

12. MINERAL RESOURCES

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Mineral Resources. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Loss of Availability of a Known Mineral Resource of Value to the Region and Residents of the State or a Locally-Important Resource Recovery Site Identified in the General Plan?	No Impact.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Loss of Availability of a Known Mineral Resource of Value to the Region and Residents of the State or a Locally-Important Resource Recovery Site Identified in the General Plan?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

None.

Comments:

a. Loss of Availability of Known Mineral Resource – Equal or Less Impact. According to the Department of Mines and Geology the project site is located in an area designated as Mineral Resource Zone 1, locations where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. The significance threshold is a project in an area classified as MRZ-2. Because the site is not located in an area classified as MRZ-2, no impacts to known mineral resources are expected to occur. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

None.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

13. NOISE AND VIBRATION

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Noise and Vibration. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Increased Vehicular Traffic and Transportation and Infrastructure Improvements Would Result in Existing Sensitive Land Uses Being Exposed to Noise Levels in Excess of Noise Thresholds?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
b. Noise-Sensitive Land Uses Could be Exposed to New Stationary and Local Noise Sources?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Construction Noise Would Cause a Temporary or Periodic Increase in Noise Exposure Above Ambient Noise Levels?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
d. Demolition and Construction Activities Vibration Levels?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Increased Vehicular Traffic and Transportation and Infrastructure Improvements Would Result in Existing Sensitive Land Uses Being Exposed to Noise Levels in Excess of Noise Thresholds?	☐	☐	☒
b. Noise-Sensitive Land Uses Could be Exposed to New Stationary and Local Noise Sources?	☐	☐	☒
c. Construction Noise Would Cause a Temporary or Periodic Increase in Noise Exposure Above Ambient Noise Levels?	☐	☐	☒
d. Demolition and Construction Activities Vibration Levels?	☐	☐	☒
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 expose people residing or working in the project area to excessive noise levels	☐	☒	☐

Project Specific Technical Studies/Analyses:

- "*The Cottages at Kern Construction Noise and Vibration Assessment"*, prepared by Illingworth and Rodkin, dated February 10, 2021.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policies:

PH 6.10 Construction Noise. Require proposed development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on those uses, to the extent feasible.

This policy is implemented through the standard requirements.

PH 6.11 Construction and Maintenance Noise Limits. Limit the hours of construction and maintenance activities to the less sensitive hours of the day (7:00am to 7:00pm Monday through Friday and 9:00am to 7:00 pm on Saturdays). Construction hours that vary from these timeframes may be approved by the Building Official, in conformance with Article XVI. Hours of Construction of the Gilroy City Code.

This policy is implemented through the standard requirements.

PH 6.12 Vibration Impact Assessment. Require a vibration impact assessment for proposed development projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur.

This policy is addressed through the previously mentioned special study.

Comments:

a. **Increased Vehicular Traffic and Transportation and Infrastructure Improvements Levels in Excess of Standards – Equal or Less Impact.** The noise environment in this location is dominated by traffic noise along Kern Avenue, though some noise from other sources, such as Union Pacific Railroad tracks and US 101, located about 2/3 of a mile and a mile respectively from the site, is noticeable during periods of low ambient noise. The street frontage of the site is located in 60 – 65 dB contour line. The back portions of the site will have future roadway noise levels below 55 dB. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Noise-Impacts to Sensitive Land Uses – Equal or Less Impact**. The proposed residential land use is considered to be a sensitive land use for noise. The area noise environment is dominated by local traffic noise, most noticeably from traffic along Kern Avenue. The Project will be required to comply the City's adopted indoor noise requirements as required by the General Plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Construction Noise Would Cause Temporary or Periodic Increase in Ambient Noise – Equal or Less Impact**. Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities

occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time. Chapter 16 of the City of Gilroy Municipal Code limits the allowable construction hours. compliance with the City's General Plan and Municipal Code during construction activities. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

d. **Exposure to Excessive Vibration – Equal or Less Impact.** During Project construction activities, such as drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.), may generate noticeable vibration in the immediate vicinity. Vibration levels can vary depending on soil conditions, construction methods, and equipment used. This impact was identified in the environmental impact report for the General Plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

e. **Impacts Airfield Generated Noise:** The Final Environmental Impact Report for the 2040 General Plan did not evaluate the impacts of the General Plan to noise from airports or airfields. This discussion augments the analysis contained in the FEIR.

No Impact. The closest airfield is approximately 3.5 miles north northeast of the project site. The Project is also located outside of the Airport Influence Area and outside of any of the identified noise contours. As a result, no impacts are anticipated.

Project Specific Standard Mitigating Requirements

The following standard requirement will reduce potential impacts to a less than significant level.

14. **Compliance with Construction Noise Ordinance.**

During construction, the Project will be required to comply with the provisions of Chapter 16 of the Gilroy Municipal Code.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan. In addition, no airport-related noise impacts are expected to occur.

14. POPULATION AND HOUSING

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan, and the General Plan document itself, did evaluate Planning Area-wide impacts to both population and housing. However the analysis was not adequate to evaluate these topics on the scale of a small project.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☒	☐
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☒	☐
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☒	☐

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project is consistent with the provisions of the 2040 General Plan which lays out the blueprint for future housing, population, and employment. Consistency with the General Plan is the standard requirement for all development projects.

Comments:

The Final Environmental Impact Report for the 2040 General Plan did not evaluate these General Plan impacts. This discussion augments the analysis contained in the FEIR.

a. **Population Growth – No impact**. The Final Environmental Impact Report for the 2040 General Plan did not directly evaluate the potential population growth on the project site. The Project involves the construction and operation of 29 single lot family residences consistent with the Land Use Designation on the General Plan. Using the density range and typical per household from the General Plan, development of the site could contain a total population of between 83 and 207 persons, in a multi-family environmental. The proposed small lot single family residential project would have an estimated population of 95 persons. Because the anticipated population is within the range of populations envisioned by the General Plan, no impacts will occur.

b. **Displace Existing Housing Units – No Impact**. The Final Environmental Impact Report for the 2040 General Plan did not evaluate the potential impacts associated with the

displacement of exiting housing units. The Project involves a residential development on two vacant parcels that do not contain any existing residential units. As a result, no housing units will be displaced by the Project and no impacts are anticipated.

c. **Displace Existing People – No Impact**. The Final Environmental Impact Report for the 2040 General Plan did not evaluate the potential impacts of displacing onsite populations. The Project involves a residential development on two vacant, unoccupied parcels. As a result, no people will be displaced by the Project and no impacts are anticipated.

Project Specific Standard Mitigating Requirements

None.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

15. PUBLIC SERVICES

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Aesthics. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. No Requirement for Alteration or Construction of New Police Protection Facilities?	No Impact.
b. Requirement for Alteration or Construction of New or Modified Fire Service Facilities?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Requirement for Alteration or Construction of New or Modified School Facilities?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. No Requirement for Alteration or Construction of New Police Protection Facilities?	☐	☐	☒
b. Requirement for Alteration or Construction of New or Modified Fire Service Facilities?	☐	☐	☒
c. Requirement for Alteration or Construction of New or Modified School Facilities?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following applicable General Plan policy:

PFS 11.4 School Impact Fees. Continue to collect new development fees as established by the GUSD, in accordance with State law.

The policy is implemented through the standard requirements.

Comments:

a. **New Police Protection Facilities – Equal or Less Impact.** The project will result in an incremental increase for police services. However, these additional impacts are not expected to require new police facilities. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **New or Modified Fire Service Facilities – Equal or Less Impact.** The project will result in an incremental increase for fire protection services and may result in the need for additional or modified fire stations. However, these additional impacts are identified in the general plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **New or Modified School Facilities – Equal or Less Impact**. The Gilroy Unified School District (GUSD) provides K-12 education in the Planning Area. As part of the GUSD's development impact fee for the construction of school facilities, the District collects Level 1 Fees (as authorized by Government Code Section 65995) to construct new school facilities. The project will result in an incremental increase in the demand for educational services and facilities. However, these additional impacts are identified in the general plan. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

The following standard requirement will reduce potential impacts to a less than significant level.

15. **Payment of School Impact Fees**

    Prior to the issuance of a building permit, the project proponent shall provide evidence that the applicable school facility impact fees have been paid to the Gilroy Unified School District.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

16. RECREATION:

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Aesthics. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Requirement for Alteration or Construction of New Park and Recreational Facilities?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Requirement for Alteration or Construction of New Park and Recreational Facilities?	☐	☐	☒

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policy:

PR 1.14 Recreation Facilities in New Development. Encourage the provision of public and private recreation facilities in residential developments, especially publicly accessible, privately maintained facilities. Consider public accessibility and the establishment of sustainable funding for maintenance costs before accepting public recreation facility dedications.

This policy is implemented through the design of the project and the standard requirements.

Comments:

a. **Require the Alteration, Construction of New Park and Recreational Facilities – Equal or Less Impact.** The Project includes 29 single family residences and will result in a small increment of demand/need for additional park, recreation, and athletic facilities. The project includes private fenced backyards and a small on-site play area that will meet some of the demand for recreational and athletic amenities. In addition, the project will be required to pay the established in-lieu parkland dedication fee established by the City Council. As a result, no impacts to recreation beyond those identified in the Final EIR for the 2040 General Plan would occur.

Project Specific Standard Mitigating Requirements

16. **Payment of In-Lieu Parkland Dedication**

    Prior to the issuance of a building permit the project proponent shall pay the in-lieu parkland dedication fee.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

17. TRANSPORTATION AND MOBILITY

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Transportation and Mobility. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Increase in Vehicle Miles Traveled?	Less than Significant with additional mitigation included in the Final EIR. This additional mitigation is in addition to the Goals, Policies, and Actions contained in the 2040 General Plan. Mitigation Measure TRNS-1 added policy M 1.14 *Transportation Demand Management*, and General Plan Implementation Measures 11 and 12. However, even with this mitigation, the impact remained significant and unavoidable. A Statement of Overriding Considerations was adopted for this impact.
b. The Project Would Not Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, Including Transit, Roadways, Bicycle and Pedestrian Facilities?	No Impact.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Increase in Vehicle Miles Traveled?	☐	☐	☒
b. The Project Would Not Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, Including Transit, Roadways, Bicycle and Pedestrian Facilities?	☐	☐	☒
c. Increase road hazards due to a design features or incompatible uses?	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☒

Project Specific Technical Studies/Analyses:

- "Memorandum on 9130 & 9160 Kern Avenue Residential VMT Evaluation", prepared by Hexagon Transportation Consultants dated March 10, 2021.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policies:

LU 3.2 Connectivity. Encourage new residential development to incorporate design features that promote walking and connectivity between blocks.

This policy is implemented through the design of the.

M 1.6 Street Safety and Accessibility. Design streets and transportation facilities that are safe and accessible to people of all abilities, including those with limited mobility.

This policy is implemented through the design of the project.

M 1.10 Private Streets. Require private streets to function similar to public streets. Private streets shall include sidewalks, street trees, and promote connectivity.

This policy is implemented through the design of the project.

M 3.2 New Development. Require new development to include a system of sidewalks, trails, and bikeways that link all land uses, provide accessibility to parks and schools, and connect to all existing or planned external street and trail facilities in accordance with the Mobility Diagrams.

This policy is implemented through the design of the project.

M 5.22 Roadway Improvement Right-of-Way Dedication. Require proposed new development to dedicate right-of-way, as shown in Appendix D, necessary for improvements to roadways on which the new development fronts.

This policy is implemented through the design of the project.

Comments:

a. **Increase in Vehicle Miles Traveled – Equal or Less Impact**. The traffic impact analysis prepared for the 2040 General Plan identified impacts to Vehicle Miles Traveled (VMT) will exceed the identified State target for both residential and employment. A VMT analysis was prepared for the Project using Valley Transportation Authority's VMT Evaluation Tool. The results of the analysis indicated that, like the 2040 General Plan, Project VMT would not achieve the 15% vehicle miles traveled reduction target mandated by SB 743. As part of the analysis, four possible transportation demand management measures were identified to help reduce total project VMT. However, even with the implementation of all four strategies, Project VMT still exceeded the reduction target. The four possible strategies are outlined below.

- TP01 – School Pool Programs: Organize a program that matches families in carpools for school pick-up and drop-off of all households from the project.

  The measure would help match parents who transport students to schools without a busing program, including private schools, charter schools, and neighborhood schools where students cannot walk or bike. The school pool program would be open to all families in the development. School pools reduce the total number of vehicle trips traveling to and from schools, thereby reducing VMT. However, the City does not currently have any kind of citywide program that the project proponent or future residents could participate in. As a result, this measure is not feasible.

- TP14 – Transit Service Expansion: Project subsidizes transit service through fees and contributions to local transit provider.

  This approach improves transit service to the project, resulting in increased use of transit and reduced VMT. However, there are currently no bus lines serving the project site and this measure is not feasible.

- TP18 – Voluntary Travel Behavior Change Programs: Provide a program that targets individual attitudes towards travel and providing tools for individuals to analyze and alter their travel behavior with 100% expected resident participation.

  These types of programs include mass communication campaigns and travel feedback programs, to encourage the use of shared ride modes, transit, walking, and biking, all of which reduce VMT. However, the City does not currently have any kind of citywide program that the project proponent or future residents could participate in. As a result, this measure is not feasible.

Based upon the VMT analysis performed for this Project, the Project will not achieve the required 15% reduction for residential projects. The City adopted a Statement of Overriding Considerations for this increase in VMT indicating that due to the City's distant location and its relationship to the regional economy buildout of the General Plan would result in significant and unavoidable VMT impacts. Since the project is consistent with the General Plan, and VMT impacts were identified in the certified Final EIR for the 2040 General Plan, and the City adopted a statement of overriding considerations documenting that the benefits of the General Plan outweigh the VMT exceedance, no additional mitigation beyond the applicable standard requirements and or subsequent CEQA review is required. Therefore, the project would not result in impacts related to VMT that are more severe than those identified in the Final EIR for the 2040 General Plan.

b. **Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System – Equal or Less Impact.** The Project complies with all applicable mobility-related plans, programs and policies. The Project will construct additional roadway improvements to Kern Avenue to further implement the requirements of the General Plan, including the payment of the applicable Traffic Impact Fee. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Increased Road Safety Hazards.** The Final Environmental Impact Report for the 2040 General Plan did not evaluate the impacts of the General Plan to Road Safety Hazards. This discussion augments the analysis contained in the FEIR.

   No Impact. The Project will construct standard street improvements along its straight frontage with Kern Avenue. These standard improvements will not insert road design elements that would create a road hazard. In addition, the Project will add additional residential land uses in an area largely comprised of other residential and public uses. As a result, no impacts are anticipated.

d. **Inadequate Emergency Access.** The Final Environmental Impact Report for the 2040 General Plan did not evaluate the impacts of the General Plan to emergency access. This discussion augments the analysis contained in the FEIR.

   No Impact. The Project is located on the valley floor in an area served by a gridded road system and will alter the road system in the area to modify the road network. As a result, the project is not altering the existing situation and no impacts are anticipated.

Project Specific Standard Mitigating Requirements

The following standard requirement will reduce potential impacts.

17. **Payment of Traffic Impact Fee**

    Prior to the issuance of a building permit the project proponent shall pay the adopted Traffic Impact Fee.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan which included a Statement of Overriding Considerations.

18. UTILITIES AND SERVICE SYSTEMS

Summary of FEIR Conclusions:

The Final Environmental Impact Report prepared for the 2040 General Plan assessed environmental impacts related to Aesthics. The impacts and conclusions in the FEIR are as follows:

Would the 2040 General Plan Result In:	The Final EIR Concluded
a. Increase in Water Demand Will Not Require New or Expanded Water Facilities?	No Impact.
b. Wastewater Treatment Requirements Would not be Exceeded. Construction of New or Expanded Wastewater Treatment Facilities Would be Required?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.
c. Sufficient Landfill Capacity to Accommodate the Project's Solid Waste Disposal Needs?	Less than Significant with the Goals, Policies, and Actions contained in the 2040 General Plan. No additional mitigation measures are proposed.

Discussion of Project Specific Impacts:

Would the project involve a new or additional impact beyond the Planning Area-wide impacts identified in FEIR for the 2040 General Plan which would:	Result in a New Significant Impact	Result in an Additional Project-Specific Impact	Have an Equal or Less Impact to the Impacts in FEIR for the General Plan
a. Increase in Water Demand Will Not Require New or Expanded Water Facilities?	☐	☐	☒
b. Wastewater Treatment Requirements Would not be Exceeded. Construction of New or Expanded Wastewater Treatment Facilities Would be Required?	☐	☐	☒
c. Sufficient Landfill Capacity to Accommodate the Project's Solid Waste Disposal Needs?	☐	☐	☒
d. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects,	☐	☒	☐

Project Specific Technical Studies/Analyses:

None.

Standard Requirements Applicable to the Project:

The Project will be required to comply with the following General Plan policies:

PFS 4.8 Water Conservation. Encourage water conservation and other programs which result in reduced demand for wastewater treatment capacity.

This policy is implemented through the design of the project and the standard requirements.

PFS 10.5 New Development. Continue to require that new development provides all necessary water service, fire hydrants, and roads consistent with Fire Department standards.

This policy is implemented through the design of the project.

PFS 1.11 Development Impact Fees. Require applicants for new development to pay Development Impact Fees for traffic circulation, water, wastewater, storm water and public facilities to offset the costs of expanding these as detailed by the impact fee nexus study.

This policy is implemented through the standard requirements.

NCR 1.14 Maintain Pre-Project Stormwater Flows. Encourage project design for smaller projects in the areas of the unconfined Llagas sub-basin to maintain pre-project stormwater flows consistent with City stormwater standards that prohibit offsite discharge up to the 95th percentile storm event for Tier 3 projects, allow treat and release for Tier 2 projects, and allow a more passive, 'best practices' design to minimize runoff for Tier 1 projects.

This policy is implemented through the standard requirements.

Comments:

a. **Increase in Water Demand Will Not Require New or Expanded Water Facilities – Equal or Less Impact.** The Project is included in the water use calculations and system requirements utilized in the Water Master Plans and system requirements in the General Plan. The Project will also connect to existing water supply lines located in Kern Avenue. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

b. **Wastewater Treatment Capacity – Equal or Less Impact**. The Project is included in the water use calculations utilized in the Sewer Master Plans base future demand and system requirements on the General Plan Land Use Map and related population and service area projections. The Project will also connect to the existing sanitary sewer in Kern Avenue. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

c. **Landfill Capacity – Equal or Less Impact**. The City of Gilroy contracts with Recology South Valley to provide curbside recycling, garbage, and organic waste collection services. Solid waste from the City is taken to the San Martin Transfer Station where recyclable materials are separated from the solid waste stream. Waste management and recycling requirements are also contained in Article V of Chapter 12 of the Gilroy Municipal Code. As a result, no impacts beyond those identified in the Final EIR for the 2040 General Plan would occur.

d. **Storm Drain Facilities.** The Final Environmental Impact Report for the 2040 General Plan did not evaluate the impacts of the General Plan to storm drain facilities. This discussion augments the analysis contained in the FEIR.

   Less Than Significant Impact. The Project will install project specific storm drain improvements and connect to the existing storm drain system in Kern Avenue consistent with the Storm Drain Master Plan. This connection will eliminate the current on-ground

stormwater drainage pattern that flows east from the site into an existing drainage swale. As a result, any impacts are expected to be less than significant.

Project Specific Standard Mitigating Requirements

The following standard requirements will reduce potential impacts to a less than significant level.

18. **Sewer Development Impact Fee**

    Prior to the issuance of a building permit the project proponent shall pay the adopted Sewer Development Impact Fee.

19. **Water Development Impact Fee**

    Prior to the issuance of a building permit the project proponent shall pay the adopted Water Development Impact Fee.

20. **Storm Drain Development Impact Fee**

    Prior to the issuance of a building permit the project proponent shall pay the adopted Storm Drain Development Impact Fee.

Project Specific Mitigation Measures:

None required.

Conclusion:

The Final Environmental Impact Report for the General Plan did not identify any significant impacts on the environment. Consequently, this Project that is consistent with the General Plan could not result in environmental effects beyond those impacts identified in the Final Environmental Impact Report prepared for the General Plan.

19. ADDITIONAL CEQA CONSIDERATIONS/DISCUSSION

Conclusion:

The discussion of the Cumulative Impacts, Significant and Unavoidable Effects, Significant Irreversible Environmental Changes, Growth Inducing Impact, and Project Alternatives in the Final Environmental Impact Report would not alter the discussion, conclusions, or require an alteration of the Project.

E. SOURCES

1. City of Gilroy. *City of Gilroy 2020 General Plan.*
2. City of Gilroy. *City of Gilroy 2020 General Plan Final EIR.*
3. City of Gilroy. *City of Gilroy 2040 General Plan*.
4. City of Gilroy. *City of Gilroy 2040 General Plan Final EIR.*
5. City of Gilroy. *The Charter of the City of Gilroy*, as amended.
6. Site Visit by M-Group. February 4, 2021.
7. OAG Architects. *Architecture Plan*. October 22, 2020.
8. Ruggeri-Jensen-Azar. *Vesting Tentative Tract Map*. July 22, 2020.
9. Ripley Landscape, Architecture, Land Planning. *Preliminary Landscape Plan*. August 2020.
10. FirstCarbon Solutions. *Section 106 Cultural Resources Assessment, Kern Avenue Residential Project, City of Gilroy, Santa Clara County, California*. February 24, 2021.
11. H.T Harvey Ecological Consultants. *Kern and St Clar Project, Santa Clara Valley Habitat Plan, Application for Private Project Supplemental Attachment.* September 3, 2020.
12. Quantum Geotechnical, Inc. *Geotechnical Investigation on Proposed Residential Development at Kern Avenue.* March 25, 2020.
13. Illingworth and Rodkin. *The Cottages at Kern First and Kelton Commercial Construction and Community Risk Assessment.* February 10, 2021.
14. Ruggeri-Jensen-Azar. *Preliminary Post-Construction Stormwater Control Plan for The Cottages at Kern. September 2020.*
15. Coast Ridge Ecology. *Biological Resource Assessment for Kern and St. Clar Project*. February 10, 2021.
16. Hexagon Transportation Consultants, Inc. *Memorandum on 9130 & 9160 Kern Avenue Residential VMT Evaluation*. March 17, 2021.
17. Illingworth and Rodkin. *The Cottages at Kern Construction Noise and Vibration Assessment*. February 10, 2021.
18. First Carbon Solutions. *Memorandum on Land Evaluation and Site Assessment Model Results*. March 25, 2020.

Appendix A

Memorandum on Land Evaluation and Site Assessment Model Results

March 25, 2020

Chris Zaballos
Director of Entitlements
D.R. Horton
6683 Owens Drive
Pleasanton, CA 94588

Subject: 9130 Kern Avenue – Land Evaluation and Site Assessment Model Results

Dear Chris:

Per your request, FirstCarbon Solutions (FCS) has prepared a Land Evaluation and Site Assessment Model (LESA) for the property at 9130 Kern Avenue in Gilroy, California.

To preface this letter report, the project site is mapped as Grazing Land and Other Land by the California Department of Conservation Farmland Mapping and Monitoring Program. It is not classified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance and, therefore, does not fall under the Important Farmland umbrella.

That said, FCS prepared a LESA Model and the scoring summary is provided on the following page. FCS concludes that the property at 9130 Kern Avenue does not contain Important Farmland and the conversion of the site to single-family residential use would not be considered a significant impact under LESA criteria. Additionally, the project site is not encumbered with a Williamson Act contract. Thus, under the California Environmental Quality Act (CEQA), the proposed project would not have any significant agricultural resources impacts.

If you have any questions or would like additional information, please contact us at jbrandman@fcs-intl.com and ggruber@fcs-intl.com.

Sincerely,

Jason Brandman, Vice President
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Grant Gruber, Project Manager
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Exhibit 1: Important Farmland Map
Exhibit 2: Soils Map
Exhibit 3: Zone of Influence Map
LESA Model Workbook

UNITED STATES

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LAND EVALUATION AND SITE ASSESSMENT MODEL SCORING SUMMARY

Category	Sub-Category	Points	Factor Weighting	Weighted Factor Rating	Remarks
Land Evaluation	Land Capability Classification	0	0.25	0	Project site contains Clear Lake Clay, 0-2 percent slopes (Class 3w), San Ysidro Loam, 0-2 percent slopes (Class 3s), and Pleasanton Gravelly Loam, 0-2 percent slopes (Class 2s). Because project site is less than 10 acres, the LESA Model assigns 0 points
	Storie Index	72.9	0.25	18.2	Clear Lake Clay has Storie Index of 24; San Ysidro Loam has a Storie Index of 88; Pleasanton Gravelly Loam has a Storie Index of 72. Total Storie Index score represents sum of proportions of each soil
	Subtotal	–	0.5	18.2	–
Site Assessment	Project Site	0	0.15	0	Project site is 3.57 acres. The LESA Model awards 0 points for sites smaller than 10 acres
	Water Resources Availability	75	0.15	11.3	Project site only has access to groundwater. Physical restrictions would apply during both non-drought and drought years.
	Surrounding Agricultural Lands	0	0.15	0	Less than 40 percent of surrounding land uses consist of agricultural land use activities
	Protected Resources Lands	0	0.05	0	Less than 40 percent of surrounding land uses consist of protected agricultural land uses (e.g., Williamson Act preserve)
	Subtotal	–	0.5	11.3	–
Total		**–**	**1.0**	**29.5**	**Determination: *Not Significant*** because score is less than 40 points

Source: ESRI Aerial Imagery. CA Department of Conservation Santa Clara County FMMP, 2016.

FIRSTCARBON SOLUTIONS™

300 150 0 300
Feet

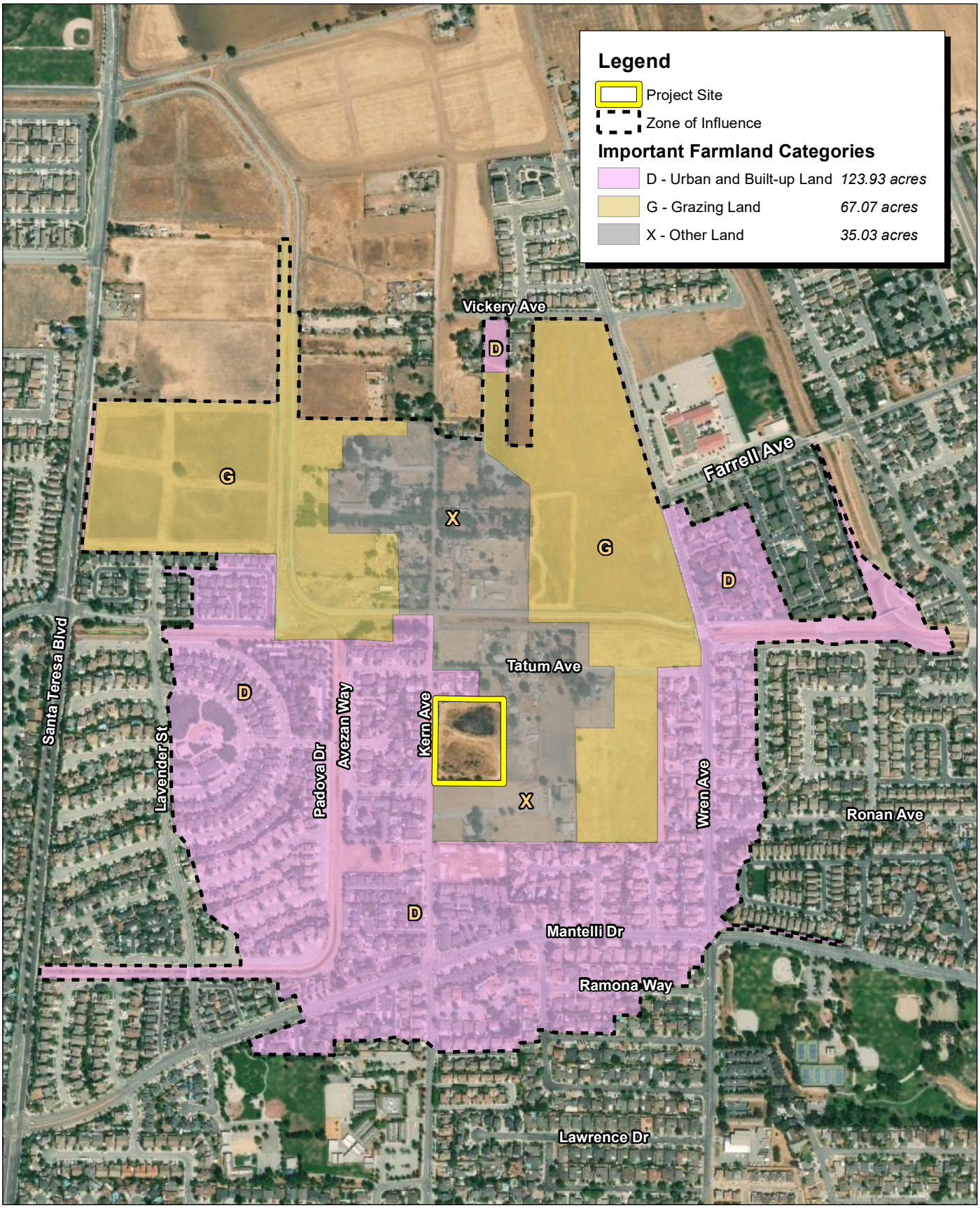
Exhibit 1
Important Farmland Map

Source: ESRI Aerial Imagery. USDA Soils DataMart, Santa Clara Eastern Area.

FIRSTCARBON SOLUTIONS™

300 150 0 300 Feet

Exhibit 2
Soils Map



Source: ESRI Aerial Imagery. CA Department of Conservation Santa Clara County FMMP, 2016.

FIRSTCARBON SOLUTIONS™

700 350 0 700 Feet

Exhibit 3
Zone of Influence

Appendix B

Community Health Impact Assessment

THE COTTAGES AT KERN CONSTRUCTION COMMUNITY RISK ASSESSMENT

Gilroy, California

February 10, 2021

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Introduction

The purpose of this report is to address the potential community risk impacts associated with the construction of the proposed residential project located at 9130 and 9160 Kern Avenue in Gilroy, California. The air quality impacts from this project would be associated with construction of the new buildings. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential project construction health risk impacts and the impact of existing toxic air contaminant (TAC) sources affecting the nearby sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The approximately 3.74-acre project site is currently vacant. The project proposes to construct 29 single-family homes with a corresponding private street and common open space.

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 (PM_{10}), 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 (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air

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

pollutants. 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 complexity 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.

Regulatory Setting

Federal Regulations

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

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

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

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

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

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[3] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

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

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, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

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

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.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[4] 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 community risk modeling methodology.

City of Gilroy General Plan

The City of Gilroy 2040 General Plan[5] was adopted by the City on November 2, 2020. The pertinent goals and policies applicable to the proposed project are listed below.

Goal NCR 3: Contribute to improvements in regional air quality and reductions in greenhouse gas emissions.

NCR 3.3: *Shade Tree Program.* Increase community-wide use of shade trees to decrease energy use associated with building cooling.

NCR 3.4: S*olar Development*. Encourage voluntary community-wide solar photovoltaic development through regulatory barrier reduction and public outreach campaigns.

NCR 3.15: *Reduce Construction Emissions*. Require the use of low emissions construction equipment for public and private projects, consistent with the air district 2017 Clean Air Plan. Where construction-related emissions would exceed the applicable Thresholds of Significance, the City will consider, on a case-by-case basis, implementing Additional Construction Mitigation Measures (Table 8-3 in BAAQMD's CEQA Guidelines).

NCR 3.16: *Implement Dust-Control Measures.* Require the implementation of the air district's dust control measures during construction of individual projects, consistent with the air district 2017 Clean Air Plan.

NCR 3.17: *Sensitive Receptors within 500 feet of U.S. Highway 101*. Require modeling of toxic air contaminants, and include mitigation as may be appropriate,

[4] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.
[5] City of Gilroy, *2040 General Plan*, November 2, 2020. Web: https://www.cityofgilroy.org/DocumentCenter/View/11309/Gilroy-2040-General-Plan-39-MB?bidId=

prior to approval of new residential development within 500 feet of U.S. Highway 101, to ensure significant health risks are mitigated.

NCR 3.18: *Sensitive Receptors within 500 feet of Existing Point Sources or Existing Heavy Industrial Designated Areas.* Require modeling of toxic air contaminants, and include mitigation as may be appropriate, prior to approval of new residential development within the Downtown Specific Plan within 500 feet of existing point sources with screening factors in excess of thresholds, or within 500 feet of areas designated Heavy Industrial, to ensure significant health risks are mitigated.

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 in the single-family residences adjacent to the north and east of the project site. There are additional nearby residences surrounding the project site. This project would also introduce new sensitive receptors (i.e., residents) to the area.

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. Community risks are considered significant if they exceed these levels.

Table 1. BAAQMD CEQA Community Risk Significance Thresholds

Health Risks and Hazards	Single Sources Within ¼-Mile Zone of Influence	Combined Sources (Cumulative from all sources within ¼-Mile zone of influence)
Excess Cancer Risk	10.0 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: PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.		

Construction Community Risk Impacts and Mitigation Measures

Project impacts related to increased community 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.

Community 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 community 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 $PM_{2.5}$.[6] 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 community risks impacts is contained in *Attachment 1*.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 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 CARB EMission FACtors 2017 (EMFAC2017) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[7] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Modeling

Land Use Inputs

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

[6] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.
[7] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/

Table 1. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Single Family Housing	29	Dwelling Unit	52,200	2.80
Other Asphalt Surfaces	0.81	Acre	25,254	0.81
Enclosed Parking Structure	0.13	Acre	5,663	0.13

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 for both phases, including equipment list and schedule, were based on information provided by the project applicant.

The construction equipment worksheets provided by the applicant included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was set to the default values in CalEEMod. Where CalEEMod doesn't provide default values, conservatively high values were assumed for equipment required and hours operated. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2022, project construction would be six-days a week, and the project would be built out over a period of approximately 19 months, or 494 construction workdays. The earliest year of full operation was assumed to be 2024.

Construction Truck Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model; however, CalEEMod has not been updated to include EMFAC2017. 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 estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for grading were estimated from the provided grading volumes. The number of concrete and asphalt total round haul trips were provided for the project and converted to total one-way trips, assuming two trips per delivery.

The construction traffic information was combined with EMFAC2017 motor vehicle emissions factors. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks

(EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (demolition material export and soil import/export). Since CalEEMod does not address cement trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in Santa Clara County for 2022 and 2023 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2017 emission database to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2017 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	71.7% LDA 6.4% LDT1 21.9% LDT2	37.9% MHDT 62.1% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0 (Demo/Soil) 7.3 (Cement/Asphalt)	CalEEMod default distance with 5-min truck idle time.
Site Preparation	9	-	-	CalEEMod default worker trips.
Grading	624	-	319	2,553-cy soil export. CalEEMod default worker trips.
Building Construction	10,248	3,660	290	145 cement truck round trips. CalEEMod default worker and vendor trips.
Trenching	1,098	-	-	CalEEMod default worker trips.
Architectural Coating	2,196	-	-	CalEEMod default worker trips.
Paving	16	-	34	17 asphalt truck round trips. CalEEMod default worker trips.

Notes: [1] Based on 2022-2023 EMFAC2017 light-duty vehicle fleet mix for Santa Clara County.
[2] Includes grading trips estimated by CalEEMod based on amount of material to be removed.

Summary of Computed Construction Period Emissions

The CalEEMod model and EMFAC2017 emissions provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.0656 tons (131 pounds). The on-road emissions are a result of haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one 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. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.0155 tons (31 pounds) for the overall construction period.

Community Health Risk from Project Construction

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors 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.[8]

Construction Sources

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area sources.[9] 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, a near-ground level release height of 7 feet (2 meters) was used for the area source. 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 7-foot 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.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2013 – 2017) of hourly meteorological data from the San Martin Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. to 7:00 p.m., when the majority of construction activity would occur according to the applicant. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2022-2023 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

[8] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.
[9] 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

meters) were used to represent the breathing height on the first floor of nearby single-family residences.[10]

Summary of Construction Community Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. Infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

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 refence exposure level of 5 $\mu g/m^3$.

The maximum-modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ 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 residential MEI was located at single-family home north of the project site. Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the construction MEI. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

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

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impact				
Project Construction	Unmitigated	**28.7 (infant)**	0.16	0.02
	Mitigated*	2.1 (infant)	0.04	<0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated*	*No*	*No*	*No*

* Construction equipment with Tier 4 interim engines and Best Management Practices as Mitigation Measures.

[10] 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

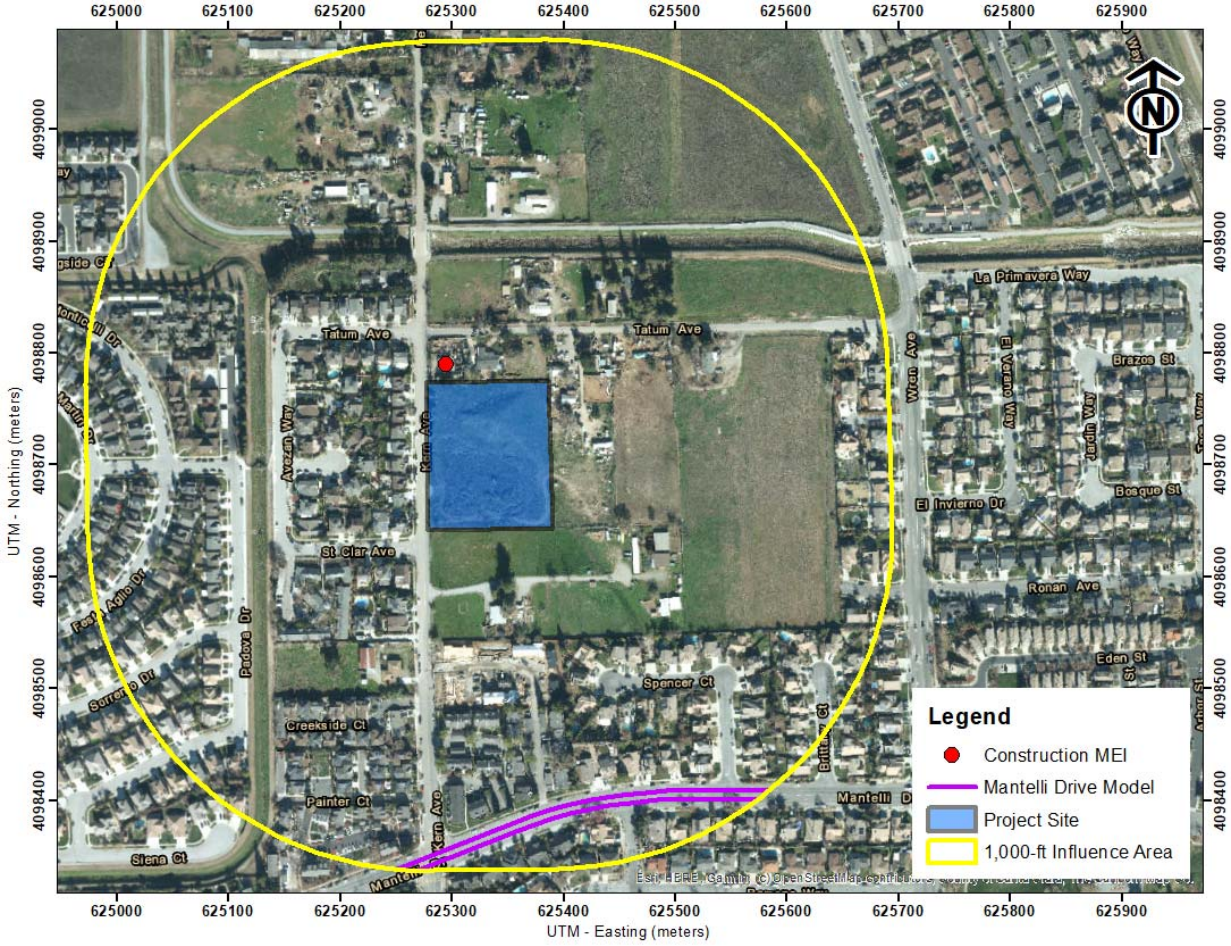
Figure 1. Project Construction Site, Locations of Off-Site Sensitive Receptors, and Maximum TAC Impact Location

Cumulative Community Risks of all TAC Sources at the Offsite 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 influence area based on provided information indicates that traffic on Mantelli Drive would exceed an average daily traffic (ADT) of 10,000 vehicles. A review of BAAQMD's stationary source geographic information systems (GIS) map tool[11] identified no stationary sources with the potential to affect the project site and MEI. Figure 2 shows the location of sources affecting the project site and MEI. Community risk impacts from these sources upon the MEI reported in Table 5. Details of the modeling and community risk calculations are included in *Attachment 5.*

[11] BAAQMD, *Permitted Stationary Sources Risk and Hazards,* Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources



Local Roadways – Mantelli Drive

A refined analysis of potential health impacts from vehicle traffic on Mantelli Drive was conducted. The refined analysis involved predicting emissions for the traffic volume and mix of vehicle types on both roadways 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 exposures. *Attachment 1* includes a description of how community risk impacts, including cancer risk are computed.

Emission Rates

This analysis involved the development of DPM, organic TACs, and $PM_{2.5}$ emissions for traffic on both roadways using the Caltrans version of the EMFAC2017 emissions model, known as CT-EMFAC2017. CT-EMFAC2017 provides emission factors for mobile source criteria pollutants and TACs, including DPM. Emission processes modeled include running exhaust for DPM, $PM_{2.5}$ and total organic compounds (e.g., 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 and 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 (i.e., Santa Clara County), type of road (i.e., major/collector), truck percentage for non-state highways in Santa Clara County (3.51 percent),[12] traffic mix assigned by CT-EMFAC2017 for the county, year of analysis (2022 – construction start year), and season (annual).

The average daily traffic (ADT) for Mantelli Drive was based on AM and PM peak-hour existing traffic volumes for the nearby roadways provided by the project's traffic consultant.[13] Assuming a 1 percent per year increase, the predicted ADT on Mantelli Drive would be 10,800 vehicles. Average hourly traffic distributions for Santa Clara County roadways were developed using the EMFAC model,[14] which were then applied to the ADT volumes to obtain estimated hourly traffic volumes and emissions for the roadway. An average travel speed of 35 miles per hour (mph) on Mantelli Drive was used for all hours of the day based on posted speed limit signs on the roadway.

In order 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 and project site, the CT-EMFAC2017 model was used to develop vehicle emission factors for the year 2022 (project construction year). Year 2022 emissions were conservatively assumed as being representative of future conditions over the time period that cancer risks are evaluated.

Dispersion Modeling

Dispersion modeling of TAC and $PM_{2.5}$ emissions was conducted using the EPA AERMOD air quality dispersion model, which is recommended by the BAAQMD for this type of analysis.[15] TAC and $PM_{2.5}$ emissions from traffic on Mantelli Drive within 1,000 feet of the project site were evaluated. Vehicle traffic on the roadway was modeled using a series of adjacent volume sources along a line (line volume sources); with line segments used for the eastbound and westbound travel directions on Mantelli Drive. The same meteorological data and off-site sensitive receptors used in the previous construction dispersion modeling were used in the roadway modeling. Other inputs to the model included road geometry and elevations, hourly traffic emissions, and receptor locations. Annual TAC and $PM_{2.5}$ concentrations for 2022 from traffic on Mantelli Drive were calculated using the model. Concentrations were calculated at the project MEI with receptor heights of 5 feet (1.5 meters) to represent the breathing heights of residents in the single-family home.

[12] 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

[13] Email correspondence with Gicela Del Rio, T.E., Hexagon Transportation Consultants, Inc., January 22, 2021, *Mantelli Inter Vols.xlsx*.

[14] The Burden output from EMFAC2007, a previous version of CARB's EMFAC model, was used for this since the current web-based version of EMFAC2014 does not include Burden type output with hour by hour traffic volume information.

[15] BAAQMD. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2012

Figure 2 shows the roadway segments modeled and residential receptor locations used in the modeling. Table 5 lists the risks and hazards from the roadway. The emission rates and roadway calculations used in the analysis are shown in *Attachment 5*.

Summary of Cumulative Health Risk Impact at Construction MEI

Table 5 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). The project would have an exceedance with respect to community risk caused by project construction activities, since the maximum unmitigated cancer risk exceeds the BAAQMD single-source thresholds. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risks would be lowered to a level below the single-source thresholds. The cancer risk, $PM_{2.5}$ concentration, and HI, unmitigated and mitigated, does not exceed its cumulative threshold.

Table 5. Impacts from Combined Sources at Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	**28.7 (infant)**	0.16	0.02
	Mitigated	2.1 (infant)	0.04	<0.01
BAAQMD Single-Source Threshold		***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Sources				
Mantelli Drive, ADT 10,800		0.1	0.01	<0.01
Combined Sources	Unmitigated	28.8 (infant)	0.17	<0.03
	Mitigated	2.2 (infant)	0.05	<0.02
BAAQMD Cumulative Source Threshold		***>100***	***>0.8***	***>10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} 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. *Recommended Measure AQ-1 would implement BAAQMD-recommended best management practices*.

Recommended 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 Recommended Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Mitigation Measure AQ-2: **Use construction equipment that has low diesel particulate matter exhaust emissions.**

A feasible plan to reduce emissions such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below significance levels is 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 (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. Equipment that meets U.S. EPA emission standards for Tier 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 66 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment could be used; alternatively (or in combination),

    b. Use of electrical or non-diesel fueled equipment.

Effectiveness of Mitigation Measure AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 interim engines standards and BAAQMD best management practices for construction were included. With these implemented, the project's construction cancer risk impact, assuming infant exposure, would be reduced to 2.1 per million. Other means that reduce cancer risk by 66 percent would reduce the cancer risk to 9.8 chances per million. As a result, the project's construction cancer risk would be reduced below the BAAQMD single-source threshold.

On-Site Community Health Risk Impacts – New Project Residents

In addition to evaluating health impact from project construction, a health risk assessment was completed to assess the impact existing TAC sources would have on the new proposed sensitive receptors (residents) that that project would introduce. The same TAC sources identified above were used in this health risk assessment.[16]

Local Roadways – Mantelli Drive

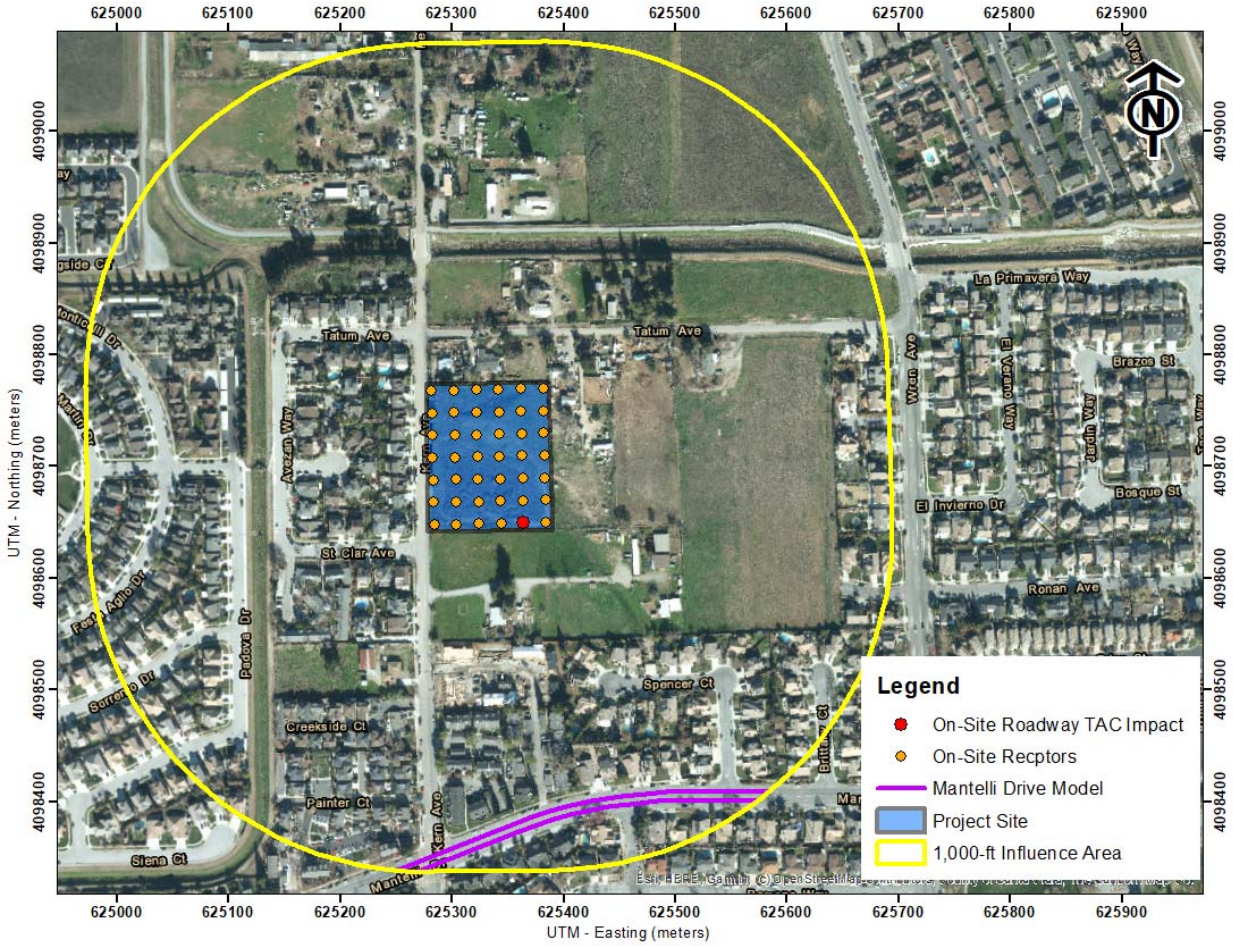
The roadway analysis for the project residents was conducted in the same manner as described above for the off-site MEI. The project set of receptors were placed throughout the project area and were spaced every 66 feet (20 meters). Roadway impacts were modeled at receptor heights of 5 feet (1.5 meters) representing sensitive receptors on the first floor on the future single-family homes. The portions of Mantelli Drive 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

[16] 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.

assumed to be in the new housing area for 24 hours per day for 350 days per year. The highest impacts from Mantelli Drive occurred at the first-floor receptor in a home along the southern boundary of the project site closest to the roadway. Cancer risks associated with Mantelli Drive are greatest closest to Mantelli Drive and decrease with distance from the road. The roadway community risk impacts at the project site are shown in Table 6. Details of the emission calculations, dispersion modeling, and cancer risk calculations are contained in *Attachment 5*.

Figure 3. Project Site, On-Site Residential Receptors, Roadway Segments Evaluated, and Locations of Maximum Roadway TAC Impacts



Combined Community Health Risk at Project Site

Community risk impacts from the existing 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. Cumulative Community Risk Impacts Upon the On-site Sensitive Receptors

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Mantelli Drive, ADT 10,800	0.2	0.01	<0.01
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*
Cumulative Total	0.2	0.01	<0.01
BAAQMD Cumulative Source Threshold	***>100***	***>0.8***	***>10.0***
Exceed Threshold?	*No*	*No*	*No*

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime 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 includes the EMFAC2017 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the construction health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format

Attachment 5 includes the cumulative community risk calculations, modeling results, and health risk calculations from sources affecting the construction MEI and project site receptors.

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.[17] 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.[18] 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.[19] 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

[17] 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.
[18] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[19] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). 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:

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

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
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 = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
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

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

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th 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 ($\mu g/m^3$).

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: The Cotages at Kern (Gilroy, CA)

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size 29 Dwelling Units 3.74 AC total project acres disturbed

2.8 AC s.f. residential

0 s.f. retail

0 s.f. office/commercial

0.13 AC & 0.81 AC s.f. other, specify: common open space & streets

0 s.f. parking garage N/A spaces

0 s.f. parking lot N/A spaces

Construction Hours (Mon-Sat) 7 am to 7 pm

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):

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:**	**1/3/2022**	**Total phase:**	**0**			**Overall Import/Export Volumes**
		End Date:	**1/3/2022**					
	Concrete/Industrial Saws	81	0.73	0		#DIV/0!	0	**Demolition Volume**
	Excavators	158	0.38	0		#DIV/0!	0	Square footage of buildings to be demolished
	Rubber-Tired Dozers	247	0.4	0		#DIV/0!	0	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37	0		#DIV/0!	0	**0** square feet *or*
	Other Equipment?							**0** Hauling volume (tons)
								Any pavement demolished and hauled? **0 tons**
	Site Preparation	**Start Date:**	**1/4/2022**	**Total phase:**	**3**			
		End Date:	**1/6/2022**					
1	Graders	187	0.41	8	3	8	1840	
0	Rubber Tired Dozers	247	0.4			0	0	
0	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**1/7/2022**	**Total phase:**	**78**			
		End Date:	**4/7/2022**					**Soil Hauling Volume**
1	Excavators	158	0.38	8	9	0.9	4323	Export volume = **(2553)** cubic yards?
0	Graders	187	0.41			0	0	Import volume = **(0)** cubic yards?
1	Rubber Tired Dozers	247	0.4	8	9	0.9	7114	
0	Concrete/Industrial Saws	81	0.73			0	0	
1	Tractors/Loaders/Backhoes	97	0.37	8	9	0.9	2584	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**4/1/2022**	**Total phase:**	**366**			
		End Date:	**6/1/2023**					
1	Tractor/Loader/Backhoe	97	0.37	8	6	0.1	1723	
0	Excavators	158	0.38		0	0	0	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**4/1/2022**	**Total phase:**	**366**			**Cement Trucks? _?_ Total Round-Trips (145)**
		End Date:	**6/1/2023**					
2	Cranes	231	0.29	1	12	0.03	1608	Electric? (Yes and No) ___ Otherwise assumed diesel
1	Forklifts	89	0.2	8	253	5.5	36027	Liquid Propane (LPG)? (NO) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	366	8	182004	Or temporary line power? (NO) ___
1	Tractors/Loaders/Backhoes	97	0.37	8	12	0.3	3445	
0	Welders	46	0.45			0	0	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**6/1/2022**	**Total phase:**	**366**			
		End Date:	**8/1/2023**					
2	Air Compressors	78	0.48	8	253	5.5	151557	
0	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**8/1/2023**	**Total phase:**	**2**			
		End Date:	**8/2/2023**					
1	Cement and Mortar Mixers	9	0.56	8	2	8	81	
0	Pavers	130	0.42			0	0	**Asphalt? ___ cubic yards or (17) round trips?**
1	Paving Equipment	132	0.36	8	2	8	760	
1	Rollers	80	0.38	8	2	8	486	
0	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							

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

Kern Cottages, Gilroy - Construction

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	29.00	Dwelling Unit	2.80	52,200.00	83
Other Asphalt Surfaces	0.81	Acre	0.81	35,283.60	0
Other Non-Asphalt Surfaces	0.13	Acre	0.13	5,662.80	0

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 & Electric Company				
CO2 Intensity (lb/MWhr)	210	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2017 rate - 210

Land Use - Provided plans & construction land uses

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Off-road Equipment - Provided construction equip & hours

Grading - grading = 2,553cy export

Trips and VMT - 0 Trips EMFAC2017, building const = 145 round cement ruck trips, paving = 17 round asphalt truck trips

Construction Off-road Equipment Mitigation - BMPs, Tier 4 interim mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	18.00	366.00
tblConstructionPhase	NumDays	230.00	366.00
tblConstructionPhase	NumDays	8.00	78.00
tblConstructionPhase	NumDays	18.00	2.00
tblConstructionPhase	NumDays	5.00	3.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	PhaseEndDate	2/23/2023	8/1/2023
tblConstructionPhase	PhaseEndDate	1/4/2023	6/1/2023
tblConstructionPhase	PhaseEndDate	2/16/2022	4/7/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	8/2/2023
tblConstructionPhase	PhaseEndDate	2/4/2022	1/6/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	6/1/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	4/1/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/7/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	8/1/2023
tblConstructionPhase	PhaseStartDate	1/29/2022	1/4/2022
tblGrading	MaterialExported	0.00	2,553.00
tblLandUse	LotAcreage	9.42	2.80
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	5.50
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.10
tblOffRoadEquipment	UsageHours	8.00	5.50
tblOffRoadEquipment	UsageHours	8.00	0.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.90
tblOffRoadEquipment	UsageHours	7.00	0.30
tblOffRoadEquipment	UsageHours	8.00	0.90
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblTripsAndVMT	HaulingTripNumber	319.00	0.00

tblTripsAndVMT	VendorTripNumber	10.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	28.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	6.00	0.00

2.0 Emissions Summary

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					
2022	0.2797	0.7525	0.8944	1.5200e-003	0.0274	0.0407	0.0681	0.0146	0.0399	0.0546	0.0000	131.1109	131.1109	0.0129	0.0000	131.4329
2023	0.2459	0.4516	0.6068	1.0200e-003	0.0000	0.0235	0.0235	0.0000	0.0232	0.0232	0.0000	87.6827	87.6827	6.8500e-003	0.0000	87.8540
Maximum	**0.2797**	**0.7525**	**0.8944**	**1.5200e-003**	**0.0274**	**0.0407**	**0.0681**	**0.0146**	**0.0399**	**0.0546**	**0.0000**	**131.1109**	**131.1109**	**0.0129**	**0.0000**	**131.4329**

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					
2022	0.2173	0.5510	0.9574	1.5200e-003	0.0123	2.10E-03	0.0144	6.58E-03	2.1000e-003	8.6900e-003	0.0000	131.1108	131.1108	0.0129	0.0000	131.4327

2023	0.2070	0.3692	0.6390	1.0200e-003	0.0000	1.39E-03	1.3900e-003	0.0000	1.3900e-003	1.3900e-003	0.0000	87.6826	87.6826	6.8500e-003	0.0000	87.8539
Maximum	**0.2173**	**0.5510**	**0.9574**	**1.5200e-003**	**0.0123**	**2.1000e-003**	**0.0144**	**6.5800e-003**	**2.1000e-003**	**8.6900e-003**	**0.0000**	**131.1108**	**131.1108**	**0.0129**	**0.0000**	**131.4327**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.27**	**23.58**	**-6.34**	**0.00**	**55.01**	**94.56**	**82.74**	**55.02**	**94.47**	**87.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-3-2022**	**4-2-2022**	0.0667	0.0305
2	**4-3-2022**	**7-2-2022**	0.2384	0.1772
3	**7-3-2022**	**10-2-2022**	0.3659	0.2824
4	**10-3-2022**	**1-2-2023**	0.3654	0.2824
5	**1-3-2023**	**4-2-2023**	0.3369	0.2762
6	**4-3-2023**	**7-2-2023**	0.2883	0.2386
7	**7-3-2023**	**9-30-2023**	0.0660	0.0562
		Highest	0.3659	0.2824

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	0.4215	6.2300e-003	0.4638	5.2000e-004		0.0370	0.0370		0.0370	0.0370	3.6862	1.2568	4.9431	7.3000e-003	2.1000e-004	5.1884
Energy	4.5400e-003	0.0388	0.0165	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	67.3289	67.3289	3.9500e-003	1.4600e-003	67.8636
Mobile	0.0547	0.2111	0.6407	2.3800e-003	0.2353	1.8600e-003	0.2371	0.0630	1.7300e-003	0.0647	0.0000	218.3790	218.3790	6.7800e-003	0.0000	218.5485
Waste						0.0000	0.0000		0.0000	0.0000	7.0763	0.0000	7.0763	0.4182	0.0000	17.5312
Water						0.0000	0.0000		0.0000	0.0000	0.5994	1.3710	1.9704	0.0618	1.4900e-003	3.9593

Total	**0.4808**	**0.2561**	**1.1210**	**3.1500e-003**	**0.2353**	**0.0420**	**0.2773**	**0.0630**	**0.0419**	**0.1049**	**11.3619**	**288.3357**	**299.6976**	**0.4980**	**3.1600e-003**	**313.0909**

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	0.4215	6.2300e-003	0.4638	5.2000e-004		0.0370	0.0370		0.0370	0.0370	3.6862	1.2568	4.9431	7.3000e-003	2.1000e-004	5.1884
Energy	4.5400e-003	0.0388	0.0165	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	67.3289	67.3289	3.9500e-003	1.4600e-003	67.8636
Mobile	0.0547	0.2111	0.6407	2.3800e-003	0.2353	1.8600e-003	0.2371	0.0630	1.7300e-003	0.0647	0.0000	218.3790	218.3790	6.7800e-003	0.0000	218.5485
Waste						0.0000	0.0000		0.0000	0.0000	7.0763	0.0000	7.0763	0.4182	0.0000	17.5312
Water						0.0000	0.0000		0.0000	0.0000	0.5994	1.3710	1.9704	0.0618	1.4900e-003	3.9593
Total	**0.4808**	**0.2561**	**1.1210**	**3.1500e-003**	**0.2353**	**0.0420**	**0.2773**	**0.0630**	**0.0419**	**0.1049**	**11.3619**	**288.3357**	**299.6976**	**0.4980**	**3.1600e-003**	**313.0909**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/4/2022	1/6/2022	6	3	
2	Grading	Grading	1/7/2022	4/7/2022	6	78	
3	Building Construction	Building Construction	4/1/2022	6/1/2023	6	366	
4	Trenching	Trenching	4/1/2022	6/1/2023	6	366	

5	Architectural Coating	Architectural Coating	6/1/2022	8/1/2023	6	366	
6	Paving	Paving	8/1/2023	8/2/2023	6	2	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.94

Residential Indoor: 105,705; Residential Outdoor: 35,235; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	2	5.50	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Site Preparation	Graders	1	8.00	187	0.41
Trenching	Tractors/Loaders/Backhoes	1	0.10	97	0.37
Building Construction	Cranes	2	0.10	231	0.29
Building Construction	Forklifts	1	5.50	89	0.20
Grading	Excavators	1	0.90	158	0.38
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	0.90	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	0.30	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	1	0.90	97	0.37
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Graders	0	0.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	0	0.00	247	0.40
Building Construction	Welders	0	0.00	46	0.45

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
Trenching	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2022

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					8.0000e-004	0.0000	8.0000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.2000e-004	7.8600e-003	2.5700e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.3000e-004	2.3000e-004	0.0000	0.8699	0.8699	2.8000e-004	0.0000	0.8769
Total	**6.2000e-004**	**7.8600e-003**	**2.5700e-003**	**1.0000e-005**	**8.0000e-004**	**2.5000e-004**	**1.0500e-003**	**9.0000e-005**	**2.3000e-004**	**3.2000e-004**	**0.0000**	**0.8699**	**0.8699**	**2.8000e-004**	**0.0000**	**0.8769**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					3.6000e-004	0.0000	3.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6000e-004	2.6100e-003	5.2600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.8699	0.8699	2.8000e-004	0.0000	0.8769
Total	**1.6000e-004**	**2.6100e-003**	**5.2600e-003**	**1.0000e-005**	**3.6000e-004**	**2.0000e-005**	**3.8000e-004**	**4.0000e-005**	**2.0000e-005**	**6.0000e-005**	**0.0000**	**0.8699**	**0.8699**	**2.8000e-004**	**0.0000**	**0.8769**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Grading - 2022

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					0.0266	0.0000	0.0266	0.0146	0.0000	0.0146	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2800e-003	0.0537	0.0398	7.0000e-005		2.6000e-003	2.6000e-003		2.4000e-003	2.4000e-003	0.0000	6.4810	6.4810	2.1000e-003	0.0000	6.5334
Total	**5.2800e-003**	**0.0537**	**0.0398**	**7.0000e-005**	**0.0266**	**2.6000e-003**	**0.0292**	**0.0146**	**2.4000e-003**	**0.0170**	**0.0000**	**6.4810**	**6.4810**	**2.1000e-003**	**0.0000**	**6.5334**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					0.0120	0.0000	0.0120	6.5500e-003	0.0000	6.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2000e-003	0.0258	0.0473	7.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	6.4810	6.4810	2.1000e-003	0.0000	6.5334
Total	**1.2000e-003**	**0.0258**	**0.0473**	**7.0000e-005**	**0.0120**	**1.2000e-004**	**0.0121**	**6.5500e-003**	**1.2000e-004**	**6.6700e-003**	**0.0000**	**6.4810**	**6.4810**	**2.1000e-003**	**0.0000**	**6.5334**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Building Construction - 2022

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	0.0500	0.4509	0.5428	9.3000e-004		0.0239	0.0239		0.0234	0.0234	0.0000	80.2937	80.2937	7.5700e-003	0.0000	80.4828
Total	**0.0500**	**0.4509**	**0.5428**	**9.3000e-004**		**0.0239**	**0.0239**		**0.0234**	**0.0234**	**0.0000**	**80.2937**	**80.2937**	**7.5700e-003**	**0.0000**	**80.4828**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0176	0.3418	0.5923	9.3000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	80.2936	80.2936	7.5700e-003	0.0000	80.4827
Total	**0.0176**	**0.3418**	**0.5923**	**9.3000e-004**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**80.2936**	**80.2936**	**7.5700e-003**	**0.0000**	**80.4827**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0254	0.2293	0.2981	5.1000e-004		0.0114	0.0114		0.0112	0.0112	0.0000	44.2303	44.2303	4.0400e-003	0.0000	44.3313
Total	**0.0254**	**0.2293**	**0.2981**	**5.1000e-004**		**0.0114**	**0.0114**		**0.0112**	**0.0112**	**0.0000**	**44.2303**	**44.2303**	**4.0400e-003**	**0.0000**	**44.3313**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	9.7100e-003	0.1883	0.3263	5.1000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	44.2302	44.2302	4.0400e-003	0.0000	44.3312
Total	**9.7100e-003**	**0.1883**	**0.3263**	**5.1000e-004**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**44.2302**	**44.2302**	**4.0400e-003**	**0.0000**	**44.3312**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2022

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	2.4000e-004	2.4600e-003	3.2900e-003	0.0000		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.4015	0.4015	1.3000e-004	0.0000	0.4047
Total	**2.4000e-004**	**2.4600e-003**	**3.2900e-003**	**0.0000**		**1.3000e-004**	**1.3000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.4015**	**0.4015**	**1.3000e-004**	**0.0000**	**0.4047**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0000e-004	1.9900e-003	3.4400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.4015	0.4015	1.3000e-004	0.0000	0.4047
Total	**1.0000e-004**	**1.9900e-003**	**3.4400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.4015**	**0.4015**	**1.3000e-004**	**0.0000**	**0.4047**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2000e-004	1.2400e-003	1.8100e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.2214	0.2214	7.0000e-005	0.0000	0.2232
Total	**1.2000e-004**	**1.2400e-003**	**1.8100e-003**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.2214**	**0.2214**	**7.0000e-005**	**0.0000**	**0.2232**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	6.0000e-005	1.1000e-003	1.9000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.2214	0.2214	7.0000e-005	0.0000	0.2232
Total	**6.0000e-005**	**1.1000e-003**	**1.9000e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.2214**	**0.2214**	**7.0000e-005**	**0.0000**	**0.2232**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2022

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	0.1890					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0345	0.2376	0.3059	5.0000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	43.0649	43.0649	2.8000e-003	0.0000	43.1350
Total	**0.2235**	**0.2376**	**0.3059**	**5.0000e-004**		**0.0138**	**0.0138**		**0.0138**	**0.0138**	**0.0000**	**43.0649**	**43.0649**	**2.8000e-003**	**0.0000**	**43.1350**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.1890					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1900e-003	0.1788	0.3091	5.0000e-004		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	43.0648	43.0648	2.8000e-003	0.0000	43.1349
Total	**0.1982**	**0.1788**	**0.3091**	**5.0000e-004**		**6.7000e-004**	**6.7000e-004**		**6.7000e-004**	**6.7000e-004**	**0.0000**	**43.0648**	**43.0648**	**2.8000e-003**	**0.0000**	**43.1349**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0320	0.2174	0.3022	5.0000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	42.5968	42.5968	2.5500e-003	0.0000	42.6605
Total	**0.2190**	**0.2174**	**0.3022**	**5.0000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**42.5968**	**42.5968**	**2.5500e-003**	**0.0000**	**42.6605**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.1870					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0900e-003	0.1768	0.3057	5.0000e-004		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	42.5967	42.5967	2.5500e-003	0.0000	42.6604
Total	**0.1961**	**0.1768**	**0.3057**	**5.0000e-004**		**6.6000e-004**	**6.6000e-004**		**6.6000e-004**	**6.6000e-004**	**0.0000**	**42.5967**	**42.5967**	**2.5500e-003**	**0.0000**	**42.6604**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8000e-004	3.5800e-003	4.7200e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.6342	0.6342	2.0000e-004	0.0000	0.6391
Paving	1.0600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4400e-003**	**3.5800e-003**	**4.7200e-003**	**1.0000e-005**		**1.8000e-004**	**1.8000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**0.6342**	**0.6342**	**2.0000e-004**	**0.0000**	**0.6391**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1000e-004	2.9500e-003	5.0800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6342	0.6342	2.0000e-004	0.0000	0.6391
Paving	1.0600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1700e-003**	**2.9500e-003**	**5.0800e-003**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.6342**	**0.6342**	**2.0000e-004**	**0.0000**	**0.6391**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0547	0.2111	0.6407	2.3800e-003	0.2353	1.8600e-003	0.2371	0.0630	1.7300e-003	0.0647	0.0000	218.3790	218.3790	6.7800e-003	0.0000	218.5485
Unmitigated	0.0547	0.2111	0.6407	2.3800e-003	0.2353	1.8600e-003	0.2371	0.0630	1.7300e-003	0.0647	0.0000	218.3790	218.3790	6.7800e-003	0.0000	218.5485

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	276.08	287.39	249.98	632,757	632,757
Total	276.08	287.39	249.98	632,757	632,757

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Other Non-Asphalt Surfaces	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704
Single Family Housing	0.614951	0.035734	0.181842	0.104158	0.013506	0.005015	0.012793	0.021727	0.002177	0.001514	0.005249	0.000632	0.000704

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.3492	22.3492	3.0900e-003	6.4000e-004	22.6167
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.3492	22.3492	3.0900e-003	6.4000e-004	22.6167
NaturalGas Mitigated	4.5400e-003	0.0388	0.0165	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	44.9797	44.9797	8.6000e-004	8.2000e-004	45.2470
NaturalGas Unmitigated	4.5400e-003	0.0388	0.0165	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	44.9797	44.9797	8.6000e-004	8.2000e-004	45.2470

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	842888	4.5400e-003	0.0388	0.0165	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	44.9797	44.9797	8.6000e-004	8.2000e-004	45.2470
Total		**4.5400e-003**	**0.0388**	**0.0165**	**2.5000e-004**		**3.1400e-003**	**3.1400e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**44.9797**	**44.9797**	**8.6000e-004**	**8.2000e-004**	**45.2470**

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					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	842888	4.5400e-003	0.0388	0.0165	2.5000e-004		3.1400e-003	3.1400e-003		3.1400e-003	3.1400e-003	0.0000	44.9797	44.9797	8.6000e-004	8.2000e-004	45.2470
Total		**4.5400e-003**	**0.0388**	**0.0165**	**2.5000e-004**		**3.1400e-003**	**3.1400e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**44.9797**	**44.9797**	**8.6000e-004**	**8.2000e-004**	**45.2470**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	234627	22.3492	3.0900e-003	6.4000e-004	22.6167
Total		**22.3492**	**3.0900e-003**	**6.4000e-004**	**22.6167**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	234627	22.3492	3.0900e-003	6.4000e-004	22.6167
Total		**22.3492**	**3.0900e-003**	**6.4000e-004**	**22.6167**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive 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	0.4215	6.2300e-003	0.4638	5.2000e-004		0.0370	0.0370		0.0370	0.0370	3.6862	1.2568	4.9431	7.3000e-003	2.1000e-004	5.1884
Unmitigated	0.4215	6.2300e-003	0.4638	5.2000e-004		0.0370	0.0370		0.0370	0.0370	3.6862	1.2568	4.9431	7.3000e-003	2.1000e-004	5.1884

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	0.0376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1709	3.7500e-003	0.2485	5.1000e-004		0.0358	0.0358		0.0358	0.0358	3.6862	0.9051	4.5913	6.9600e-003	2.1000e-004	4.8282
Landscaping	6.4700e-003	2.4800e-003	0.2153	1.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	0.3518	0.3518	3.4000e-004	0.0000	0.3602
Total	**0.4215**	**6.2300e-003**	**0.4638**	**5.2000e-004**		**0.0370**	**0.0370**		**0.0370**	**0.0370**	**3.6862**	**1.2568**	**4.9431**	**7.3000e-003**	**2.1000e-004**	**5.1884**

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	0.0376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1709	3.7500e-003	0.2485	5.1000e-004		0.0358	0.0358		0.0358	0.0358	3.6862	0.9051	4.5913	6.9600e-003	2.1000e-004	4.8282
Landscaping	6.4700e-003	2.4800e-003	0.2153	1.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	0.3518	0.3518	3.4000e-004	0.0000	0.3602
Total	**0.4215**	**6.2300e-003**	**0.4638**	**5.2000e-004**		**0.0370**	**0.0370**		**0.0370**	**0.0370**	**3.6862**	**1.2568**	**4.9431**	**7.3000e-003**	**2.1000e-004**	**5.1884**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.9704	0.0618	1.4900e-003	3.9593
Unmitigated	1.9704	0.0618	1.4900e-003	3.9593

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.88947 / 1.19119	1.9704	0.0618	1.4900e-003	3.9593
Total		**1.9704**	**0.0618**	**1.4900e-003**	**3.9593**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	1.88947 / 1.19119	1.9704	0.0618	1.4900e-003	3.9593
Total		**1.9704**	**0.0618**	**1.4900e-003**	**3.9593**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.0763	0.4182	0.0000	17.5312
Unmitigated	7.0763	0.4182	0.0000	17.5312

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	34.86	7.0763	0.4182	0.0000	17.5312
Total		**7.0763**	**0.4182**	**0.0000**	**17.5312**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	34.86	7.0763	0.4182	0.0000	17.5312
Total		**7.0763**	**0.4182**	**0.0000**	**17.5312**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2017 Calculations

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Site Preparation	3	0	9	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	97.2	0	0
Grading	8	0	624	0	319	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6739.2	0	6380
Building Construction	28	10	10248	3660	290	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	110678.4	26718	2117
Trenching	3	0	1098	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	11858.4	0	0
Architectural Coating	6	0	2196	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	23716.8	0	0
Paving	8	0	16	0	34	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	172.8	0	248.2

Number of Days Per Year					
2022	1/4/22	12/31/22	362	**310**	
2023	1/1/23	8/2/23	214	**183**	
			576	**494**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Site Preparation	1/4/2022	1/6/2022	6	3
Grading	1/7/2022	4/7/2022	6	78
Building Construction	4/1/2022	6/1/2023	6	366
Trenching	4/1/2022	6/1/2023	6	366
Architectural Coating	6/1/2022	8/1/2023	6	366
Paving	8/1/2023	8/2/2023	6	2

Summary of Construction Traffic Emissions (EMFAC2017)

Pollutants	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
YEAR	*Tons*										*Metric Tons*
Toxic Air Contaminants (1 Mile Trip Length)											
2022	0.0088	0.0296	0.0452	0.0001	0.0038	0.0009	0.0047	0.0006	0.0004	0.0010	8.7846
2023	0.0048	0.0159	0.0262	0.0000	0.0023	0.0005	0.0028	0.0003	0.0002	0.0006	5.0077

Adjustment Factors for EMFAC2017 Gasoline Light Duty Vehicles						
Year	NOx Exhaust	TOG Evaporative	TOG Exhaust	PM Exhaust	CO Exhaust	CO2 Exhaust
NA	1	1	1	1	1	1
2021	1.0002	1.0001	1.0002	1.0009	1.0005	1.0023
2022	1.0004	1.0003	1.0004	1.0018	1.0014	1.0065
2023	1.0007	1.0006	1.0007	1.0032	1.0027	1.0126
2024	1.0012	1.0010	1.0011	1.0051	1.0044	1.0207
2025	1.0018	1.0016	1.0016	1.0074	1.0065	1.0309
2026	1.0023	1.0022	1.0020	1.0091	1.0083	1.0394
2027	1.0028	1.0028	1.0024	1.0105	1.0102	1.0475
2028	1.0034	1.0035	1.0028	1.0117	1.0120	1.0554
2029	1.0040	1.0042	1.0032	1.0129	1.0138	1.0629
2030	1.0047	1.0051	1.0037	1.0142	1.0156	1.0702
2031	1.0054	1.0061	1.0042	1.0155	1.0173	1.0770
2032	1.0061	1.0072	1.0047	1.0169	1.0189	1.0834
2033	1.0068	1.0083	1.0052	1.0182	1.0204	1.0893
2034	1.0075	1.0095	1.0058	1.0196	1.0218	1.0947
2035	1.0081	1.0108	1.0063	1.0210	1.0232	1.0997
2036	1.0088	1.0121	1.0069	1.0223	1.0244	1.1041
2037	1.0094	1.0134	1.0074	1.0236	1.0255	1.1080
2038	1.0099	1.0148	1.0079	1.0248	1.0265	1.1114
2039	1.0104	1.0161	1.0085	1.0259	1.0274	1.1143
2040	1.0109	1.0174	1.0090	1.0270	1.0281	1.1168
2041	1.0113	1.0186	1.0095	1.0279	1.0288	1.1189
2042	1.0116	1.0198	1.0099	1.0286	1.0294	1.1207
2043	1.0119	1.0207	1.0103	1.0293	1.0299	1.1221
2044	1.0122	1.0216	1.0106	1.0299	1.0303	1.1233
2045	1.0124	1.0225	1.0109	1.0303	1.0306	1.1243
2046	1.0125	1.0233	1.0111	1.0308	1.0309	1.1251
2047	1.0127	1.0240	1.0113	1.0311	1.0311	1.1258
2048	1.0128	1.0246	1.0115	1.0314	1.0313	1.1263
2049	1.0128	1.0252	1.0116	1.0316	1.0315	1.1268
2050	1.0129	1.0257	1.0117	1.0318	1.0316	1.1272
Enter Year: 2023	**1.0007**	**1.0006**	**1.0007**	**1.0032**	**1.0027**	**1.0126**

*PM Exhaust off model factor is only applied to the PM Exhaust emissions not start/idle

The off-model adjustment factors need to be applied only to emissions from gasoline light duty vehicles (LDA, LDT1, LDT2 and MDV). Please note that the adjustment factors are by calendar year and includes all model years.

Enter NA in the date field if adjustments do not apply

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMP	PM2.5_PMW	PM10_RUP	PM10_IDL	PM10_STR	PM10_PMP	PM10_PMW	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLE	N2O_STRE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2022	HHDT	Aggregate	Aggregate	Gasoline	4.973172	516.9338	99.50323	3.654204	0	0.338391	0.001236	0	0.000744	0.005	0.02646	0.001344	0	0.00081	0.02	0.06174	1964.961	0	46.86739	0.097725	0	0.00044	0.140899	0	0.010576	0.494672	0	0.002301	0.136891	0.830556	0.033943	0.061166	0.721824	0	0.00252	0.136891	0.830556	0.033943	0.061166	30.00648	0	5.27737	0.019445	0	0.000464
Santa Clara	2022	HHDT	Aggregate	Aggregate	Diesel	8277.463	1011013	88031.26	3.535499	63.08378	2.080194	0.033949	0.03347	0	0.008873	0.026088	0.035484	0.034983	0	0.035494	0.060872	1486.606	11783.13	0	0.003901	0.215524	0	0.233674	1.852143	0	0.08399	4.640183	0	0	0	0.095616	5.282495	0	0	0	0	0	0	0.366847	63.30293	0	0.014045	0.111321	0
Santa Clara	2022	HHDT	Aggregate	Aggregate	Natural Ga	348.7902	14223.14	1360.282	1.755776	21.14752	0	0.004789	0.030991	0	0.009	0.02646	0.005006	0.032392	0	0.036	0.06174	3203.692	4060.116	0	3.511574	1.248503	0	0.653093	0.827681	0	0.161697	0.045805	0	0	0	3.710887	1.306054	0	0	0	0	0	0	10.70122	21.55662	0	0	0	0
Santa Clara	2022	LDA	Aggregate	Aggregate	Gasoline	733557.7	26453304	3456649	0.03872	0	0.197227	0.001299	0	0.001748	0.002	0.01575	0.001413	0	0.001902	0.008	0.03675	259.2126	0	55.39361	0.002345	0	0.054199	0.004449	0	0.026685	0.009015	0	0.243726	0.100881	0.22086	0.178182	0.20337	0.013151	0	0.266848	0.100881	0.22086	0.178182	0.20337	0.63218	0	2.325265	0.002565	0	0.000548
Santa Clara	2022	LDA	Aggregate	Aggregate	Diesel	7146.668	268335.1	33963.02	0.071556	0	0	0.006579	0	0	0.002	0.01575	0.006877	0	0	0.008	0.03675	200.3149	0	0	0.000626	0	0	0.031487	0	0	0.013485	0	0	0	0	0.015352	0	0	0	0	0	0	0	0.198488	0	0	0.001894	0	0
Santa Clara	2022	LDA	Aggregate	Aggregate	Electricity	25894.61	943282.8	126428	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	LDT1	Aggregate	Aggregate	Gasoline	73556.92	2443329	340743.8	0.091156	0	0.251292	0.001724	0	0.002226	0.002	0.01575	0.001875	0	0.002421	0.008	0.03675	300.527	0	64.49485	0.004882	0	0.070027	0.007217	0	0.028775	0.021236	0	0.344801	0.173613	0.628849	0.332831	0.420667	0.030964	0	0.377511	0.173613	0.628849	0.332831	0.420667	1.068397	0	2.450832	0.002974	0	0.000638
Santa Clara	2022	LDT1	Aggregate	Aggregate	Diesel	36.8388	667.9121	121.0603	1.185315	0	0	0.157566	0	0	0.002	0.01575	0.164691	0	0	0.008	0.03675	408.3259	0	0	0.009501	0	0	0.064183	0	0	0.204561	0	0	0	0	0.232879	0	0	0	0	0	0	0	1.159574	0	0	0.00386	0	0
Santa Clara	2022	LDT1	Aggregate	Aggregate	Electricity	624.8771	24059.07	3099.469	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	LDT2	Aggregate	Aggregate	Gasoline	250455.4	8295824	1167439	0.077278	0	0.299792	0.001307	0	0.001684	0.002	0.01575	0.001421	0	0.001831	0.008	0.03675	327.6413	0	71.42656	0.003665	0	0.072415	0.006473	0	0.033384	0.014906	0	0.339292	0.128171	0.436499	0.281495	0.299507	0.021744	0	0.371482	0.128171	0.436499	0.281495	0.299507	0.860463	0	2.923834	0.003242	0	0.000707
Santa Clara	2022	LDT2	Aggregate	Aggregate	Diesel	1663.513	62652.21	8136.947	0.039252	0	0	0.004754	0	0	0.002	0.01575	0.004969	0	0	0.008	0.03675	275.5741	0	0	0.000647	0	0	0.043316	0	0	0.013935	0	0	0	0	0.015864	0	0	0	0	0	0	0	0.123161	0	0	0.002605	0	0
Santa Clara	2022	LDT2	Aggregate	Aggregate	Electricity	2695.96	82111.52	13502.44	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	LHDT1	Aggregate	Aggregate	Gasoline	16536.9	566343.8	246375.2	0.235238	0.038471	0.530556	0.002161	0	0.000388	0.002	0.03276	0.00235	0	0.000422	0.008	0.07644	1006.569	121.1222	18.98971	0.01086	0.121305	0.025473	0.014262	0.003125	0.041267	0.052874	0.440699	0.129054	0.125369	0.861898	0.025267	0.050121	0.077153	0.643067	0.141298	0.125369	0.861898	0.025267	0.050121	0.97349	3.751848	1.764958	0.009961	0.001199	0.000188
Santa Clara	2022	LHDT1	Aggregate	Aggregate	Diesel	11104.44	423266.4	139679.8	1.613919	2.033114	0	0.021273	0.026869	0	0.003	0.03276	0.022235	0.028084	0	0.012	0.07644	544.3042	133.047	0	0.007318	0.005098	0	0.085557	0.020913	0	0.157544	0.10976	0	0	0	0.179353	0.124954	0	0	0	0	0	0	0.661457	0.909745	0	0.005146	0.001258	0
Santa Clara	2022	LHDT2	Aggregate	Aggregate	Gasoline	2253.3	77523.96	33570.81	0.240034	0.037891	0.516259	0.002078	0	0.000346	0.002	0.03822	0.00226	0	0.000377	0.008	0.08918	1147.291	139.0737	21.54397	0.008737	0.120275	0.024583	0.015135	0.003045	0.039911	0.039365	0.434196	0.123837	0.121118	0.819863	0.023133	0.046225	0.057441	0.633578	0.135586	0.121118	0.819863	0.023133	0.046225	0.722025	3.75488	1.776904	0.011353	0.001376	0.000213
Santa Clara	2022	LHDT2	Aggregate	Aggregate	Diesel	4438.985	166319.5	55836.85	1.346918	2.041795	0	0.021771	0.027131	0	0.003	0.03822	0.022756	0.028358	0	0.012	0.08918	612.5422	213.4891	0	0.007003	0.005098	0	0.096283	0.033558	0	0.150761	0.10976	0	0	0	0.171631	0.124954	0	0	0	0	0	0	0.634383	0.909745	0	0.005791	0.002018	0
Santa Clara	2022	MCY	Aggregate	Aggregate	Gasoline	32925.36	241011	65850.71	1.151611	0	0.270649	0.001812	0	0.002978	0.001	0.00504	0.001937	0	0.003161	0.004	0.01176	210.2729	0	61.39967	0.328946	0	0.256691	0.06628	0	0.015352	2.228751	0	1.954835	0.704215	2.060677	0.995009	1.817765	2.753726	0	2.127328	0.704215	2.060677	0.995009	1.817765	19.18808	0	9.0045	0.002081	0	0.000608
Santa Clara	2022	MDV	Aggregate	Aggregate	Gasoline	151961.1	4876240	702265.7	0.099589	0	0.371177	0.001397	0	0.001912	0.002	0.01575	0.001519	0	0.002079	0.008	0.03675	396.236	0	86.90417	0.004621	0	0.087878	0.007887	0	0.036541	0.019446	0	0.437645	0.147462	0.472734	0.331376	0.347901	0.028322	0	0.479161	0.147462	0.472734	0.331376	0.347901	0.980018	0	3.406111	0.003921	0	0.00086
Santa Clara	2022	MDV	Aggregate	Aggregate	Diesel	3721.225	135478.8	18101.22	0.038775	0	0	0.004203	0	0	0.002	0.01575	0.004393	0	0	0.008	0.03675	360.3121	0	0	0.000478	0	0	0.056636	0	0	0.010285	0	0	0	0	0.011709	0	0	0	0	0	0	0	0.184421	0	0	0.003406	0	0
Santa Clara	2022	MDV	Aggregate	Aggregate	Electricity	1080.167	34834.41	5508.057	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2022	MH	Aggregate	Aggregate	Gasoline	2891.835	26265.33	289.2991	0.413359	0	0.334516	0.001633	0	0.000362	0.003	0.05586	0.001776	0	0.000394	0.012	0.13034	1756.095	0	25.97914	0.015124	0	0.032419	0.025426	0	0.034963	0.066433	0	0.137518	0.088945	2.156488	0.036513	0.106238	0.096939	0	0.150564	0.088945	2.156488	0.036513	0.106238	1.697423	0	3.037213	0.017378	0	0.000257
Santa Clara	2022	MH	Aggregate	Aggregate	Diesel	1019.353	9712.32	101.9353	4.184918	0	0	0.085576	0	0	0.004	0.05586	0.089445	0	0	0.016	0.13034	1018.587	0	0	0.005027	0	0	0.160108	0	0	0.108225	0	0	0	0	0.123206	0	0	0	0	0	0	0	0.382773	0	0	0.009629	0	0
Santa Clara	2022	MHDT	Aggregate	Aggregate	Gasoline	1456.112	75284.48	29133.88	0.474932	0.088412	0.377896	0.001319	0	0.000449	0.003	0.05586	0.001435	0	0.00051	0.012	0.13034	1722.789	532.6547	39.05903	0.014881	0.262553	0.04023	0.023376	0.007484	0.029181	0.072945	1.011617	0.219187	0.087649	0.506692	0.018903	0.038182	0.106442	1.47615	0.239982	0.087649	0.506692	0.018903	0.038182	1.680953	15.10368	4.939745	0.017048	0.005271	0.000287
Santa Clara	2022	MHDT	Aggregate	Aggregate	Diesel	9430.024	551923.8	94917.85	2.277066	7.413096	1.687822	0.039812	0.015538	0	0.003	0.05586	0.041612	0.01624	0	0.012	0.13034	1050.628	914.98	0	0.004378	0.004667	0	0.165144	0.143822	0	0.094265	0.100481	0	0	0	0.107314	0.11439	0	0	0	0	0	0	0.32147	2.58681	0	0.009926	0.008644	0
Santa Clara	2022	OBUS	Aggregate	Aggregate	Gasoline	501.9655	24150.25	10043.33	0.443255	0.065137	0.32561	0.000952	0	0.000213	0.003	0.05586	0.001035	0	0.000232	0.012	0.13034	1767.375	377.9272	26.38965	0.013022	0.200837	0.030332	0.022732	0.005646	0.026387	0.061436	0.747416	0.156088	0.026802	0.295531	0.015889	0.036065	0.089647	1.090627	0.170897	0.026802	0.295531	0.015889	0.036065	1.365657	5.781487	3.261978	0.01749	0.00374	0.000261
Santa Clara	2022	OBUS	Aggregate	Aggregate	Diesel	762.3964	53839.19	6991.348	2.314382	10.4182	2.005848	0.021086	0.015288	0	0.003	0.05586	0.02204	0.015979	0	0.012	0.13034	1185.916	1892.098	0	0.002538	0.027964	0	0.18641	0.297411	0	0.054653	0.602048	0	0	0	0.062218	0.685386	0	0	0	0	0	0	0.239321	8.657847	0	0.011204	0.017876	0
Santa Clara	2022	SBUS	Aggregate	Aggregate	Gasoline	249.3134	11500.83	997.2534	0.430325	0.924415	0.566946	0.001196	0	0.000498	0.002	0.3192	0.001301	0	0.000541	0.008	0.7448	865.5448	2582.545	48.67377	0.011856	2.442701	0.058309	0.024366	0.088243	0.053528	0.058325	10.61061	0.332747	0.061157	0.415506	0.010413	0.025261	0.085108	15.48298	0.364316	0.061157	0.415506	0.010413	0.025261	1.259002	82.05319	8.624782	0.008565	0.025556	0.000482
Santa Clara	2022	SBUS	Aggregate	Aggregate	Diesel	1014.086	31965.96	11702.42	6.765334	45.00081	0.786274	0.042018	0.05033	0	0.003	0.3192	0.043917	0.052605	0	0.012	0.7448	1145.085	3716.49	0	0.004669	0.013069	0	0.179991	0.584181	0	0.100532	0.281366	0	0	0	0.114448	0.320314	0	0	0	0	0	0	0.27746	5.867721	0	0.010818	0.035112	0
Santa Clara	2022	UBUS	Aggregate	Aggregate	Gasoline	8.419396	1059.849	33.67758	0.491737	0	1.236285	0.000328	0	9.7E-05	0.003	0.05586	0.000356	0	0.000105	0.012	0.13034	2351.817	0	104.599	0.006789	0	0.178596	0.036386	0	0.091633	0.022728	0	0.768536	0.190076	1.35875	0.031079	0.049249	0.033164	0	0.84145	0.190076	1.35875	0.031079	0.049249	0.527722	0	8.852622	0.023273	0	0.001035
Santa Clara	2022	UBUS	Aggregate	Aggregate	Diesel	423.2358	46482.16	1692.943	0.803453	0	0	0.005651	0	0	0.008415	0.029326	0.005907	0	0	0.033661	0.068427	1481.178	0	0	0.077358	0	0	0.232821	0	0	0.001105	0	0	0	0	0.078949	0	0	0	0	0	0	0	0.131304	0	0	0.014002	0	0
Santa Clara	2022	UBUS	Aggregate	Aggregate	Natural Ga	104.0289	12325.91	416.1154	0.48934	0	0	0.003183	0	0	0.008475	0.029034	0.003327	0	0	0.033899	0.067746	2016.3	0	0	6.413607	0	0	0.411036	0	0	0.091638	0	0	0	0	6.545556	0	0	0	0	0	0	0	49.80397	0	0	0	0	0

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUP	PM10_IDL	PM10_STR	PM10_PMB	PM10_PMT	CO2_RUNE	CO2_IDLEX	CO2_STRE	CH4_RUNE	CH4_IDLEX	CH4_STRE	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNI	ROG_IDLE	ROG_STRE	ROG_HOTS	ROG_RUNI	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2023	HHDT	Aggregate	Aggregate	Gasoline	4.815448	553.4124	96.34748	3.178298	0	0.254165	0.001157	0	0.000623	0.005	0.02646	0.001259	0	0.000677	0.02	0.06174	1915.642	0	46.38676	0.084318	0	0.000462	0.130889	0	0.008571	0.409676	0	0.002416	0.109047	0.558691	0.026465	0.047808	0.597798	0	0.002645	0.109047	0.558691	0.026465	0.047808	27.8207	0	5.57125	0.018957	0	0.000459
Santa Clara	2023	HHDT	Aggregate	Aggregate	Diesel	8401.79	1034051	89180.29	2.696198	57.80539	2.360147	0.023887	0.026373	0	0.008879	0.026103	0.024967	0.027565	0	0.035514	0.060907	1411.729	11326.45	0	0.001106	0.214953	0	0.221904	1.78036	0	0.023817	4.627869	0	0	0	0	0.027114	5.268477	0	0	0	0	0	0.233741	67.52667	0	0.013337	0.107007	0
Santa Clara	2023	HHDT	Aggregate	Aggregate	Natural Ga	360.3246	14693.25	1405.266	1.588314	20.76108	0	0.004529	0.028055	0	0.009	0.02646	0.004734	0.029323	0	0.036	0.06174	3174.275	4018.428	0	3.456549	1.237751	0	0.647097	0.819183	0	0.148044	0.042416	0	0	0	3.64007	1.291393	0	0	0	0	0	10.76049	21.60789	0	0	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Gasoline	751359.6	26739811	3542534	0.034059	0	0.184615	0.001247	0	0.001682	0.002	0.01575	0.001356	0	0.001829	0.008	0.03675	252.091	0	53.87356	0.002048	0	0.050071	0.004113	0	0.025656	0.007696	0	0.221504	0.094205	0.212597	0.166193	0.187545	0.011228	0	0.242518	0.094205	0.212597	0.166193	0.187545	0.586148	0	2.259775	0.002495	0	0.000533
Santa Clara	2023	LDA	Aggregate	Aggregate	Diesel	7591.987	280497.7	36090.42	0.058679	0	0	0	0.005598	0	0	0.002	0.01575	0.005851	0	0	0.008	0.03675	195.1926	0	0	0.000552	0	0	0.030682	0	0	0.011887	0	0	0	0	0.013532	0	0	0	0	0	0.188023	0	0	0.001845	0	0
Santa Clara	2023	LDA	Aggregate	Aggregate	Electricity	28074.67	1034348	136585.9	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Gasoline	75517.84	2475367	350251	0.078745	0	0.232751	0.001604	0	0.002087	0.002	0.01575	0.001745	0	0.00227	0.008	0.03675	292.8794	0	62.80265	0.004214	0	0.063907	0.006493	0	0.02759	0.018087	0	0.309393	0.159698	0.584022	0.309209	0.384203	0.026384	0	0.338746	0.159698	0.584022	0.309209	0.384203	0.955745	0	2.366858	0.002898	0	0.000621
Santa Clara	2023	LDT1	Aggregate	Aggregate	Diesel	34.1777	620.5176	112.4335	1.098891	0	0	0.146297	0	0	0.002	0.01575	0.152912	0	0	0.008	0.03675	401.6268	0	0	0.008837	0	0	0.06313	0	0	0.190256	0	0	0	0	0.216594	0	0	0	0	0	0	1.080107	0	0	0.003797	0	0
Santa Clara	2023	LDT1	Aggregate	Aggregate	Electricity	788.4144	31182.48	3917.01	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Gasoline	254167.5	8294772	1184412	0.06837	0	0.275999	0.001263	0	0.001639	0.002	0.01575	0.001374	0	0.001783	0.008	0.03675	316.8848	0	69.17216	0.003305	0	0.067695	0.00592	0	0.031692	0.013288	0	0.313842	0.123254	0.427158	0.276975	0.291298	0.019387	0	0.343617	0.123254	0.427158	0.276975	0.291298	0.800025	0	2.837237	0.003136	0	0.000685
Santa Clara	2023	LDT2	Aggregate	Aggregate	Diesel	1802.688	66004.69	8781.203	0.037098	0	0	0.004581	0	0	0.002	0.01575	0.004788	0	0	0.008	0.03675	268.3329	0	0	0.000636	0	0	0.042178	0	0	0.01369	0	0	0	0	0.015585	0	0	0	0	0	0	0.124122	0	0	0.002537	0	0
Santa Clara	2023	LDT2	Aggregate	Aggregate	Electricity	3304.555	98384.64	16510.28	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Gasoline	16555.13	562142	246646.7	0.210457	0.037398	0.511224	0.002137	0	0.000377	0.002	0.03276	0.002324	0	0.00041	0.008	0.07644	994.5276	120.0678	18.82225	0.009676	0.118805	0.02387	0.012895	0.003089	0.040194	0.046707	0.428491	0.120584	0.120359	0.829144	0.024473	0.047994	0.068155	0.625253	0.132025	0.120359	0.829144	0.024473	0.047994	0.867722	3.754766	1.724	0.009842	0.001188	0.000186
Santa Clara	2023	LHDT1	Aggregate	Aggregate	Diesel	11594.64	435998.6	145846	1.400562	1.919948	0	0.019496	0.026734	0	0.003	0.03276	0.020378	0.027943	0	0.012	0.07644	535.8142	131.265	0	0.007088	0.005098	0	0.084223	0.020633	0	0.152594	0.10976	0	0	0	0.173718	0.124954	0	0	0	0	0	0.641529	0.909745	0	0.005065	0.001241	0
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Gasoline	2285.018	77947.41	34043.37	0.21093	0.036728	0.496392	0.002042	0	0.000334	0.002	0.03822	0.00222	0	0.000363	0.008	0.08918	1132.921	137.76	21.32176	0.007566	0.117557	0.022949	0.013529	0.00301	0.038884	0.03359	0.420989	0.114958	0.114086	0.752468	0.022171	0.043386	0.049014	0.614306	0.125864	0.114086	0.752468	0.022171	0.043386	0.620201	3.758932	1.718516	0.011211	0.001363	0.000211
Santa Clara	2023	LHDT2	Aggregate	Aggregate	Diesel	4660.728	171541.4	58626.09	1.17888	1.93121	0	0.020832	0.02707	0	0.003	0.03822	0.021774	0.028294	0	0.012	0.08918	603.2432	210.8377	0	0.00683	0.005098	0	0.094821	0.033141	0	0.147052	0.10976	0	0	0	0.167409	0.124954	0	0	0	0	0	0.621451	0.909745	0	0.005703	0.001993	0
Santa Clara	2023	MCY	Aggregate	Aggregate	Gasoline	33683.49	242470.7	67366.97	1.148719	0	0.270672	0.00184	0	0.002859	0.001	0.00504	0.001969	0	0.003039	0.004	0.01176	210.1672	0	61.03922	0.326994	0	0.255241	0.066143	0	0.01536	2.208057	0	1.941958	0.689105	1.969445	0.985054	1.809555	2.736079	0	2.11358	0.689105	1.969445	0.985054	1.809555	18.86893	0	9.034026	0.00208	0	0.000604
Santa Clara	2023	MDV	Aggregate	Aggregate	Gasoline	154431.4	4896063	714241.1	0.085683	0	0.336488	0.001332	0	0.001823	0.002	0.01575	0.001448	0	0.001982	0.008	0.03675	383.1839	0	84.08131	0.004049	0	0.08064	0.007039	0	0.034344	0.016817	0	0.396565	0.140569	0.457303	0.323766	0.336538	0.024505	0	0.434185	0.140569	0.457303	0.323766	0.336538	0.891357	0	3.240031	0.003792	0	0.000832
Santa Clara	2023	MDV	Aggregate	Aggregate	Diesel	4004.429	142223.9	19410.39	0.034292	0	0	0.003829	0	0	0.002	0.01575	0.004002	0	0	0.008	0.03675	350.448	0	0	0.000445	0	0	0.055086	0	0	0.009578	0	0	0	0	0.010904	0	0	0	0	0	0	0.180483	0	0	0.003313	0	0
Santa Clara	2023	MDV	Aggregate	Aggregate	Electricity	1532.638	48234.63	7794.674	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0.004888	0	0.00456	0.017501	0	0	0	0	0	0
Santa Clara	2023	MH	Aggregate	Aggregate	Gasoline	2857.04	26157.03	285.8182	0.361451	0	0.336127	0.001555	0	0.000345	0.003	0.05586	0.001691	0	0.000375	0.012	0.13034	1731.827	0	25.56622	0.013045	0	0.031746	0.02323	0	0.035777	0.05596	0	0.132332	0.081683	1.97006	0.033844	0.096831	0.081657	0	0.144887	0.081683	1.97006	0.033844	0.096831	1.390474	0	2.91812	0.017138	0	0.000253
Santa Clara	2023	MH	Aggregate	Aggregate	Diesel	1053.778	9907.819	105.3778	4.0099	0	0	0.079211	0	0	0.004	0.05586	0.082793	0	0	0.016	0.13034	1007.175	0	0	0.004873	0	0	0.158314	0	0	0.104917	0	0	0	0	0.119441	0	0	0	0	0	0	0.367033	0	0	0.009521	0	0
Santa Clara	2023	MHDT	Aggregate	Aggregate	Gasoline	1507.68	78317.15	30165.67	0.385258	0.088623	0.367592	0.001293	0	0.000446	0.003	0.05586	0.001406	0	0.000485	0.012	0.13034	1697.438	526.34	38.16999	0.011942	0.266499	0.038604	0.019927	0.007724	0.029367	0.057622	1.014767	0.206928	0.080059	0.455824	0.017154	0.033931	0.084081	1.480746	0.22656	0.080059	0.455824	0.017154	0.033931	1.316681	15.14023	4.623501	0.016798	0.005209	0.000378
Santa Clara	2023	MHDT	Aggregate	Aggregate	Diesel	9262.822	558718.8	92583.75	1.59247	5.703996	2.12952	0.007398	0.005414	0	0.003	0.05586	0.007733	0.005658	0	0.012	0.13034	1010.629	886.4048	0	0.000529	0.003602	0	0.158857	0.13933	0	0.011387	0.077551	0	0	0	0.012963	0.088286	0	0	0	0	0	0.113094	2.687765	0	0.009548	0.008374	0
Santa Clara	2023	OBUS	Aggregate	Aggregate	Gasoline	503.4572	23697.77	10073.17	0.401971	0.065148	0.321785	0.000992	0	0.000219	0.003	0.05586	0.001079	0	0.000239	0.012	0.13034	1743.614	374.6133	26.08015	0.011771	0.201157	0.029667	0.020963	0.005691	0.026276	0.05538	0.74759	0.152323	0.027045	0.299878	0.01619	0.03654	0.080811	1.090882	0.166775	0.027045	0.299878	0.01619	0.03654	1.211154	5.782545	3.193149	0.017254	0.003707	0.000258
Santa Clara	2023	OBUS	Aggregate	Aggregate	Diesel	753.4001	53354.33	6899.877	1.902854	8.28017	2.210652	0.009253	0.002588	0	0.003	0.05586	0.009671	0.002705	0	0.012	0.13034	1163.247	1820.683	0	0.000567	0.024706	0	0.182846	0.286186	0	0.012205	0.533913	0	0	0	0.013895	0.605542	0	0	0	0	0	0.141032	9.053135	0	0.01099	0.017201	0
Santa Clara	2023	SBUS	Aggregate	Aggregate	Gasoline	263.5229	11968.77	1054.092	0.420713	0.924728	0.578334	0.001201	0	0.000506	0.002	0.3192	0.001307	0	0.00055	0.008	0.7448	859.0893	2565.057	48.16666	0.011122	2.441451	0.057864	0.023879	0.088232	0.054355	0.054742	10.61517	0.330464	0.063152	0.426847	0.010977	0.026004	0.07988	15.48964	0.361817	0.063152	0.426847	0.010977	0.026004	1.167899	82.08092	8.465591	0.008501	0.025383	0.000477
Santa Clara	2023	SBUS	Aggregate	Aggregate	Diesel	1013.614	31894.7	11696.96	6.544978	44.13946	0.832887	0.040645	0.046993	0	0.003	0.3192	0.042483	0.049118	0	0.012	0.7448	1136.76	3703.284	0	0.004568	0.012858	0	0.178683	0.582105	0	0.098352	0.27682	0	0	0	0.111967	0.315138	0	0	0	0	0	0.275014	6.038953	0	0.01074	0.034987	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Gasoline	8.423223	1060.331	33.69289	0.150806	0	0.638272	0.002209	0	0.000888	0.003	0.05586	0.002402	0	0.000966	0.012	0.13034	1956.542	0	88.49758	0.007038	0	0.09018	0.015696	0	0.066738	0.022728	0	0.374288	0.008476	0.037646	0.001991	0.00493	0.033164	0	0.409798	0.008476	0.037646	0.001991	0.00493	0.258128	0	8.852622	0.019362	0	0.000876
Santa Clara	2023	UBUS	Aggregate	Aggregate	Diesel	430.5287	46874.38	1722.115	0.802545	0	0	0.005646	0	0	0.008399	0.029403	0.005901	0	0	0.033598	0.068607	1480.062	0	0	0.077245	0	0	0.232645	0	0	0.001104	0	0	0	0	0.078834	0	0	0	0	0	0	0.131094	0	0	0.013992	0	0
Santa Clara	2023	UBUS	Aggregate	Aggregate	Natural Ga	96.97562	11960.41	387.9025	0.491564	0	0	0.003197	0	0	0.008538	0.028723	0.003341	0	0	0.034153	0.06702	2024.074	0	0	6.451045	0	0	0.412621	0	0	0.092173	0	0	0	0	6.583765	0	0	0	0	0	0	50.12464	0	0	0	0	0

Attachment 4: Project Construction Emissions and Health Risk Calculations

Cottages at Kern, Gilroy, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2022	Construction	0.0416	CON_DPM	83.2	0.01900	2.39E-03	14616	1.64E-07
2023	Construction	0.0240	CON_DPM	48.0	0.01096	1.38E-03	14616	9.45E-08
Total		***0.0656***		***131.3***	***0.0300***	***0.0038***		

Construction Hours

hr/day =	12	(7am - 7pm)
days/yr =	365	
hours/year =	4380	

Cottages at Kern, Gilroy, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2022	Construction	CON_FUG	0.0152	30.4	0.00693	8.73E-04	14,616	5.97E-08
2023	Construction	CON_FUG	0.0003	0.7	0.00016	1.96E-05	14,616	1.34E-09
Total			***0.0155***	***31.0***	***0.0071***	***0.0009***		

Construction Hours

hr/day =	12	(7am - 7pm)
days/yr =	365	
hours/year =	4380	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2022	Construction	0.0030	CON_DPM	6.0	0.00138	1.74E-04	14616	1.19E-08
2023	Construction	0.0019	CON_DPM	3.8	0.00087	1.09E-04	14616	7.48E-09
Total		***0.0049***		***9.8***	***0.0022***	***0.0003***		

Construction Hours

hr/day =	12	(7am - 7pm)
days/yr =	365	
hours/year =	4380	

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

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2022	Construction	CON_FUG	0.0072	14.3	0.00327	4.12E-04	14,616	2.82E-08
2023	Construction	CON_FUG	0.0003	0.7	0.00016	1.96E-05	14,616	1.34E-09
Total			***0.0075***	***15.0***	***0.0034***	***0.0004***		

Construction Hours

hr/day =	12	(7am - 7pm)
days/yr =	365	
hours/year =	4380	

Cottages at Kern, Gilroy, CA - Construction Health Impact Summary

Maximum Impacts at Cancer Risk MEI Residential Location - Without Mitigatio

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2022	0.1053	0.0641	18.73	0.0211	0.16
2023	0.0607	0.0014	9.96	0.0121	0.06
Total	-	-	**28.7**	-	-
Maximum	0.1053	0.0641	**-**	**0.02**	**0.16**

Maximum Impacts at Cancer Risk MEI Residential Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2022	0.0076	0.0303	1.36	0.002	0.04
2023	0.0048	0.0014	0.79	0.001	0.01
Total	-	-	**2.1**	-	-
Maximum	0.0076	0.0303	**-**	**0.002**	**0.04**

- Tier 4 Interim Engine and BMP Mitigation

Cottages at Kern, Gilroy, 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 $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
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

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022	0.1053	10	1.43	2022	0.1053	-	-			
1	1	0 - 1	2022	0.1053	10	17.29	2022	0.1053	1	0.30	0.0211	0.0641	0.1598
2	1	1 - 2	2023	0.0607	10	9.96	2023	0.0607	1	0.17	0.0121	0.0014	0.0619
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						**28.7**				**0.48**			

* Third trimester of pregnancy

Cottages at Kern, Gilroy, 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 $(mg/kg\text{-}day)^{-1}$
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 ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
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

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022	0.0076	10	0.10	2022	0.0076	-	-			
1	1	0 - 1	2022	0.0076	10	1.25	2022	0.0076	1	0.02	0.0015	0.0303	0.0360
2	1	1 - 2	2023	0.0048	10	0.79	2023	0.0048	1	0.01	0.0010	0.0014	0.0060
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						**2.1**				**0.04**			

* Third trimester of pregnancy

Attachment 5: Community Risk Modeling Information and Calculations

CT-EMFAC2017 Emissions Factors for Mantelli Drive

File Name:	Kern Cottages - Santa Clara (SF) - 2022 - Annual.EF
CT-EMFAC2017 Version:	1.0.2.27401
Run Date:	2/4/2021 14:04
Area:	Santa Clara (SF)
Analysis Year:	2022
Season:	Annual

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
Truck 1	0.015	0.478	0.522
Truck 2	0.02	0.94	0.046
Non-Truck	0.965	0.014	0.961

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	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph
PM2.5	0.010417	0.006915	0.004735	0.003408	0.002622	0.002145	0.001861	0.001715
TOG	0.220898	0.145348	0.097291	0.068555	0.051819	0.041294	0.034513	0.030252
Diesel PM	0.001756	0.001459	0.001108	0.000865	0.000743	0.000683	0.000662	0.000677

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

Pollutant Name	Emission Factor
TOG	1.418515

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	0.016811

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

Pollutant Name	Emission Factor
PM2.5	0.014871

END

Mantelli Drive Traffic Emissions and Health Risk Calculations

Analysis Year = ***2022***

Vehicle Type	2019 Caltrans Vehicles (veh/day)	2022 Vehicles (veh/day)
Total	**10,485**	**10,800**

Increase From 2019	1.03
Vehicles/Direction	**5,400**
Avg Vehicles/Hour/Direction	225

Traffic Data Year = ***2019***

Caltrans AADT (2017) & Truck %s (2018)	AADT Total
Existing Mantelli Drive	10,485

Percent of Total Vehicles

Traffic Increase per Year (%) = *1.00%*

Cottages at Kern, Gilroy, CA - On- and Off-Site Residential
Cumulative Operation - Mantelli Drive
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions
Year = 2022

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_MAN	Mantelli Drive Eastbound	EB	2	315.1	0.20	13.3	43.7	3.4	35	5,400
DPM_WB_MAN	Mantelli Drive Westbound	WB	2	343.3	0.21	13.3	43.7	3.4	35	5,400
									Total	10,800

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.00066			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and DPM Emissions - DPM_EB_MAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	3.91%	211	7.60E-06	9	6.44%	348	1.25E-05	17	5.52%	298	1.07E-05
2	2.59%	140	5.03E-06	10	7.25%	391	1.41E-05	18	3.34%	180	6.48E-06
3	2.82%	152	5.48E-06	11	6.33%	342	1.23E-05	19	2.42%	130	4.70E-06
4	3.39%	183	6.60E-06	12	6.90%	373	1.34E-05	20	0.92%	50	1.79E-06
5	2.19%	118	4.25E-06	13	6.27%	338	1.22E-05	21	2.99%	161	5.81E-06
6	3.39%	183	6.60E-06	14	6.15%	332	1.20E-05	22	4.14%	224	8.05E-06
7	6.10%	329	1.19E-05	15	5.12%	276	9.95E-06	23	2.47%	134	4.81E-06
8	4.66%	252	9.06E-06	16	3.85%	208	7.49E-06	24	0.86%	47	1.68E-06
								Total		5,400	

2022 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_WB_MAN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	3.91%	211	8.28E-06	9	6.44%	348	1.36E-05	17	5.52%	298	1.17E-05
2	2.59%	140	5.48E-06	10	7.25%	391	1.53E-05	18	3.34%	180	7.06E-06
3	2.82%	152	5.97E-06	11	6.33%	342	1.34E-05	19	2.42%	130	5.12E-06
4	3.39%	183	7.19E-06	12	6.90%	373	1.46E-05	20	0.92%	50	1.95E-06
5	2.19%	118	4.63E-06	13	6.27%	338	1.33E-05	21	2.99%	161	6.33E-06
6	3.39%	183	7.19E-06	14	6.15%	332	1.30E-05	22	4.14%	224	8.77E-06
7	6.10%	329	1.29E-05	15	5.12%	276	1.08E-05	23	2.47%	134	5.24E-06
8	4.66%	252	9.87E-06	16	3.85%	208	8.16E-06	24	0.86%	47	1.83E-06
								Total		5,400	

Cottages at Kern, Gilroy, CA - On- and Off-Site Residential
Cumulative Operation - Mantelli Drive
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2022

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_MAN	Mantelli Drive Eastbound	EB	2	315.1	0.20	13.3	44	1.3	35	5,400
PM2.5_WB_MAN	Mantelli Drive Westbound	WB	2	343.3	0.21	13.3	44	1.3	35	5,400
									Total	10,800

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.001861			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_EB_MAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	6.29E-06	9	7.11%	384	3.89E-05	17	7.39%	399	4.04E-05
2	0.42%	23	2.29E-06	10	4.39%	237	2.40E-05	18	8.17%	441	4.47E-05
3	0.41%	22	2.24E-06	11	4.67%	252	2.55E-05	19	5.70%	308	3.11E-05
4	0.27%	14	1.46E-06	12	5.89%	318	3.22E-05	20	4.27%	231	2.34E-05
5	0.50%	27	2.73E-06	13	6.15%	332	3.36E-05	21	3.26%	176	1.78E-05
6	0.91%	49	4.95E-06	14	6.03%	326	3.30E-05	22	3.30%	178	1.80E-05
7	3.79%	205	2.07E-05	15	7.01%	378	3.83E-05	23	2.46%	133	1.34E-05
8	7.76%	419	4.24E-05	16	7.13%	385	3.90E-05	24	1.86%	101	1.02E-05
								Total		5,400	

2022 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_WB_MAN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	62	6.85E-06	9	7.11%	384	4.24E-05	17	7.39%	399	4.40E-05
2	0.42%	23	2.50E-06	10	4.39%	237	2.62E-05	18	8.17%	441	4.86E-05
3	0.41%	22	2.44E-06	11	4.67%	252	2.78E-05	19	5.70%	308	3.39E-05
4	0.27%	14	1.59E-06	12	5.89%	318	3.51E-05	20	4.27%	231	2.54E-05
5	0.50%	27	2.97E-06	13	6.15%	332	3.66E-05	21	3.26%	176	1.94E-05
6	0.91%	49	5.40E-06	14	6.03%	326	3.59E-05	22	3.30%	178	1.97E-05
7	3.79%	205	2.26E-05	15	7.01%	378	4.17E-05	23	2.46%	133	1.46E-05
8	7.76%	419	4.62E-05	16	7.13%	385	4.25E-05	24	1.86%	101	1.11E-05
								Total		5,400	

Cottages at Kern, Gilroy, CA - On- and Off-Site Residential
Cumulative Operation - Mantelli Drive
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2022

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_MAN	Mantelli Drive Eastbound	EB	2	315.1	0.20	13.3	44	1.3	35	5,400
TEXH_WB_MAN	Mantelli Drive Westbound	WB	2	343.3	0.21	13.3	44	1.3	35	5,400
									Total	10,800

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle (g/VMT)	0.03451			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_EB_MAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	1.17E-04	9	7.11%	384	7.21E-04	17	7.39%	399	7.49E-04
2	0.42%	23	4.25E-05	10	4.39%	237	4.45E-04	18	8.17%	441	8.28E-04
3	0.41%	22	4.15E-05	11	4.67%	252	4.73E-04	19	5.70%	308	5.77E-04
4	0.27%	14	2.70E-05	12	5.89%	318	5.97E-04	20	4.27%	231	4.33E-04
5	0.50%	27	5.06E-05	13	6.15%	332	6.23E-04	21	3.26%	176	3.30E-04
6	0.91%	49	9.19E-05	14	6.03%	326	6.12E-04	22	3.30%	178	3.35E-04
7	3.79%	205	3.85E-04	15	7.01%	378	7.10E-04	23	2.46%	133	2.49E-04
8	7.76%	419	7.87E-04	16	7.13%	385	7.23E-04	24	1.86%	101	1.89E-04
								Total		5,400	

2022 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_WB_MAN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	62	1.27E-04	9	7.11%	384	7.85E-04	17	7.39%	399	8.16E-04
2	0.42%	23	4.63E-05	10	4.39%	237	4.85E-04	18	8.17%	441	9.02E-04
3	0.41%	22	4.52E-05	11	4.67%	252	5.15E-04	19	5.70%	308	6.29E-04
4	0.27%	14	2.95E-05	12	5.89%	318	6.51E-04	20	4.27%	231	4.72E-04
5	0.50%	27	5.51E-05	13	6.15%	332	6.79E-04	21	3.26%	176	3.60E-04
6	0.91%	49	1.00E-04	14	6.03%	326	6.66E-04	22	3.30%	178	3.64E-04
7	3.79%	205	4.19E-04	15	7.01%	378	7.74E-04	23	2.46%	133	2.71E-04
8	7.76%	419	8.57E-04	16	7.13%	385	7.88E-04	24	1.86%	101	2.06E-04
								Total		5,400	

Cottages at Kern, Gilroy, CA - On- and Off-Site Residential
Cumulative Operation - Mantelli Drive
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2022

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_MAN	Mantelli Drive Eastbound	EB	2	315.1	0.20	13.3	44	1.3	35	5,400
TEVAP_WB_MAN	Mantelli Drive Westbound	WB	2	343.3	0.21	13.3	44	1.3	35	5,400
									Total	10,800

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	35			
Emissions per Vehicle per Hour (g/hour)	1.41852			
Emissions per Vehicle per Mile (g/VMT)	0.04053			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_EB_MAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	1.37E-04	9	7.11%	384	8.47E-04	17	7.39%	399	8.79E-04
2	0.42%	23	4.99E-05	10	4.39%	237	5.23E-04	18	8.17%	441	9.72E-04
3	0.41%	22	4.87E-05	11	4.67%	252	5.55E-04	19	5.70%	308	6.78E-04
4	0.27%	14	3.17E-05	12	5.89%	318	7.01E-04	20	4.27%	231	5.09E-04
5	0.50%	27	5.94E-05	13	6.15%	332	7.32E-04	21	3.26%	176	3.88E-04
6	0.91%	49	1.08E-04	14	6.03%	326	7.18E-04	22	3.30%	178	3.93E-04
7	3.79%	205	4.52E-04	15	7.01%	378	8.34E-04	23	2.46%	133	2.92E-04
8	7.76%	419	9.24E-04	16	7.13%	385	8.49E-04	24	1.86%	101	2.22E-04
								Total		5,400	

2022 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_WB_MAN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	62	1.49E-04	9	7.11%	384	9.22E-04	17	7.39%	399	9.58E-04
2	0.42%	23	5.43E-05	10	4.39%	237	5.70E-04	18	8.17%	441	1.06E-03
3	0.41%	22	5.30E-05	11	4.67%	252	6.05E-04	19	5.70%	308	7.39E-04
4	0.27%	14	3.46E-05	12	5.89%	318	7.64E-04	20	4.27%	231	5.54E-04
5	0.50%	27	6.48E-05	13	6.15%	332	7.97E-04	21	3.26%	176	4.23E-04
6	0.91%	49	1.18E-04	14	6.03%	326	7.82E-04	22	3.30%	178	4.28E-04
7	3.79%	205	4.92E-04	15	7.01%	378	9.09E-04	23	2.46%	133	3.19E-04
8	7.76%	419	1.01E-03	16	7.13%	385	9.25E-04	24	1.86%	101	2.42E-04
								Total		5,400	

Cottages at Kern, Gilroy, CA - On- and Off-Site Residential
Cumulative Operation - Mantelli Drive
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2022

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_MAN	Mantelli Drive Eastbound	EB	2	315.1	0.20	13.3	44	1.3	35	5,400
FUG_WB_MAN	Mantelli Drive Westbound	WB	2	343.3	0.21	13.3	44	1.3	35	5,400
									Total	10,800

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	35			
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)	0.01487			
Total Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.03379			

Emisson Factors from CT-EMFAC2017

2022 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_EB_MAN

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	1.15%	62	1.14E-04	9	7.11%	384	7.06E-04	17	7.39%	399	7.33E-04
2	0.42%	23	4.16E-05	10	4.39%	237	4.36E-04	18	8.17%	441	8.11E-04
3	0.41%	22	4.06E-05	11	4.67%	252	4.63E-04	19	5.70%	308	5.65E-04
4	0.27%	14	2.65E-05	12	5.89%	318	5.85E-04	20	4.27%	231	4.24E-04
5	0.50%	27	4.96E-05	13	6.15%	332	6.10E-04	21	3.26%	176	3.23E-04
6	0.91%	49	8.99E-05	14	6.03%	326	5.99E-04	22	3.30%	178	3.28E-04
7	3.79%	205	3.77E-04	15	7.01%	378	6.95E-04	23	2.46%	133	2.44E-04
8	7.76%	419	7.70E-04	16	7.13%	385	7.08E-04	24	1.86%	101	1.85E-04
								Total		5,400	

2022 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_WB_MAN

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	1.15%	62	1.24E-04	9	7.11%	384	7.69E-04	17	7.39%	399	7.98E-04
2	0.42%	23	4.53E-05	10	4.39%	237	4.75E-04	18	8.17%	441	8.83E-04
3	0.41%	22	4.42E-05	11	4.67%	252	5.05E-04	19	5.70%	308	6.16E-04
4	0.27%	14	2.88E-05	12	5.89%	318	6.37E-04	20	4.27%	231	4.62E-04
5	0.50%	27	5.40E-05	13	6.15%	332	6.65E-04	21	3.26%	176	3.52E-04
6	0.91%	49	9.80E-05	14	6.03%	326	6.52E-04	22	3.30%	178	3.57E-04
7	3.79%	205	4.10E-04	15	7.01%	378	7.58E-04	23	2.46%	133	2.66E-04
8	7.76%	419	8.39E-04	16	7.13%	385	7.71E-04	24	1.86%	101	2.01E-04
								Total		5,400	

Cottages at Kern, Gilroy, CA - Mantelli Drive Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2022
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location
Meteorological Conditions	
BAQMD San Martin Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00012	0.00499	0.00586

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	0.00515	0.00488	0.00027

Cottages at Kern, Gilroy, CA - Mantelli Dirve Traffic Cancer Risk
Impacts at Construction Residential 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 $(mg/kg\text{-}day)^{-1}$
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 $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age –>	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
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

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0001	0.0050	0.0059	0.002	0.000	0.0000	0.00
1	1	0 - 1	2021	10	0.0001	0.0050	0.0059	0.020	0.005	0.0003	0.02
2	1	1 - 2	2022	10	0.0001	0.0050	0.0059	0.020	0.005	0.0003	0.02
3	1	2 - 3	2023	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
4	1	3 - 4	2024	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
5	1	4 - 5	2025	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
6	1	5 - 6	2026	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
7	1	6 - 7	2027	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
8	1	7 - 8	2028	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
9	1	8 - 9	2029	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
10	1	9 - 10	2030	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
11	1	10 - 11	2031	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
12	1	11 - 12	2032	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
13	1	12 - 13	2033	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
14	1	13 - 14	2034	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
15	1	14 - 15	2035	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
16	1	15 - 16	2036	3	0.0001	0.0050	0.0059	0.003	0.001	0.0001	0.00
17	1	16-17	2037	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
18	1	17-18	2038	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
19	1	18-19	2039	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
20	1	19-20	2040	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
21	1	20-21	2041	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
22	1	21-22	2042	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
23	1	22-23	2043	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
24	1	23-24	2044	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
25	1	24-25	2045	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
26	1	25-26	2046	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
27	1	26-27	2047	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
28	1	27-28	2048	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
29	1	28-29	2049	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
30	1	29-30	2050	1	0.0001	0.0050	0.0059	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.09	0.021	0.001	**0.1**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00002	0.005	0.01

* Third trimester of pregnancy

Cottages at Kern, Gilroy, CA - Mantelli Drive Traffic - TACs & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
On-Site 1st Floor Residential Receptors (1.5 meter receptor height)

Emission Year	2022
Receptor Information	Maximum On-Site Receptor
Number of Receptors	42
Receptor Height	1.5 meters
Receptor Distances	20 meter grid spacing
Meteorological Conditions	
BAQMD San Martin Airport Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Winf Direction	Variable

1st Floor Project Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.00023	0.01012	0.01189

1st Floor Project PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.01045	0.0099	0.00055

Cottages at Kern, Gilroy, CA - Mantelli Dirve Traffic Cancer Risk
Impacts at On-Site 1st Floor Residential Receptors - 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 $(mg/kg\text{-}day)^{-1}$
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 $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
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

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0002	0.0101	0.0119	0.003	0.001	0.0001	0.00
1	1	0 - 1	2021	10	0.0002	0.0101	0.0119	0.038	0.009	0.0007	0.05
2	1	1 - 2	2022	10	0.0002	0.0101	0.0119	0.038	0.009	0.0007	0.05
3	1	2 - 3	2023	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
4	1	3 - 4	2024	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
5	1	4 - 5	2025	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
6	1	5 - 6	2026	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
7	1	6 - 7	2027	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
8	1	7 - 8	2028	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
9	1	8 - 9	2029	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
10	1	9 - 10	2030	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
11	1	10 - 11	2031	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
12	1	11 - 12	2032	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
13	1	12 - 13	2033	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
14	1	13 - 14	2034	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
15	1	14 - 15	2035	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
16	1	15 - 16	2036	3	0.0002	0.0101	0.0119	0.006	0.001	0.0001	0.01
17	1	16-17	2037	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
18	1	17-18	2038	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
19	1	18-19	2039	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
20	1	19-20	2040	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
21	1	20-21	2041	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
22	1	21-22	2042	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
23	1	22-23	2043	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
24	1	23-24	2044	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
25	1	24-25	2045	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
26	1	25-26	2046	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
27	1	26-27	2047	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
28	1	27-28	2048	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
29	1	28-29	2049	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
30	1	29-30	2050	1	0.0002	0.0101	0.0119	0.001	0.000	0.0000	0.00
Total Increased Cancer Risk								0.17	0.043	0.003	**0.2**

Maximum Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.00005	0.01	0.01

* Third trimester of pregnancy

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 4,883,566.39 ft²

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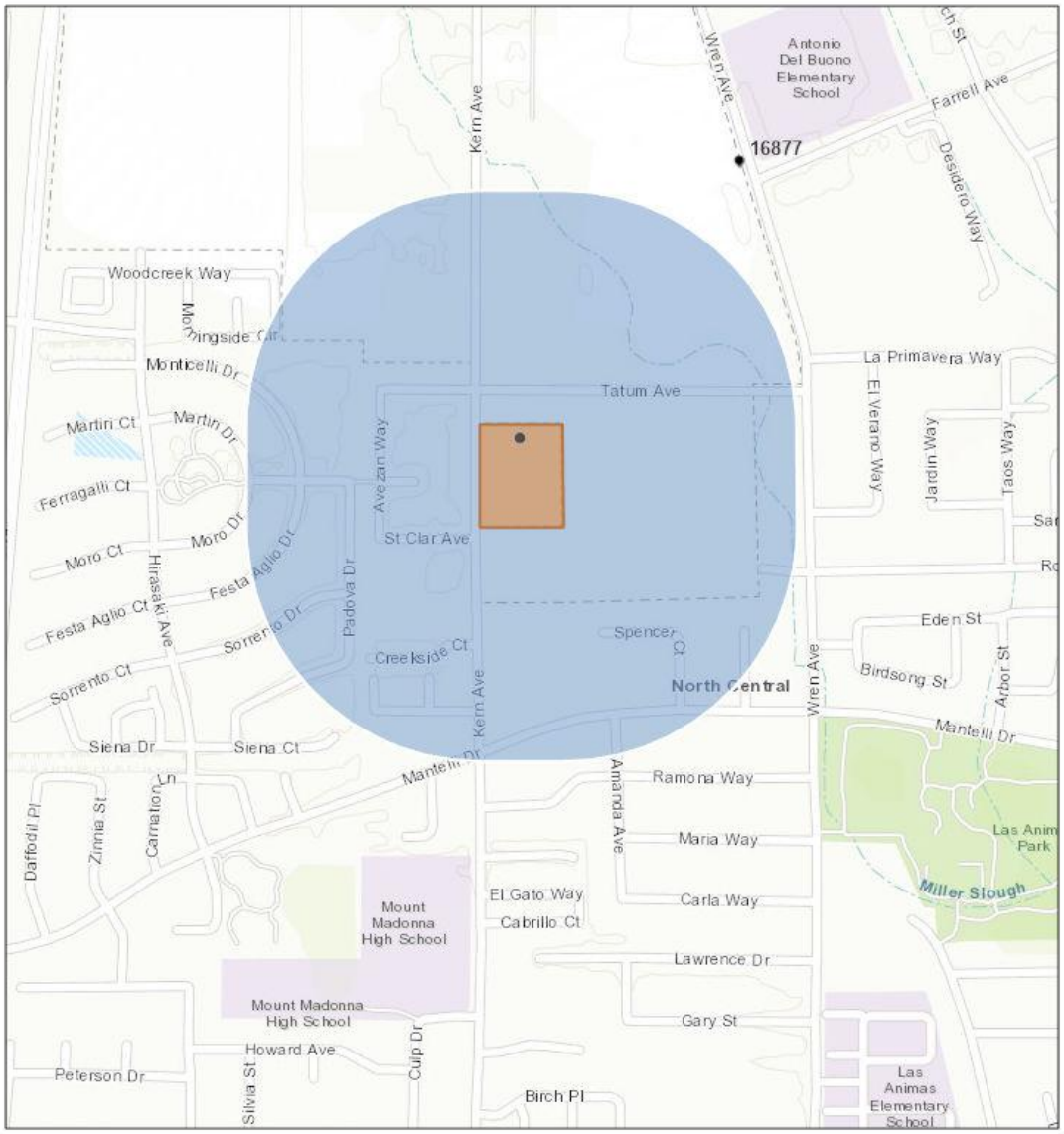

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	0	N/A	N/A

Note: The estimated risk and hazard impacts from these sources would be expected to be substantially lower when site specific Health Risk Screening Assessments are conducted.

The screening level map is not recommended for evaluating sensitive land uses such as schools, senior centers, day cares, and health facilities.

Appendix C

Biological Resources Assessments

BIOLOGICAL RESOURCE ASSESSMENT
FOR
KERN AND ST. CLAR PROJECT

9130 KERN AVENUE
GILROY, CALIFORNIA

PREPARED BY:

Coast Ridge Ecology
1410 31st Avenue
San Francisco, CA 94122

February 2021

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LIST OF FIGURES

APPENDICES

I. SUMMARY

This report provides a biological resource assessment for the Kern and St. Clar Project, a housing development project located at 9130 Kern Avenue within the city limits of Gilroy, California. The property is located approximately 200 feet north of the intersection of Kern Avenue and St. Clar Avenue (Figure 1). The project consists of the construction of 29 single-family detached homes. The project site is bounded by Kern Avenue to the west, residences to the north and east, and farmland to the south.

The General Plan designation for the proposed project is Medium Density Residential (8 to 16 dwelling units per acre), and the designated zoning district is R3. The project would develop 29 single-family residential units on a 3.57-acre site. The project includes approximately 5,400 square feet of park and a C3 bioretention basin, and three surface parking spaces located adjacent to the park area. The project will also involve curb and travel lane improvements for the portion of Kern Avenue that is adjacent to the project site. Access to the project site would be provided via a new residential street extending east from Kern Avenue, approximately 200 feet south of Tatum Avenue. All trees on site are proposed for removal.

Coast Ridge Ecology biologists Patrick Kobernus and Logic McDaniel surveyed the site and surrounding areas for biological resources on January 25, 2021. All plant and animal species observed were documented and plant communities and habitats were assessed for their potential to support special status species. The California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) was consulted for known occurrences of sensitive plant, animal, and natural plant communities of concern found within the Gilroy and eight surrounding 7.5' USGS topographic quadrangles (CNDDB, 2021).

The primary plant community located within the project impact area is nonnative wild oat and annual brome grasslands (Alliance: *Avena spp. – Bromus spp.*) (CNPS, 2021). This plant community is primarily dominated by nonnative annual grasses including Italian rye grass (*Festuca perennis*) and wild oat (*Avena spp.*), as well as nonnative forbs such as summer mustard (*Hirschfeldia incana*), hairy vetch (*Vicia villosa*) and wild radish (*Raphanus sativus*). A few other non-natives are found throughout the site, including yellow star thistle (*Centaurea solstitialis*), and Harding grass (*Phalaris aquatica*). A cluster of mature tree of heaven (*Ailanthus altissima*) is present on the southern edge of the site, as well as several saplings which are spreading into the grassland. The northwest corner is lined with a few coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and Bailey acacia (*Acacia baileyana*) trees. No rare plants or sensitive plant communities were observed and none are expected to have potential to occur on site.

There is a low potential for special status birds including raptors to nest on or near the site due to the lack of suitable nest trees. Suitable burrows for California tiger salamander, American badger and western burrowing owl are also absent from the site. Common bird species protected under the Migratory Bird Treaty Act may nest within the trees and/or grassland on the property. Nine special-status wildlife species have a low potential for occurrence. This includes two listed amphibians, six special status birds, and one special status mammal. These are:

California red-legged frog (*Rana draytonii*), FT, SSC[1]
California tiger salamander (*Ambystoma californiense*), FT, ST

[1] SSC=California Species of Special Concern, FP=California Fully-Protected Species, FT=Federally Threatened, ST=State Threatened

Golden eagle (*Aquila chrysaetos*), FP
White-tailed kite (*Elanus leucurus*), FP
Burrowing Owl (*Athene cunicularia*), SSC
Grasshopper sparrow (*Ammodramus savannarum*), SSC
Loggerhead shrike (*Lanius ludovicianus*), SSC
Great blue heron (*Ardea herodias*), SSC
American badger (*Taxidea taxus*), SSC

The project is located within the Santa Clara Valley Habitat Plan Area (VHP), and an application for take coverage of special status species covered under the Plan has been prepared for the project (H.T. Harvey and Associates, 2020)[2]. Take coverage for special status species covered under the VHP would be obtained for the property through participation in the VHP. All listed species determined in this report to have a low potential for occurrence are covered under the Santa Clara Valley Habitat Plan.

The following recommendations are provided to avoid or minimize any impacts to biological resources on the site.

A. California Red-Legged Frog, California tiger salamander, and American Badger

California red-legged frog, California tiger salamander and American badger have a low potential for occurrence within the project area. A pre-construction survey conducted by a qualified biologist within 48 hours prior to vegetation removal or ground disturbance is recommended in order to minimize any impacts to these special status species. Based on USFWS and/or CDFW requirements for similar projects, additional minimization and avoidance measures could include installation and monitoring of exclusionary fencing, an education training for all contractors working on site, and on-site monitoring by a qualified biologist or trained biological monitor.

B. Nesting Birds

Potential bird nesting habitat exists on the project site. If the project is conducted during the nesting bird season, between February 1st and August 31st, a preconstruction nesting bird survey is recommended. If active bird nests are detected, a suitable nest buffer should be installed (typically between 50 to 250 feet, depending on species). If project activities occur outside of the nesting bird season, preconstruction surveys for nesting birds are not necessary.

C. Wetlands

Based on the VHP application prepared by H.T. Harvey and Associates, permanent impacts to seasonal wetlands (0.044 acres) will occur from grading of the site for project construction. Permanent impacts to 3.6 acres of California annual grassland will result from grading and construction of the residential development, internal roads, and landscaping. No temporary impacts will occur as a result of the project (H.T. Harvey and Associates, 2020). Permits from the US Army Corps of Engineers and California Regional Water Quality Control Board would need to be obtained to fill the seasonal wetland on site.

[2] Kern and St. Clar Project, Santa Clara Valley Habitat Plan Application for Private Projects Supplemental Attachment (Project # 4447 -02, prepared by H.T. Harvey & Associates, September 2020.

II. PROJECT LOCATION

The project area is located in an approximately 3.57-acre parcel (APN 790-17-002 and 790-17-003) in Gilroy, California. The site is an undeveloped and currently vacant, relatively level parcel with limited low-lying ground vegetation.

III. PROJECT DESCRIPTION

The project consists of the construction of 29 single-family detached homes. The project site is bounded by Kern Avenue to the west, residences to the north and east, and farmland to the south.

The General Plan designation for the proposed project is Medium Density Residential (8 to 16 dwelling units per acre), and the designated zoning district is R3. The project would develop 29 single-family residential units on a 3.57-acre site. The project includes approximately 5,400 square feet of park and a C3 bioretention basin, and 3 surface parking spaces located adjacent to the park area. The project will also involve curb and travel lane improvements for the portion of Kern Avenue that is adjacent to the project site. Access to the project site would be provided via a new residential street extending east from Kern Avenue, approximately 200 feet south of Tatum Avenue. All trees on site are proposed for removal.

IV. METHODS

Coast Ridge Ecology biologists Patrick Kobernus and Logic McDaniel surveyed the site and surrounding areas for biological resources on January 25, 2021. Weather at the time of the surveys was cool with air temperature in the 50's (F), with a gentle breeze and partly cloudy skies. All plant and animal species observed were documented and plant communities and habitats were assessed for their potential to support special status species. The California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) was consulted for known occurrences of sensitive plant, animal, and natural plant communities of concern found within the Gilroy and eight surrounding 7.5' USGS topographic quadrangles (CNDDB, 2021). Data from CNDDB, California Native Plant Society (CNPS) On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS, 2021), and other relevant literature and databases, knowledge of regional biota, and observations made during the field survey, were used to evaluate on-site habitat suitability for special status plant and wildlife species within the property.

V. EXISTING SETTING

The project site is located on a vacant parcel of land just north of the intersection of Kern Avenue and St. Clar Avenue in Gilroy, California. The surrounding area consists of single family residential properties to the north and east, and farmland to the south. The topography of the project site is mostly flat with a small hillock in the center of the parcel. A seasonal wetland is present in the narrow swale bisecting the center of the property. A twelve-inch wide culvert runs down the length of the west side of the property along Kern Avenue. Elevation of the project site is approximately 208 feet.

Soils

There are three soil types present within the project area: San Ysidro loam, Clear Lake clay, and Pleasanton gravelly loam. San Ysidro loam is a moderately well-drained soil made up of clayey alluvium derived from sedimentary rock. Clear Lake clay is a poorly-drained soil made up of clayey alluvium derived from metamorphic and sedimentary rock. Pleasanton gravelly loam is a well-drained soil made up of alluvium (NRCS, 2021). There are no serpentine, calcareous, dune or wetland soils on the property that could support rare plant species that are specific to these soil types.

Hydrology

A seasonal wetland is present within a narrow, shallow swale (0.044 acre) bisecting the center of the property. This swale is approximately 3 feet wide, and 1 foot deep, and is dominated by grassland vegetation. A twelve-inch wide culvert runs down the length of the west side of the property along Kern Avenue. This culvert transports roadside runoff. There are no ponds or permanent wetlands at the site or in the surrounding areas.

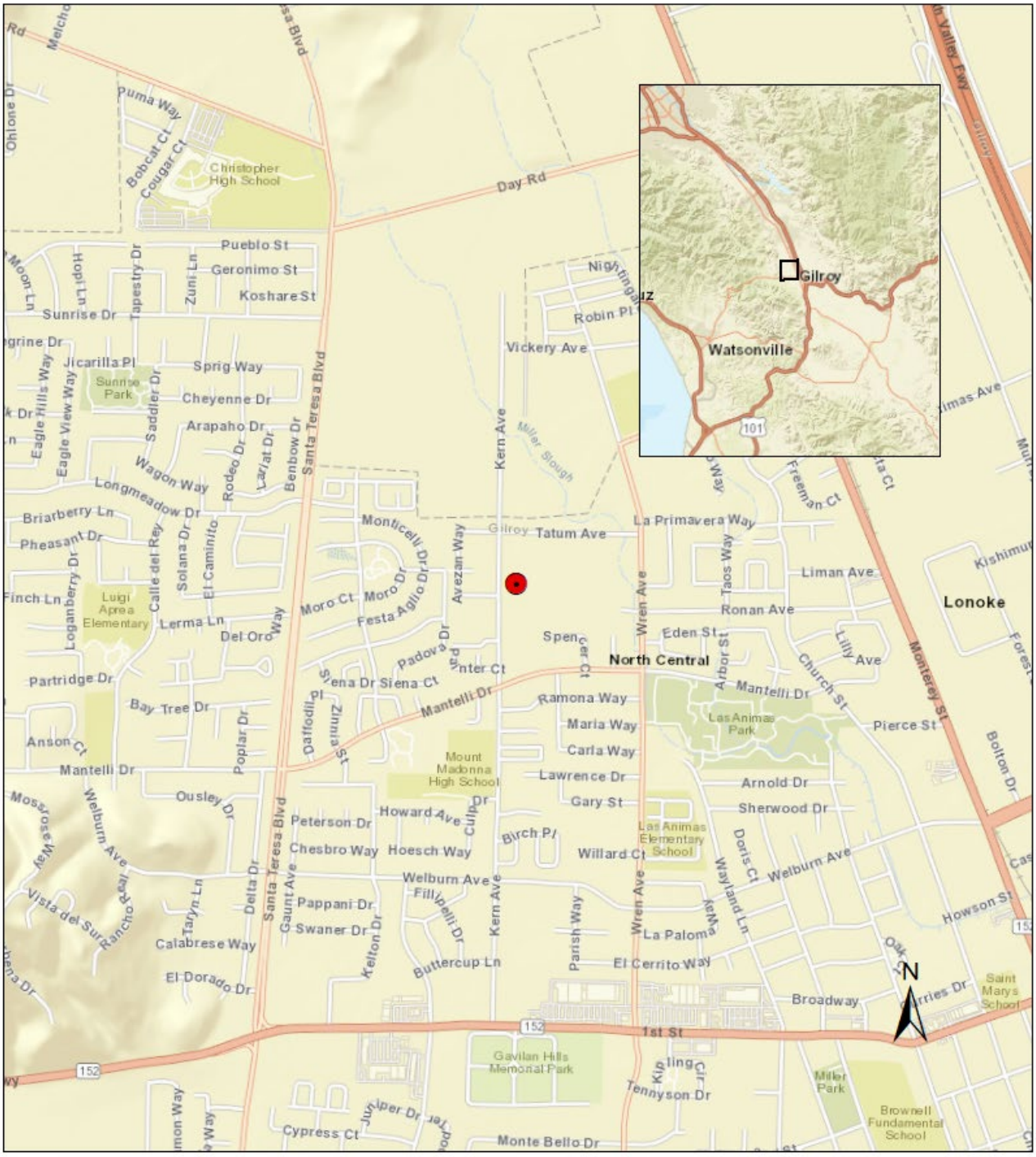

Figure 1: Project Location Map
9130 Kern Avenue, Gilroy, CA

Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

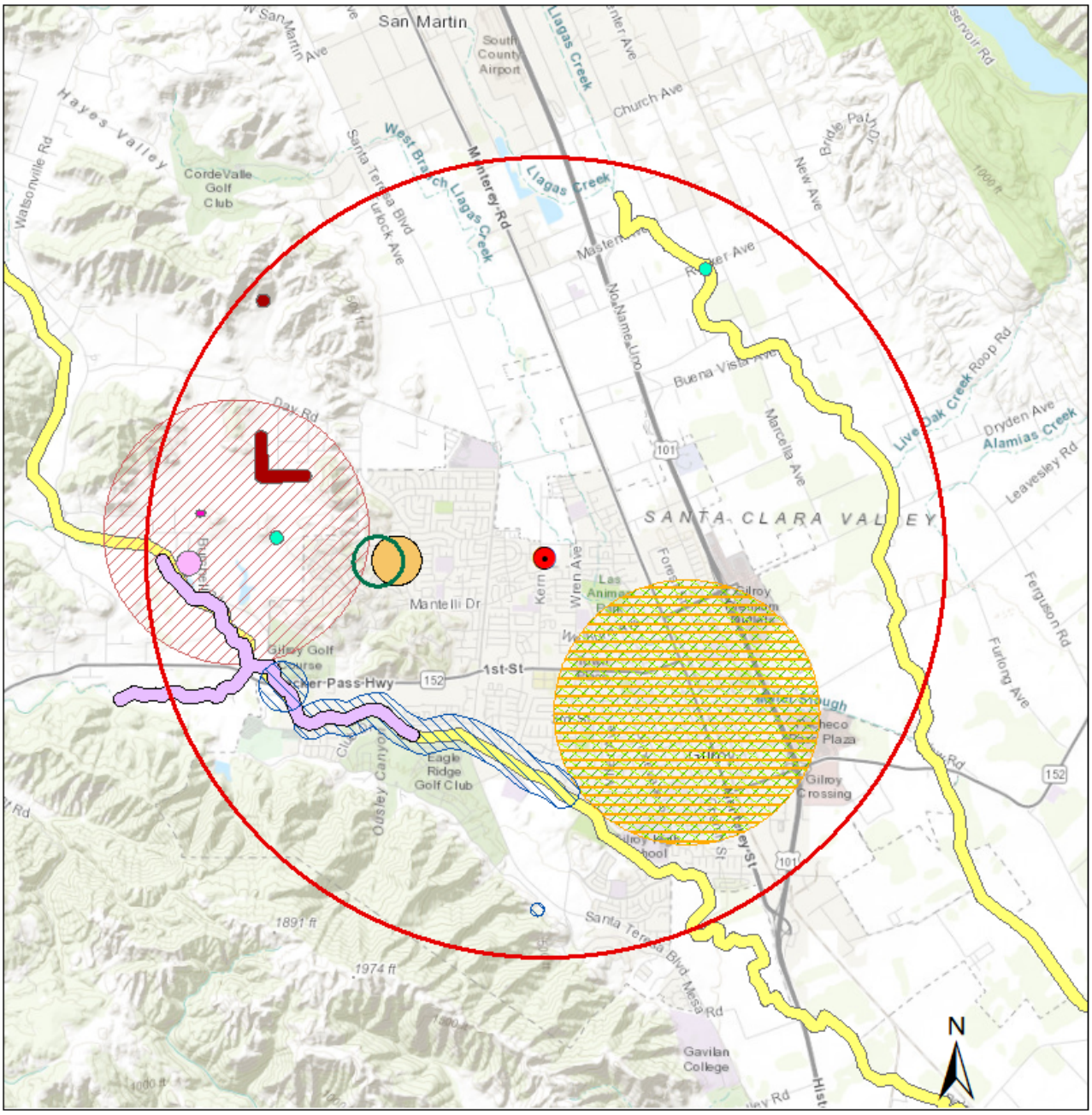

Figure 2: CNDDB Occurrence Map
9130 Kern Avenue, Gilroy, CA
Source: CNDDB (February 2021)

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Miles
0 0.5 1 2 3

- Project Location
- 3 mile buffer
- American badger
- California red-legged frog
- California tiger salamander
- Hoover's button-celery
- Loma Prieta hoita
- Monterey hitch
- Santa Clara Valley dudleya
- Arcuate bush-mallow
- Burrowing owl
- Hoary bat
- Pallid bat
- Steelhead - south-central CA coast DPS
- Western pond turtle
- White-tailed kite

*Concealed records not shown

Figure 3: Tree and Wetland Location Map
9130 Kern Avenue, Gilroy, CA

Additional trees shown on Figure are the invasive Tree of Heaven.

VI. PLANT COMMUNITIES, HABITAT TYPES, AND WILDLIFE

Vegetation

One plant community is located within the project impact area: wild oats and annual brome grasslands (Alliance: *Avena spp. – Bromus spp.*) (CNPS, 2021). This plant community is primarily dominated by non-native grasses including Italian rye grass (*Festuca perennis*) and wild oat (*Avena spp.*), as well as non-native forbs such as summer mustard (*Hirschfeldia incana*), hairy vetch (*Vicia villosa*) and wild radish (*Raphanus sativus*). Several other non-native plant species are found throughout the site, including yellow star thistle (*Centaurea solstitialis*), harding grass (*Phalaris aquatica*), and curly dock (*Rumex crispus*). A cluster of mature tree of heaven (*Ailanthus altissima*) is present on the southern edge of the site, as well as several saplings which are spreading into the grassland. The northwest corner of the site is lined with a few coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and Bailey acacia (*Acacia baileyana*).

There is a small seasonal wetland on the site that occurs in the narrow swale bisecting the center of the property. The vegetation in the swale is dominated by Italian rye grass and Mediterranean barley (*Hordeum murinum*). Other common species in this area include common vetch (*Vicia sativa*), wild lettuce (*Lactuca serriola*), and wild chicory (*Cichorium intybus*).

A list of all plant species observed within the survey area is provided in Table 1 below.

Table 1: Plant Species Observed During Biological Survey

Common Name	Scientific Name	Native?
Bailey acacia	*Acacia baileyana*	N
Tree of heaven	*Ailanthus altissima*	N
Wild oat	*Avena spp.*	N
Wild chicory	*Cichorium intybus**	N
Coyote brush	*Baccharis pilularis*	Y
Yellow star thistle	*Centaurea solstitialis*	N
Annual fireweed	*Epilobium brachycarpum*	Y
California poppy	*Eschscholzia californica*	Y
Italian rye grass	*Festuca perennis*	N
Crane's bill geranium	*Geranium molle*	N
Short podded mustard	*Hirschfeldia incana*	N
Mediterranean barley	*Hordeum murinum**	N
Iris sp.	*Iris sp.*	N
Prickly lettuce	*Lactuca serriola*	N
Cheeseweed mallow	*Malva parvifora*	N
Harding grass	*Phalaria aquatica*	N
Ribwort	*Plantago lanceolata*	N
Coast live oak	*Quercus agrifolia*	Y
Valley oak	*Quercus lobata*	Y
Wild radish	*Raphanus sativus*	N

Common Name	Scientific Name	Native?
Curly dock	*Rumex crispus*	N
Black nightshade	*Solanum nigrum*	N
Common vetch	*Vicia sativa**	N
Hairy vetch	*Vicia villosa**	N
Bigleaf periwinkle	*Vinca major*	N

*Denotes additional plant species that occur at the project site that were not identifiable during the site survey on 1/25. These species were identified in a previous report by H.T. Harvey & Associates (H.T. Harvey & Associates 2020).

Wildlife

While the predominantly non-native annual grassland provides some foraging and dispersal habitat, its use is limited due to the extent of agricultural disturbance and surrounding suburban and urban land use. The lack of cover on site as well as a lack of animal burrows limits the potential for nesting and refuge. Very minimal burrowing rodent activity (Botta's pocket gopher (*Thomomys bottae*)) was evident at the site on the small hillock. Very little terrestrial wildlife was detected during the site survey, however Sierran treefrogs (*Pseudacris sierra*) were heard vocalizing near a small culvert that extends the length of Kern Avenue however no water was present at the time of survey.

The open grassland and occasional large trees provide good foraging and potentially nesting habitat for native bird species. Several species of birds, including grassland specialists such as western meadowlark (*Sturnella neglecta*), were observed during the site survey and are listed in **Table 2**. Some bats may forage over the grassland, but there is a lack of suitable roosting habitat on site. Larger mammals such as mule deer (*Odocoileus hemionus*) may also use the project area as a foraging site.

Table 2: Wildlife Species Observed During Biological Survey

Common Name	Scientific Name
Amphibians	
Sierran treefrog	*Pseudacris sierra*
Birds	
Anna's hummingbird	*Calypte anna*
Turkey vulture	*Cathartes aura*
Rock pigeon	*Columba livia*
American crow	*Corvus brachyrhynchos*
Brewer's blackbird	*Euphagus cyanocephalus*
House finch	*Haemorhous mexicanus*
House sparrow	*Passer domesticus*
Vesper sparrow	*Pooecetes gramineus*
Ruby-crowned kinglet	*Regulus calendula*
Black phoebe	*Sayornis nigricans*
Yellow-rumped warbler	*Setophaga coronata*

Common Name	Scientific Name
Eurasian collared-dove	*Streptopelia decaocto*
Western meadowlark	*Sturnella neglecta*
Mammals	
Mule deer (scat)	*Odocoileus hemionus*
Botta's pocket gopher (burrows)	*Thomomys bottae*

Wildlife Movement Corridors

Wildlife movement corridors are important for wildlife that have large home range sizes, or require multiple habitat types for different parts of their life cycle (i.e. breeding, rearing, feeding, dispersal, and hibernation/aestivation) within a given region. Habitat linkages or corridors facilitate movement within discrete areas as well as movement in-between larger meta-populations in the region. Wildlife movement includes migration (i.e. usually one direction per season), inter-population movement (i.e. long-term genetic exchange) and small travel pathways (i.e. daily movement within an animal's home range).

The project area is unlikely to provide a movement corridor for terrestrial wildlife due to the surrounding residential development, as well as the lack of wildlife sign observed during the site survey. While the proposed development project would create a barrier to wildlife movement, the lack of suitable breeding, foraging, or other habitat in the project area suggests this would have a generally low impact on local species

VII. SPECIAL STATUS PLANTS, ANIMALS, AND NATURAL COMMUNITIES

The California Department of Fish and Wildlife (CDFW) Natural Diversity Data Base (CNDDB) maintains records of reported occurrences of sensitive plant, animal and natural plant communities of concern. CNDDB records provide useful information about what species have been found in a given project area, and what species may be expected in similar habitat types. An area that has not been surveyed or visited may support sensitive species that have not been discovered and reported, and may require site-specific surveys to rule out special status species occurrences. The U. S. Fish and Wildlife Service (USFWS), Sacramento, also maintains lists of listed species and other species of concern that may occur in or be affected by projects in a given USGS topographic quadrangle**.** Information on special status plant species was obtained from the CNPS On-line Inventory of Rare, Threatened, and Endangered Plants of California.

The CNDDB records for the Gilroy 7.5-minute topographic quadrangle and eight surrounding quadrangles were reviewed for sensitive element occurrences at the project site (CNDDB, 2021). The potential for the presence of each of these special status species is provided in **Appendix A**. **Figure 2** shows the location of the recorded occurrences of special status species within a three mile radius of the property.

Other special status species that were evaluated for potential for occurrence based on proximity to the site, or habitat utilization were included in **Appendix A**. Some special status species found exclusively within serpentine habitats, salt marsh habitat, coastal habitats including cliffs, lagoons and estuaries, and/or marine habitats were excluded from analysis due to the lack of these habitats on or adjacent to the property. Special status species that have a higher probability for occurrence onsite based on habitat types and/or recorded observations within three miles of the property are discussed in greater detail below.

There is a low potential for special status birds, including raptors, to nest on or near the site due to the lack of suitable nest trees. Suitable burrows for California tiger salamander, American badger and western burrowing owl are also absent from the site. Common bird species protected under the Migratory Bird Treaty Act may nest within the trees and/or grassland on the property. Nine special-status wildlife species have a low potential for occurrence. This includes two listed amphibians, six special status birds, and one special status mammal. These are:

California red-legged frog (*Rana draytonii*), FT, SSC[3]
California tiger salamander (*Ambystoma californiense*), FT, ST
Golden eagle (*Aquila chrysaetos*), FP
White-tailed kite (*Elanus leucurus*), FP
Burrowing Owl (*Athene cunicularia*), SSC
Grasshopper sparrow (*Ammodramus savannarum*), SSC
Loggerhead shrike (*Lanius ludovicianus*), SSC
Great blue heron (*Ardea herodias*), SSC
American badger (*Taxidea taxus*), SSC

[3] SSC=California Species of Special Concern, FP=California Fully-Protected Species, FT=Federally Threatened, ST=State Threatened

California Red-legged Frog (*Rana draytonii*)

The California red-legged frog (CRF) is a federally listed Threatened species and a California Species of Special Concern. California red-legged frogs are known to occur in slow-flowing streams, and marshes with heavily vegetated shores for breeding as well as grasslands, riparian woodland, oak woodland, and coniferous forests. Seasonal bodies of water are frequently occupied by red-legged frogs, and in some areas these may be critical for persistence. California red-legged frogs are known to sometimes disperse widely during autumn, winter, and spring rains. Juveniles use the wet periods to expand outward from their pond of origin and adults may move between aquatic areas. Frogs disperse through many types of upland vegetation and use a broader range of habitats outside of breeding season. CRF have been observed to move extensively and travel up to two miles or more between breeding ponds without apparent regard to topography, vegetation type, or riparian corridors (Bulger in litt.1998, *in* USFWS, 2002). CRF typically require a permanent water source with a minimum depth of 0.7 meters (2.5 feet) (USFWS, 2004).

The nearest California red-legged frog detection is located within a pond approximately 2 miles west of the project area (CNDDB, 2021). There is extensive suburban development between this location and the project site that would likely be an impassable barrier for this species. The seasonal wetland within the project area would not provide suitable breeding habitat for this species. There is a low potential for presence of this species on site due to a lack of suitable breeding ponds in the area and lack of recorded occurrences of the species in the watershed (CNDDB 2021).

California tiger salamander (*Ambystoma californiense*)

California tiger salamanders inhabit valley and foothill grasslands and the grassy understory of open woodlands, usually within one mile of water (Jennings and Hayes 1994). California tiger salamanders require two major habitat components: aquatic breeding sites such as ponds and vernal pools, and terrestrial aestivation or refuge sites (grasslands). California tiger salamanders will also less commonly inhabit oak woodland habitat (USFWS 2003), residing under leaf litter and logs or small mammal burrows, if present. The California tiger salamander is terrestrial as an adult and spends most of its time underground, primarily inhabiting ground squirrel burrows and occasionally occupying human-made underground structures. California tiger salamanders emerge during the rainy season to breed, laying their eggs primarily in vernal pools and other ephemeral ponds that fill in the winter and are often dry by summer (Loredo et al. 1996). They sometimes use permanent human-made ponds (e.g., stockponds), reservoirs, and small lakes, although they are much less likely to survive and reproduce in water bodies that support introduced fishes (Stebbins 1972; Zeiner et al. 1988). Adult salamanders migrate from upland habitats to aquatic breeding sites during the first major rainfall events of fall and early winter (typically at night) and return to upland habitats after breeding in the early spring. California tiger salamanders have an approximately 10 to 20 week-long developmental period (from egg to terrestrial form) and ponds must last into the early or late summer for the species to complete their development.

One record of California tiger salamander is recorded 2.8 miles south of the project area (CNDDB 2021). Extensive urbanization is located between this sighting and the project site that would likely be an impassable barrier for this species.

Special Status Mammals

American Badger (*Taxidea taxus)* is a California Species of Special Concern that occurs in grasslands and dry openings in shrub, forest, and herbaceous habitats with friable soils. No burrows for this species were found on the property however this species may forage in the area and has been detected within 1 mile of the site (CNDDB, 2021).

Three special status bat species have been documented to occur within a 3-mile radius of the site: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*) and hoary bat (*Lasiurus cinereus*). The project area consists of an open grassland with limited foraging habitat, no structures and very few trees. The trees on site lack necessary cavities or crevices that would provide suitable roosting habitat for bats. As such, no suitable bat roosting habitat is present within the project area.

Special Status Birds

Six special status bird species that occur within grassland habitats have a low potential of occurrence due to the lack of suitable nesting habitat at the site (**Appendix A**). No special status birds were observed within the project area during the site survey in January 2021.

Special Status Plants and Plant Communities

Within the Gilroy region, there are several special status plants on the CNPS Inventory of Rare and Endangered Plant Species. Most of these plants are associated with distinct or specialized habitat types: coastal prairie, chaparral, closed-cone coniferous forests, cismontane woodland, wetlands, sandy or serpentine soils, and streams and lakes. Most of these habitat types, soil associations or elevation requirements do not occur on the property.

None of the rare plant species on the CNPS Inventory were observed during the site visit, and none were identified as having potential for occurrence at the project site. No sensitive plant communities were identified on site during the field survey.

VIII. REGULATORY CONSIDERATIONS

Federal and state-listed species (endangered, threatened, and fully-protected) receive various levels of legal protection under the federal and state endangered species acts and the California Fish and Wildlife Code. The federal Migratory Bird Treaty Act of 1918 and Section 3500 of the California Fish and Wildlife Code protect active nests of migratory and other birds, and provide criminal penalties for take of hawks, owls, and take or disturbance of all bird nests or eggs. Potential impacts to other special status or otherwise sensitive species must be disclosed and evaluated pursuant to the California Environmental Quality Act (CEQA).

Wetlands

To meet the US Army Corps of Engineers (USACE) definition of wetland, an area must demonstrate three critical characteristics: wetland vegetation, wetland hydrology, and wetland soils (Federal Interagency Committee for Wetland Delineation, 1989). Additionally, to fall under jurisdiction of the USACE, a wetland must have some evident hydrological connection to other wetlands and/or waters of the United States. The US Fish and Wildlife Service definition of wetland is similar: at least periodically, the land must support predominantly hydrophytes; the substrate must be predominantly undrained hydric soil; or the substrate is non-soil that is saturated with water or covered by shallow water at some time during the growing season of the year (Cowardin, et al., 1979).

Based on the VHP application prepared by H.T. Harvey and Associates, permanent impacts to seasonal wetlands (0.044 acres) will occur from grading of the site for project construction. No temporary impacts will occur as a result of the project (H.T. Harvey and Associates, 2020). All applicable permits from federal, state and local regulations shall be obtained for project impacts to seasonal wetlands.

Federal and State Endangered Species Acts

The United States Endangered Species Act (ESA) is administered by the United States Fish and Wildlife Service (USFWS). The California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), and CEQA afford protection to species of concern included on state-maintained lists. The California Department of Fish and Wildlife (CDFW) has statutory responsibility for the protection of state listed species, and is a trustee agency under CEQA.

Both the federal and state endangered species acts provide protection for listed species. In particular, the federal act prohibits "take". "Take" is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a federally listed, endangered species of wildlife, or to attempt to engage in any such conduct." Take not specifically allowed by federal permit under Section 10(a)(1)(B) of the ESA is subject to enforcement through civil or criminal proceedings under Section 9 of the ESA.

While "take" is easily understood in the sense of deliberately capturing or killing individual animals, federal regulations also define take to include the incidental destruction of animals in the course of an otherwise lawful activity, such as habitat loss due to development. Under those rules the definition of take includes significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR Section 17.3).

Section 10(a) of the ESA permits the incidental take of an endangered or threatened species. Similarly, Section 2081 of the CDFW Code or use of the CESA allows the Department to enter into management agreements that make lawful activities which may otherwise result in habitat loss or take of individuals of a state listed species.

The project site is not located within USFWS designated Critical Habitat (CH)[4]. The closest Critical Habitat to the site is 2.0 miles northwest (California tiger salamander) and 3.4 miles northwest (Bay Checkerspot butterfly (*Euphydras editha bayensis*).

Species of Special Concern

The California Department of Fish and Wildlife has designated certain animal species as "Species of Special Concern" due to concerns about declining population levels, limited ranges, and continuing threats that have made these species vulnerable to extinction. The goal of this designation is to bring attention to these species in the hope that their population decline will be halted through mitigation or project redesign to avoid impact. Species of special concern are protected only through environmental review of projects under CEQA. The California Department of Fish and Wildlife is a trustee agency and is solicited for its comments during the CEQA process.

Santa Clara Valley Habitat Plan

The Santa Clara Valley Habitat Plan provides a streamlined approach for requesting and receiving endangered species permits for development and conservation projects. It concerns 18 wildlife and plant species, or covered species. Take coverage for special status species covered under the SCV Habitat Plan are obtained through participation in the SCV Habitat Plan.

The project is located within the Santa Clara Valley Habitat Plan Area, and a permit application has been prepared for the project (H.T. Harvey and Associates, 2020)[5]. Permanent impacts to seasonal wetlands will occur from native soil fill used to grade the site for construction of a residential housing development. Permanent impacts will measure 0.044 acres, and the 142 cubic yards of native soil fill will completely fill the wetlands. Permanent impacts to California annual grassland will result from grading and construction of the residential development., internal roads, and landscaping. No temporary impacts will occur as a result of the project (H.T. Harvey and Associates, 2020).

[4] USFWS Critical Habitat, online mapper, accessed 02/20/2021. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77

[5] Kern and St. Clar Project, Santa Clara Valley Habitat Plan Application for Private Projects Supplemental Attachment (Project # 4447 -02, prepared by H.T. Harvey & Associates, September 2020.

The project parcels are within areas mapped by the Santa Clara Valley Habitat Agency Geobrowser as Land Cover Fee Zone B. The proposed project is subject to the fees related to impacts occurring in Fee Zone B on non-urban-suburban land cover types and wetland and nitrogen deposition fees (H.T. Harvey and Associates, 2020).

SCVHP Covered Species

Invertebrates
Bay Checkerspot Butterfly
Amphibians & Reptiles
California Tiger Salamander
California Red-legged Frog
Foothill Yellow-legged Frog
Western Pond Turtle
Birds
Western Burrowing Owl
Least Bell's Vireo
Tricolored Blackbird
Mammals
San Joaquin Kit Fox
Plants
Tiburon Indian Paintbrush
Coyote Ceanothus
Mount Hamilton Thistle
Santa Clara Valley Dudleya
Fragrant Fritillary
Loma Prieta Hoita
Smooth Lessingia
Metcalf Canyon Jewelflower
Most Beautiful Jewelflower

Nesting Birds Including Raptors

Nesting birds, including raptors, are protected by the California Department of Fish and Wildlife Code 3503, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Passerines and non-passerine landbirds are further protected under the Federal Migratory Bird Treaty Act. As such, the CDFW typically recommends avoidance of the nesting bird season, or pre-construction surveys for nesting birds prior to any impact to habitat (actual removal of trees/vegetation or impact through noise from construction-related activities). Active nests may require suitable protection buffer zones and/or monitoring as determined by CDFW.

The Bald and Golden Eagle Protection Act provides specific protection of the bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest or egg, unless allowed by permit (16 U.S. Code. 668(a)).

California Native Plant Society and CEQA

The California Native Plant Society (CNPS) has developed a rating system for the state's rare, threatened and endangered plants. Plants rated by CNPS are subject to protection under CEQA, and may also be protected by state and federal endangered species laws if they are listed by the state or federal government.

Regulated Waters

Impacts to stream channels (bed and bank) are regulated by the California Department of Fish and Game Code §§1600 et seq., and may require a DFG Streambed Alteration Agreement. Impacts to wetlands and streams may also fall under the jurisdiction of the Clean Water Act §404 permit process and the Porter-Cologne Water Quality Control Act. The U.S. Army Corp of Engineers (USACE) enforces permit provisions of the Clean Water Act regulating dredge and fill operations. The USACE also exerts jurisdiction over "waters of the U.S." which include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high water marks.

The State of California Regional Water Quality Control Board (RWQCB) enforces permit provisions of the Porter-Cologne Water Quality Control Act. Projects that may potentially impact wetlands in the state of California require a 401 Certification permit. Each 401 Certification is decided on a case-by-case basis, and is guided by the applicable requirements of the CWA, Porter-Cologne and the regulations.

Stormwater Control Requirements

In urbanized areas, stormwater runoff is the largest source of pollution to waters in creeks, ponds and lakes. Pollution caused by stormwater runoff can be controlled through obtaining and complying with a municipal stormwater permit from the National Pollutant Discharge Elimination System (NPDES). Controls set forth in the permit offer an opportunity for development and redevelopment projects to reduce impacts to water quality.

City of Gilroy Code of Ordinances

Tree Protection

Gilroy City Code Section 30.38.270 specifies that removal of protected trees, heritage trees, or greater than 25% of the trees within the outermost dripline of a Community of Protected Trees may only be performed after securing a tree removal permit. The application must include a submittal of a report prepared by a certified arborist. Any tree approved for removal under this section shall be replaced. Protected Trees, Heritage Trees, and Communities of Protected Trees are defined as follows:

- **Protected Tree.** Any indigenous tree characterized by having a single trunk of thirty-eight inches (38”) in circumference or more at a point four and one half feet (4 1/2’) above the ground. Nonindigenous tree species and orchards (including individual fruit and nut trees) are exempt from this definition for the purpose of this section.

- **Heritage Tree.** A tree of any species with a single trunk of 90 inches in circumference or more at a point four and one half feet (4 1/2’) above the ground or with multiple trunks, two of which collectively measure 72 inches in circumference or more at a point four and one half feet (4 1/2’) above the ground.

- **Community of Protected Trees.** Any grouping of Protected Trees which are ecologically or aesthetically related to each other such that the loss of several of them would cause a protected ecological, aesthetic or environmental impact in the immediate area, as determined by a certified arborist. In sections (d), (e), (g), and (h) of this ordinance, the term "tree" shall refer to each and every tree in the Community of Protected Trees that is proposed for removal.

Thirteen (13) native Coast live and Valley oak trees may need to be removed as part of the project, in addition to two non-native Bailey acacia trees. Based on the arborist report prepared for the site, the site does not have any trees that meet the City of Gilroy's criteria for protection.[6]

IX. RECOMMENDATIONS

A. California Red-Legged Frog, California tiger salamander, and American Badger

The California red-legged frog, California tiger salamander and American badger have low potential for occurrence within the project area. A pre-construction survey conducted by a qualified biologist immediately prior to vegetation removal or ground disturbance is recommended in order to minimize any impacts to these special status species. Based on USFWS and/or CDFW requirements for similar projects, additional minimization and avoidance measures could include installation and monitoring of exclusionary fencing, an education training for all contractors working on site, and on-site monitoring by a qualified biologist or trained biological monitor.

B. Nesting Birds

Potential bird nesting habitat exists on the project site. If the project is conducted during the nesting bird season, between February 1st and August 31st, a preconstruction nesting bird survey is recommended. If active bird nests are detected, a suitable nest buffer should be installed (typically between 50 to 250 feet, depending on species). If project activities occur outside of the nesting bird season, preconstruction surveys for nesting birds are not necessary.

C. Wetlands

Based on the VHP application prepared by H.T. Harvey and Associates, permanent impacts to seasonal wetlands (0.044 acres) will occur from grading of the site for project construction. Permits from the US Army Corps of Engineers and California Regional Water Quality Control Board would need to be obtained to fill the seasonal wetland on site.

[6] (Letter from A-Plus Tree, Inc. for the *Gilroy Project (9130 and 9160 Kern Ave)*, dated: October 21, 2020

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APPENDIX A: Special Status Species Table

Special status plant and animal species that were considered for their potential to occur in the project area.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Amphibians and Reptiles			
California tiger salamander *Ambystoma californiense*	FT/CT/-- G2G3 S2S3	Found in cismontane woodland, meadows and seeps, riparian woodland, valley & foothill grassland, vernal pools, and wetlands. Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**Low potential** Small gopher burrows unlikely to provide suitable refuge. Seasonal wetland on site not suitable for breeding and no nearby ponds.
Santa Cruz black salamander *Aneides niger*	--/--/-- G3 S3 SSC	This entirely terrestrial salamander inhabits areas in mixed deciduous woodlands, coniferous forests, and coastal grasslands where it can be found under rocks near streams, in talus, under damp logs, and other refugia.	**No potential** Suitable habitat not present.
California giant salamander *Dicamptodon ensatus*	--/--/-- G3 S2S3 SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Foothill yellow-legged frog *Rana boylii*	--/CE/-- G3 S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Frequents shallow, slow, gravelly streams and rivers with sunny banks. Needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis.	**No potential** Site too open and dry with no streams or rocky substrate.
California red-legged frog *Rana draytonii*	FT/--/-- G2G3 S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Low potential** No permanent wetlands exist nearby. Species is unlikely to cross through project site when moving between breeding habitats.
Western pond turtle *Emys marmorata*	--/--/-- G3G4 S3 SSC USFS:S	Ponds, creeks in woodland, grassland. Species requires deep water ponds, streams, or marshes with sunny, emergent basking sites and sunny upland habitat for nesting.	**No potential** Suitable habitat not present.
Coast horned lizard *Phrynosoma blainvillii*	--/--/-- G3G4 S3S4 SSC	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads. Often found near ant hills feeding on ants.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Birds			
Tricolored blackbird (nesting colony) *Agelaius tricolor*	--/CT/-- G2G3 S1S2 SSC BCC NABCI:RWL	Highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**No potential** Nesting substrate not present.
Grasshopper sparrow (nesting) *Ammodramus savannarum*	--/--/-- G5 S3 SSC	Moderately open grasslands and prairies with patchy bare ground, cultivated fields and forest clearings with short to moderately tall grasses and scattered shrubs. In the west it prefers more open sites with bare ground and shorter vegetation than savannah sparrows.	**Low potential** Site may provide minimal foraging habitat, but generally lacks ample open grassland and scattered shrubs.
Golden eagle (nesting and wintering) *Aquila chrysaetos*	--/FP/-- G5 S3 SSC BCC	Nests on cliffs and in large trees in open areas. Forages in open terrain including grasslands, deserts, savannahs and early successional stages of forest and shrub habitats.	**Low potential** Site has limited foraging potential but lacks nesting habitat.
Great blue heron (nesting colony) *Ardea herodias*	--/--/-- G5 S4	Inhabits a variety of aquatic habitats including shores, tideflats, marshes, swamps, ponds, lakes, rivers and streams, irrigation ditches, irrigated croplands and pastures. Nests colonially in large trees near water bodies.	**Low potential** Possible foraging habitat present but site lacks trees large enough to support nesting.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Burrowing owl (burrow sites & some wintering sites) *Athene cunicularia*	--/--/-- G4 S3 SSC BCC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Low potential** Larger burrows typically used by this species, such as those made by ground squirrels, were not present at this site. Only small gopher burrows present.
Swainson's hawk (nesting) *Buteo swainsoni*	--/CT/-- G5 S3 BCC	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**No potential** Site lacks suitable nesting and foraging habitat.
Northern harrier (nesting) *Circus hudsonius*	--/--/-- G5 S3 SSC	Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands; seldom found in wooded areas. Feeds mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and, rarely on fish. Mostly found in flat, or hummocky, open areas of tall, dense grasses, moist or dry shrubs, and edges for nesting, cover, and feeding	**No potential** Lack of suitable foraging and nesting habitat.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
White-tailed kite (nesting) *Elanus leucurus*	--/FP/-- G5 S3S4	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching	**Low potential** Site provides suitable open foraging habitat but does not provide suitable nesting habitat.
Yellow-breasted chat (nesting) *Icteria virens*	--/--/-- G5 S3 SSC	Inhabits riparian thickets, pond margins, marshes, hedgerows, old pastures and edge habitats in forests especially regenerating burned and logged areas. Distributed throughout northern California and the Central Valley. Nests in dense shrubs up to eight feet in height.	**No potential** Suitable habitat not present.
Loggerhead shrike (nesting) *Lanius ludovicianus*	--/SSC/-- G4 S4 SSC BCC	Inhabits a variety of habitats from open grasslands and scrub to woodlands and riparian areas. Species typically uses fenceposts, shrubs and small trees for perching while foraging in open habitats. Year-round resident of California.	**Low potential** Site provides suitable open foraging habitat but does not provide suitable nesting habitat.
Bank swallow (nesting) *Riparia riparia*	--/CT/-- G5 S2	Requires vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, and the ocean for nesting. Feeds primarily over grassland, shrubland, savannah, and open riparian areas during breeding season and over grassland, brushland, wetlands, and cropland during migration.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Least Bell's vireo *Vireo bellii pusillus*	FE/CE/-- G5T2 S2 NABCI:YWL	Breeds in dense shrubs, riparian thickets, woodland edges, and hedgerows.	**No potential** No suitable roosting or foraging habitat.
Fish			
Monterey hitch *Lavinia exilicauda harengus*	--/--/-- G4T2T4 S2S4 SSC	Widely distributed in the Pajaro and Salinas river systems, both tributary to Monterey Bay. Occupies a wide variety of habitats, although they are most abundant in lowland areas with large pools / reservoirs.[7]	**No potential** Suitable habitat not present.
Monterey roach *Lavinia symmetricus subditus*	--/SSC/-- G4T2T3 S2S3 SSC	Generally found in small streams and intermittent watercourses; dense populations frequently observed in isolated pools. Intolerant of saline waters. Confined to tributaries of Monterey Bay.	**No potential** Suitable habitat not present.
Steelhead (South-Central California Coast DPS) *Oncorhynchus mykiss irideus pop. 9*	FE/--/-- G5T2Q S2 AFS:TH	Naturally spawned anadromous steelhead originating below natural and manmade impassable barriers from the Pajaro River to (but not including) the Santa Maria River.	**No potential** Suitable habitat not present.
Steelhead (Central California Coast DPS) *Oncorhynchus mykiss irideus pop. 8*	FT/--/-- G5T2T3Q S2S3 AFS:TH	Occurs in coastal streams including drainages of San Francisco. From Russian River, South to Soquel Creek and to, but not including, Pajaro River; also San Francisco and San Pablo Bay Basins.	**No potential** Suitable habitat not present.

[7] Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. Fish Species of Special Concern in California. Sacramento: California Department of Fish and Wildlife. www.wildlife.ca.gov

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Mammals			
Pallid bat *Antrozous pallidus*	--/SSC/-- G5 S3 SSC USFS:S WBWG:H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**No potential** Site lacks rocky roosting habitat.
Townsend's big-eared bat *Corynorhinus townsendii*	--/--/-- G3G4 S2 SSC USFS:S WBWG:H	Found throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**No potential** Suitable roosting habitat not present.
Hoary bat *Lasiurus cinereus*	--/*/-- G5 S4 WBWG:M	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**No potential** Suitable roosting or foraging habitat not present.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/--/-- G5T2T3 S2S3 SSC	Inhabits chaparral, coastal scrub, oak woodland, and riparian woodland in the San Francisco Bay Area.	**No potential** Suitable habitat not present.
Santa Cruz kangaroo rat *Dipodomys venustus venustus*	--/--/-- G4T1 S1	Inhabits open sandy areas and dense chaparral. Historically ranged from Belmont south to Corralitos in San Mateo, Santa Clara and Santa Cruz counties.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
American badger *Taxidea taxus*	--/--/-- G5 S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low potential** Suitable foraging habitat present but no burrows identified on site.
San Joaquin kit fox *Vulpes macrotis mutica*	FE/CT/-- G4T2 S2	Occupies habitats with open or low vegetation with loose soils. In the northern portion of their range, they occupy grazed grasslands and to a lesser extent valley oak woodlands. Grazed grasslands including areas adjacent to tilled or fallow fields, and suburban settings. Uses dens excavated by other animals, and human made structures (culverts).	**No potential** Species has not been detected in area in several decades.
Invertebrates			
Smith's blue butterfly (overwintering population) *Euphilotes enoptes smithi*	FE/--/-- G5T1T2 S1	Occurs in scattered populations in association with coastal dune, coastal scrub, chaparral, and grassland habitats. They spend their entire lives in association with two buckwheat plants in the genus *Eriogonum*.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT/--/-- G5T1 S1	Exists on shallow, serpentine-derived soils, which support the plants on which the caterpillars feed. Primary habitat is native grassland on large serpentine outcroppings; secondary habitat consists of "islands" in such grasslands on smaller outcrops, while tertiary habitat is on non-serpentine soils with similarities to serpentine soils.	**No potential** Suitable habitat not present.
Opler's longhorn moth *Adela oplerella*	--/--/-- G2 S2	Habitat consists of serpentine bunchgrass, dominated by *Nassela pulchra* and other native grasses, with some chaparral, oak woodland, seeps, and rocky outcrops.	**No potential** Suitable habitat not present.
Obscure bumble bee *Bombus caliginosus*	--/--/-- G4? S1S2	Coastal areas from Santa Barbara county north to Washington state. Grassy coastal prairies and meadows. Nectar and pollen plants include: *Ceanothus, Cirsium, Clarkia, Keckiella, Lathyrus, Lotus, Lupinus, Rhododendron, Rubus, Trifolium,* and *Vaccinium.*	**No potential** Suitable habitat not present.
Crotch bumble bee *Bombus crotchii*	--/CE/-- G2 S1S2	Inhabits open grasslands and scrub habitats. Requires food plants *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Erigonium*.	**No potential** Species is restricted to a very limited climatic range. No observations in the surrounding area.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Western bumble bee *Bombus occidentalis*	--/CE/-- G2G3 S1 USFS:S	Open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Host plants include *Ceanothus, Centaurea, Chrysothamnus, Cirsium, Geranium, Grindellia, Lupinus, Melilotus, Monardella, Rubus, Solidago,* and *Trifolium*. Nests underground.	**No potential** Lack of signicant nectar sources, and species has not been observed in the area for several decades.
Pinnacles optioservus riffle beetle *Optioservus canus*	--/--/-- G2 S1	Occurs in streams in Monterey and San Benito counties. Little is known about the life history of this species.	**No potential** Suitable habitat not present.
Hom's micro-blind harvestman *Microcina homi*	--/--/-- G1 S1	Found underneath rocks with moist surfaces on deep serpentine soil with fairly gentle slopes, and frequently with adjacent running water.	**No potential** Suitable habitat not present.
Plants, Mosses & Lichens			
Wavyleaf soaproot *Chlorogalum pomeridianum var. minus*	--/--/1B.2 G5T3 S3	Bulbiferous perennial herb found in chaparral. Flowers from May. – Aug.	**No potential** Suitable habitat not present.
Fragrant fritillary *Fritillaria liliacea*	--/--/1B.2 G2 S2	Bulbiferous herb found in moist areas, often ultramafic, open hills, in valley and foothill grasslands. Flowers from Feb. – Apr.	**No potential** Suitably habitat not present.
California alkali grass *Puccinellia simplex*	--/--/1B.2 G3 S2	Annual grass that occurs in saline flats and mineral springs in Valley Grassland and wetland-riparian communities. Flowers from Mar. – May.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Anderson's manzanita *Arctostaphylos andersonii*	--/--/1B.2 G2 S2	Perennial evergreen shrub that occurs in chaparral, and in openings and edges of broadleafed upland forest and North Coast coniferous forest. Flowers from Nov. – May.	**No potential** Suitable habitat not present.
Pajaro manzanita *Arctostaphylos pajaroensis*	--/--/1B.1 G1 S1	Evergreen shrub found in chaparral communities, mainly in the Pajaro River Valley in Monterey County. Flowers from Dec. – Mar.	**No potential** Suitable habitat not present.
Big-scale balsamroot *Balsamorhiza macrolepis*	--/--/1B.2 G2 S2	Flowering plant in the sunflower tribe of the aster family. Grows in dry, open habitat, mostly in mountainous areas. Flowers from Mar. – Jun.	**No potential** Suitable habitat not present.
Santa Cruz Mountains pussypaws *Calyptridium parryi var. hesseae*	--/--/1B.1 G3G4T2 S2	Annual herb found in sandy or gravelly openings in chaparral and foothill cismontane woodland communities. Flowers from May. – Aug.	**No potential** Suitable habitat not present.
Chaparral harebell *Campanula exigua*	--/--/1B.2 G2 S2	Annual herb that grows on talus slopes in chaparral communities, generally in serpentine soil. Flowers from May. – Jun.	**No potential** Suitable habitat not present.
Tiburon paintbrush *Castilleja affinis var. neglecta*	FE/CT/1B.2 G4G5T1T2 S1S2	Hemiparasitic perennial herb that occurs in rocky, serpentine sites in valley and foothill grasslands. Flowers from Apr. – Jun.	**No potential** Suitable habitat not present.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	--/--/1B.2 G5T2 S2	Annual herb that occurs in serpentinite habitat in chaparral openings, cismontane woodland, meadows and seeps, and valley and foothill grassland. Flowers from Apr. – Jun.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Coyote ceanothus *Ceanothus ferrisiae*	FE/--/1B.1 G1 S1	Flowering shrub that occurs in chaparral in serpentine soils. It is endemic to Santa Clara county and is only known from four or five occurrences near Mt. Hamilton. Flowers from Jan. – May.	**No potential** Suitable habitat not present.
Congdon's tarplant *Centromadia parryi ssp. congdonii*	--/--/1B.1 G3T1T2 S1S2	Annual herb that usually occurs in wetlands and occasionally in non-wetlands in valley grassland communities. Flowers from May. – Oct.	**No potential** Suitable habitat not present.
Monterey spineflower *Chorizanthe pungens var. pungens*	FT/--/1B.2 G2T2 S2	Annual herb that occurs in coastal and dune habitats in coastal strand, northern coastal scrub, coastal sage scrub, closed-cone pine forest, yellow pine forest, foothill woodland, and chaparral communities. Flowers from Apr. – Jul.	**No potential** Suitable habitat not present.
Mt. Hamilton thistle *Cirsium fontinale var. campylon*	--/--/1B.2 G2T2 S2	Perennial herb that occurs in wetlands in chaparral, valley grassland, foothill woodland, and wetland-riparian communities. Flowers from Apr. – Oct.	**No potential** Suitable habitat not present.
Santa Clara red ribbons *Clarkia concinna ssp. automixa*	--/--/4.3 G5?T3 S3	Annual herb that occurs in foothill woodlands in the San Francisco Bay. Flowers from May. – Jun.	**No potential** Suitable habitat not present.
San Francisco collinsia *Collinsia multicolor*	--/--/1B.2 G2 S2	Annual herb that occurs in northern coastal scrub and closed-cone pine forests. Flowers from Mar. – May.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Hospital Canyon larkspur *Delphinium californicum ssp. interius*	--/--/1B.2 G3T3 S3	Perennial herb that occurs usually in non-wetlands and occasionally in wetlands in foothill woodlands. Flowers from Apr. – Jun.	**No potential** Suitable habitat not present.
Santa Clara valley dudleya *Dudleya abramsii ssp. setchellii*	FE/--/1B.1 G4T2 S2	Perennial herb that grows in rocky outcrops in serpentine grasslands. Flowers from May. – Jun.	**No potential** Suitable habitat not present.
Hoover's button-celery *Eryngium aristulatum var. hooveri*	--/--/1B.1 G5T1 S1	Annual or perennial herb that occurs in vernal pools, seasonal wetlands, and occasionally alkaline habitat. Flowers in Jun.	**No potential** Not observed on site and not expected based on habitat present. .
San Joaquin spearscale *Extriplex joaquinana*	--/--/1B.2 G2 S2	Annual herb that occurs usually in non-wetlands and occasionally in wetlands in meadows within shadscale scrub and valley grassland. Flowers from Apr. – Sept.	**No potential** No suitable habitat present.
Loma Prieta hoita *Hoita strobilina*	--/--/1B.1 G2? S2?	Perennial herb that occurs in mixed evergreen forest and chaparral communities. Flowers from May. – Aug.	**No potential** Suitable habitat not present.
Santa Cruz tarplant *Holocarpha macradenia*	FT/CE/1B.1 G1 S1	Found in clay and sandy soils in coastal terrace prairie habitat. Elevation: 10-220 M Flowers from Jun. – Oct.	**No potential** Suitable habitat not present.
Legenere *Legenere limosa*	--/--/1B.1 G2 S2	Annual herb that occurs in wetlands, vernal pools, and ponds within valley grassland and freshwater wetlands. Flowers from Apr. – Jun.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Mt. Hamilton coreopsis *Leptosyne hamiltonii*	--/--/1B.2 G2 S2	Annual herb that occurs on dry, exposed slopes in foothill woodland. Flowers from Mar. – May.	**No potential** Suitable habitat not present.
Smooth lessingia *Lessingia micradenia var. glabrata*	--/--/1B.2 G2T2 S2	Annual herb found in serpentine outcrops and gravelly roadcuts in chaparral. Flowers from Jul. – Nov.	**No potential** Suitable habitat not present.
Arcuate bush-mallow *Malacothamnus arcuatus*	--/--/1B.2 G2Q S2	Shrub that occurs in open chaparral in foothill woodlands. Flowers from Apr. – Sept.	**No potential** Suitable habitat not present.
Hall's bush-mallow *Malacothamnus hallii*	--/--/1B.2 G2 S2	Shrub found in open chaparral. Flowers from May. – Sept.	**No potential** Suitable habitat not present.
Woodland woolythreads *Monolopia gracilens*	--/--/1B.2 G3 S3	Annual herb that occurs in serpentine broadleafed upland forest openings, chaparral openings, cismontane woodland, north coast coniferous forest openings, and valley and foothill grasslands. Flowers from Feb. – Jul.	**No potential** Suitable habitat not present.
Prostrate vernal pool navarretia *Navarretia prostrata*	--/--/1B.2 G2 S2	Annual herb that occurs in alkaline floodplains and vernal pools in coastal sage scrub and wetland-riparian habitats. Flowers from Apr. – Jul.	**No potential** Suitable habitat not present.
Santa Cruz Mountains beardtongue *Penstemon rattanii var. kleei*	--/--/1B.2 G4T2 S2	Perennial herb found in chaparral, yellow pine forest, and north coastal coniferous forest. Flowers from May. – Jun.	**No potential** Suitable habitat not present.

Common Name ***Scientific Name***	**Status: Federal/ State/CNPS NatureServe Other**	**Habitat Requirements**	**Potential to Occur in Project Area**
Hairless popcornflower *Plagiobothrys glaber*	--/--/1A GX SX	Annual herb that grows in coastal meadows and seeps, marshes and swamps. Presumed extinct. Flowers from Mar. – May.	**No potential** Suitable habitat not present.
Rock sanicle *Sanicula saxatilis*	--/Rare/1B.2 G2 S2	Perennial herb found on rocky ridges or talus in chaparral and valley grasslands. Flowers from Apr. – May.	**No potential** Suitable habitat not present.
Metcalf Canyon jewelflower *Streptanthus albidus ssp. albidus*	FE/--/1B.1 G2T1 S1	Annual herb that grows in serpentine, grassy, barren slopes in valley grasslands. Flowers from Apr. – Jul.	**No potential** Suitable habitat not present.
Most beautiful jewelflower *Streptanthus albidus ssp. peramoenus*	--/--/1B.2 G2T2 S2 USFS:S	Annual herb found in serpentinite chaparral, cismontane woodland, and valley and foothill grasslands. Flowers from Mar. – Oct.	**No potential** Suitable habitat not present.
Mt. Hamilton jewelflower *Streptanthus callistus*	--/--/1B.3 G1G2 S1S2	Annual herb that grows in open chaparral and gravelly sedimentary scree within chaparral and foothill woodland. Flowers from Apr. – May.	**No potential** Suitable habitat not present.
Santa Cruz clover *Trifolium buckwestiorum*	--/--/1B.1 G2 S2	Annual herb found on the edges of coastal prairie and mixed evergreen forest, generally in grassy or disturbed areas. Flowers from Apr. – Oct.	**No potential** Suitable habitat not present.
Saline clover *Trifolium hydrophilium*	--/CR/1B.2 G2 S2	Annual herb found in small seeps and springs, salt marshes, swamps, vernal pools, and grassy openings in valley and foothill grasslands. Flowers from Apr. – Jun.	**No potential** Suitable habitat not present.

STATUS CODE ABBREVIATION KEY

FEDERAL:
FE = listed as Endangered under the Federal Endangered Species Act
FT = listed as Threatened under the Federal Endangered Species Act
D = Delisted from the Federal Endangered Species Act
-- = No designation

STATE:
CE = listed as Endangered under the California Endangered Species Act
CT = listed as Threatened under the California Endangered Species Act
CC = Candidate to become a state listed Endangered or Threatened Species
FP = Fully Protected Species under California Fish and Game Code
-- = No designation

CNPS RARE PLANT RANK (RPP):
1A = Plants presumed extirpated in California and either rare or extinct elsewhere
1B = Plants rare, threatened, or endangered in California and elsewhere
2A = Plants presumed extirpated in California, but common elsewhere
2B = Plants rare, threatened, or endangered in California, but more common elsewhere
3 = Review List: Plants about which more information is needed
4 = Watch List: Plants of limited distribution

CNPS THREAT RANKS
0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

NATURESERVE CONSERVATION STATUS RANKINGS
G1 = Globally Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 = Globally Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3 = Globally Vulnerable — At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
S1 = State Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
S2 = State Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
S3 = State Vulnerable — At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

OTHER:
SSC = California Department of Fish and Wildlife Species of Special Concern
BCC = U.S. Fish and Wildlife Birds of Conservation Concern
USFS:S = U.S. Forest Service Sensitive Species
AFS:TH = American Fisheries Society: Threatened
AS = Audubon Society (species protected when nesting)
NABCI:RW = The U.S. Committee of the North American Bird Conservation Initiative: Red Watch List
NABCI:YWL = The U.S. Committee of the North American Bird Conservation Initiative: Yellow Watch List
WBWG:M = Western Bat Working Group: Medium Priority
WBWG:H = Western Bat Working Group: High Priority

APPENDIX B: Representative Photos of Project Site

Photo B-1: View of project site and seasonal wetland bisecting the site. (facing SW)

Photo B-2: Culvert along Kern Avenue. Photo taken facing N.

Photo B-3: Representative photo of grassland habitat and surrounding residential homes. Photo taken from center of site facing SE.

Photo B-4: View of project site facing NW.

Appendix D

Noise and Vibration Assessment

THE COTTAGES AT KERN CONSTRUCTION NOISE AND VIBRATION ASSESSMENT

Gilroy, California

February 10, 2021

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Project: 21-010

INTRODUCTION

The project proposes to construct 29 single-family homes with a corresponding private street and common open space. The approximately 3.74-acre project site is currently vacant.

This study evaluates the potential for construction related noise and vibration impacts at adjacent land uses. This report includes a brief description of the fundamentals of environmental noise and vibration, summarizes applicable regulatory criteria, and discusses construction noise and vibration levels expected at receptors near the project site. Based on a review of construction information provided by the applicant, recommendations are made to mitigate construction noise and vibration impacts to less-than-significant levels.

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the *sound level meter*. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from

the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The *Day/Night Average Sound Level* (L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous vibration levels produce.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

TABLE 3 Reactions of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013.

Regulatory Background

The California Department of Transportation (Caltrans) and City of Gilroy have established regulatory criteria that are applicable in this assessment. A summary of the applicable regulatory criteria is provided below.

California Department of Transportation

Caltrans recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings (see Table 3).

City of Gilroy 2040 General Plan

The noise-related goal of the City's General Plan is to *"Protect Gilroy residents from exposure to excessive noise and its effects through appropriate mitigation measures and responsive land use planning, especially in regard to noise-sensitive land uses such as schools, hospitals, and housing for seniors."* The following policies, applicable to the development of the site, are set forth in the General Plan to facilitate this goal:

PH 6.10 *Construction Noise*

Require proposed development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on those uses, to the extent feasible.

PH 6.12 *Vibration Impact Assessment*

Require a vibration impact assessment for proposed development projects in which heavy-duty construction equipment would be used (e.g., pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur.

Gilroy City Code

Chapter 16.38 of the City Code defines the allowable construction hours. This section states the following:

(a) Unless otherwise provided for in a validly issued permit or approval, construction activities shall be limited to the hours of seven (7:00) a.m. and seven (7:00) p.m., Monday through Friday, and nine (9:00) a.m. to seven (7:00) p.m. on Saturday. Construction activities shall not occur on Sundays or City holidays, which include: New Year's Day, Independence Day, Labor Day, Thanksgiving Day and Christmas. "Construction activities" are defined as including but not limited to, excavation, grading, paving, demolitions, construction, alteration or repair of any building, site, street or highway, delivery or removal of construction material to a site, or movement of constriction materials on a site.

(b) In the event the chief building official or his or her designee determines that the public health and safety will not be impaired by the construction activities between the hours of seven (7:00) p.m. and seven (7:00) a.m., and that loss or inconvenience would result to any party in interest, the chief building official may grant permission for such work to be done between the hours of seven (7:00) p.m. and seven (7:00) a.m. upon an application being made at the time the permit for the work is issued or during the progress of the work.

(d) No third person, including but not limited to, landowners, construction company owners, contractors, subcontractors, or employers, shall permit or allow any person working on construction activities, which are under their ownership, control or direction to violate this provision. The provisions prescribed herein may be enforced by the chief building official or his or her designee or the police department. Violation of this section shall be a misdemeanor and each day such violation is committed or permitted to continue constitutes a separate offense and shall be punishable as such (Ord. No. 2004-15, § I, 9-7-04).

Construction Noise Impacts

Temporary noise increases resulting from construction vary depending upon the noise levels generated by various pieces of construction equipment, the timing and duration of noise-generating activities, the distance between construction noise sources and noise-sensitive areas, and the presence of intervening shielding features such as buildings or terrain. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

Construction activities for individual projects are typically carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Typical construction noise levels at a distance of 50 feet are shown in Tables 4 and 5. Table 4 shows the average noise level ranges by construction phase, and Table 5 shows the maximum noise level ranges for different construction equipment. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

TABLE 4 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 5 Construction Equipment 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:

1 Measured at 50 feet from the construction equipment, with a “slow” (1 sec.) time constant.

2 Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

3 Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

Project construction is anticipated to take place over a period of about 19 months, from January 2022 to August 2023. The construction of the proposed project would involve site preparation, grading and excavation, trenching, building erection, interior/architectural coating, and paving. Table 6 shows the anticipated construction noise levels at surrounding receptors calculated throughout all phases of construction based on the provided equipment list. Construction noise levels were calculated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM). Pile driving would not be used as a method of construction.

Noise sensitive uses surrounding the site include residential land uses to the north, south and east, and across Kern Avenue to the west. As shown in Table 6, project construction would have the potential to temporarily increase ambient noise levels in the site vicinity.

City Code Zoning Ordinance Section 16.38 establishes allowed hours of construction and construction best practices to be followed to reduce the impact of construction noise on adjacent or nearby properties. These, and additional recommended best practices which would further ensure project construction would not result in excessive noise levels at surrounding receptors, are listed below:

- Construction activities shall be limited to the hours of seven (7:00) a.m. and seven (7:00) p.m., Monday through Friday, and nine (9:00) a.m. to seven (7:00) p.m. on Saturday. Construction activities shall not occur on Sundays or City holidays.

- Equip all internal combustion engine-driven equipment with mufflers which are in good condition and appropriate for the equipment;

- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area;

- Construct sound walls or other noise reduction measures prior to developing the project site;

- Prohibit unnecessary idling of internal combustion engines;

- Utilize "quiet" air compressors and other stationary noise sources where technology exists;

- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with nearby residential land uses so that construction activities can be scheduled to minimize noise disturbance.

Implementation of the above measures would reduce this impact to a **less-than-significant** level.

Construction Noise Mitigation Measure: None required.

TABLE 6 Estimated Construction Noise Levels at Nearby Land Uses

Phase of Construction	Time Duration (no. of days)	Construction Equipment (Quantity)	Calculated Hourly Average Noise Levels, L_{eq} (dBA)		
			Residential East (180 ft)	Residential North and South (215 ft)	Residential West (230 ft)
Site Preparation	3	Grader (1)	70	68	68
Grading & Excavation	78	Excavator (1) Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)	70	68	68
Trenching & Foundation	4	Tractor/Loader/Backhoe (1)	62	61	60
Building Exterior	200	Crane (2) Forklift (1) Generator Set (1) Tractor/Loader/Backhoe (1)	70	68	68
Building Interior & Architectural Coating	10	Air Compressor (2)	66	64	63
Paving	10	Cement and Mortar Mixers (1) Paving Equipment (1) Roller (1)	68	66	66

All distances are relative to the approximate center of construction at the project site.

Construction Vibration Impacts

The City of Gilroy does not specify a construction vibration limit. For structural damage, Caltrans recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings (see Table 3). The 0.3 in/sec PPV vibration limit would be applicable to properties in the vicinity of the project site. Based on a search with the City of Gilroy Historic Resources Inventory, historic buildings were not identified to be within 1,000 feet of the project site.

Construction activities often generate perceptible vibration levels and levels that could affect nearby structures when heavy equipment or impact tools (e.g., jackhammers, pile drivers, hoe rams) are used in the vicinity of nearby sensitive land uses. Building damage generally falls into three categories. Cosmetic damage (also known as threshold damage) is defined as hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects. Minor damage is defined as hairline cracking in masonry or the loosening of plaster. Major structural damage is defined as wide cracking or the shifting of foundation or bearing walls.

Table 7 presents typical vibration levels from construction equipment at 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Table 7 also presents construction vibration levels at representative distances from the construction equipment located at the closest property line to the nearest structures. Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet.

TABLE 7 Vibration Source Levels for Construction Equipment

Equipment		PPV (in/sec)				
		Reference at 25 ft.	**Residential Building East 5 ft.**	**Residential Building North 30 ft.**	**Residential Buildings West 60 ft.**	**Residential Building South 225 ft.**
Clam shovel drop		0.202	**1.186**	0.165	0.077	0.018
Hydromill (slurry wall)	in soil	0.008	0.047	0.007	0.003	0.001
	in rock	0.017	0.100	0.014	0.006	0.002
Vibratory Roller		0.210	**1.233**	0.172	0.080	0.019
Hoe Ram		0.089	**0.523**	0.073	0.034	0.008
Large bulldozer		0.089	**0.523**	0.073	0.034	0.008
Caisson drilling		0.089	**0.523**	0.073	0.034	0.008
Loaded trucks		0.076	**0.446**	0.062	0.029	0.007
Jackhammer		0.035	0.206	0.029	0.013	0.003
Small bulldozer		0.003	0.018	0.002	0.001	0.000

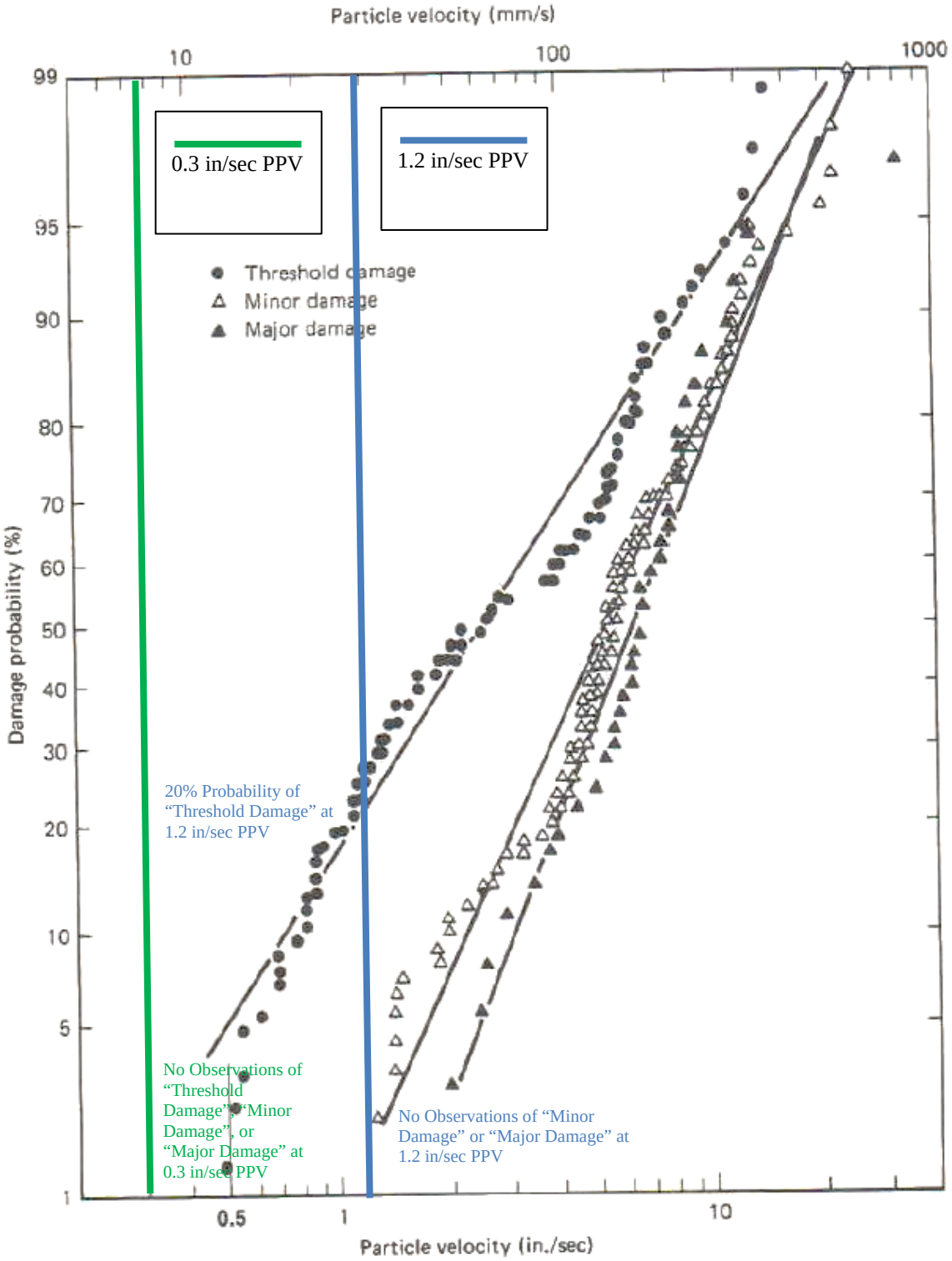
Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, FTA Report No. 0123, September 2018, as modified by Illingworth & Rodkin, Inc., February 2021.

The US Bureau of Mines has analyzed the effects of blast-induced vibration on buildings in USBM RI 8507[1], and these findings have been applied to vibrations emanating from construction equipment on buildings[2]. Figure 1 presents the damage probability as reported in USBM RI 8507 and reproduced by Dowding assuming a maximum vibration level of 1.2 in/sec PPV. As shown on Figure 1, these studies indicate a less than 20% probability of "threshold damage" (referred to as cosmetic damage elsewhere in this report) at vibration levels of 1.2 in/sec PPV or less and no observations of "minor damage" or "major damage" at vibration levels of 1.2 in/sec PPV or less. Based on these data, cosmetic or threshold damage would be manifested in the form of hairline cracking in plaster, the opening of old cracks, the loosening of paint or the dislodging of loose objects. However, minor damage (e.g., hairline cracking in masonry or the loosening of plaster) or major structural damage (e.g., wide cracking or shifting of foundation or bearing walls) would not occur at the adjacent buildings assuming a maximum vibration level of 1.2 in/sec PPV. Other buildings of normal conventional construction located 30 to 225 feet from the project site would not be exposed to vibration levels exceeding the 0.3 in/sec PPV. Based on the data summarized in Figure 1, there were no observations of "threshold damage", "minor damage", or "major damage" at buildings of normal conventional construction when vibration levels were 0.3 in/sec PPV or less.

[1] Siskind, D.E., M.S. Stagg, J.W. Kopp, and C.H. Dowding, Structure Response and Damage Produced by Ground Vibration form Surface Mine Blasting, RI 8507, Bureau of Mines Report of Investigations, U.S. Department of the Interior Bureau of Mines, Washington, D.C., 1980.

[2] Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996.

FIGURE 1 Probability of Cracking and Fatigue from Repetitive Loading



Source: Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996 as modified by Illingworth & Rodkin, Inc., February 2021.

As indicated in Table 7, heavy construction located within 20 feet of structures would have the potential to exceed the California Department of Transportation's recommended limit of 0.3 in/sec PPV at the nearest buildings to the east when construction activities are occurring along the shared property lines. Construction vibration levels would decrease as construction activities move towards the interior of the site. This is a potentially significant impact.

Construction Vibration Mitigation Measure:

The following measures shall be implemented where vibration levels due to construction activities would exceed 0.30 in/sec PPV at the nearby buildings east of the project site:

- Prohibit the use of heavy vibration-generating construction equipment within 20 feet of adjacent buildings.

- Use a smaller vibratory roller, such as the Caterpillar model CP433E vibratory compactor, when compacting materials within 20 feet of adjacent buildings. Only use the static compaction mode when compacting materials within 10 feet of buildings.

- Avoid dropping heavy equipment and use alternative methods for breaking up existing pavement, such as a pavement grinder, instead of dropping heavy objects, within 20 feet of adjacent buildings.

- The contractor shall alert heavy equipment operators to the close proximity of the adjacent structures so they can exercise extra care.

- Designate a person responsible for registering and investigating claims of excessive vibration. The contact information of such person shall be clearly posted on the construction site.

The implementation of these mitigation measures would reduce a potential impact to a less-than-significant level.

Appendix E

Memorandum on Vehicle Miles Travelled Analysis

Hexagon Transportation Consultants, Inc.

Memorandum

Date: March 16, 2021

To: David Hogan, M-Group

From: Gicela Del Rio, T.E.

Subject: 9130 & 9160 Kern Avenue Residential Development VMT Evaluation

Hexagon Transportation Consultants, Inc. has completed a Vehicle Miles Traveled (VMT) evaluation for the proposed residential project located at 9130 & 9160 Kern Avenue in the City of Gilroy. The project as proposed would build 29 single-family residential units on the project site. The project site is located on the east side of Kern Avenue, between St. Clar Avenue and Tatum Avenue. The site is currently vacant. Access to the project would be provided via a new driveway along Kern Avenue.

This memo summarizes the results of the evaluation of the proposed project's effect on VMT. Pursuant to Senate Bill (SB) 743, the California Environmental Quality Act (CEQA) 2019 Update Guidelines Section 15064.3, subdivision (b) states that VMT will be the metric in analyzing transportation impacts for land use projects for CEQA purposes.

VMT Evaluation Methodology

Vehicle Miles Traveled is the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT measures the full distance of personal motorized vehicle-trips with one end within the project. Typically, development projects that are farther from other, complementary land uses (such as a business park far from housing) and in areas without transit or active transportation infrastructure (bike lanes, sidewalks, etc.) generate more driving than development near complementary land uses with more robust transportation options. Therefore, developments located in a central business district with high density and diversity of complementary land uses and frequent transit services are expected to internalize trips and generate shorter and fewer vehicle trips than developments located in a suburban area with low density of residential developments and no transit serve in the project vicinity.

The evaluation of the project's effects on VMT was completed using *Valley Transportation Authority's (VTA) VMT Evaluation Tool.* The VMT tool identifies the existing average VMT per capita and VMT per employee for the project area based on the assessor's parcel number (APN) of a project. Based on the project location, type of development, project description, and proposed trip reduction measures, the evaluation tool calculates the project VMT. Projects located in areas where the existing VMT is above the established threshold are referred to as being in "high-VMT areas". Projects in high-VMT areas are required to include a set of VMT reduction measures that would reduce the project VMT to the greatest extent possible.

VMT Policies and Impact Criteria

To adhere to the state's legislation, the City of Gilroy is currently developing the framework for new transportation policies based on the implementation of VMT as the primary measure of transportation impacts for CEQA purposes. However, since the City has not formally adopted its own City-specific

VMT policies, this study utilizes VMT analysis methodology and impact thresholds recommended in the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluation Impacts in CEQA*, December 2018.

Per OPR's technical advisory, VMT per resident (capita) is the recommended metric to evaluate CEQA-related transportation impacts for residential land uses. As stated in the technical advisory, OPR recommends an impact threshold of 15% below the existing VMT levels for residential land uses. OPR allows the existing VMT to be measured as regional or citywide VMT per capita. Therefore, 15% below the city-wide residential VMT per capita is established as the impact threshold for the project.

The VTA's VMT Evaluation Tool indicates that the citywide average VMT per capita is currently 18.92. Therefore, the OPR recommended impact threshold of 15% below the citywide average VMT per capita equates to 16.08 VMT per capita.

VMT Evaluation

The results of the VMT analysis using the VTA's VMT Evaluation Tool indicate that the existing VMT for residential uses in the project vicinity is 19.01 VMT per capita.

The results also indicate that the project is projected to generate 18.89 VMT per capita. The project's VMT per capita is estimated to be slightly lower than the citywide average VMT per capita, however, the project's VMT would exceed the OPR's recommended impact threshold of 16.08 VMT per capita. Therefore, the project would result in an impact on the transportation system based on OPR's VMT impact criteria.

The VTA VMT Evaluation Tool output sheet is shown on Figure 1.

VMT Impacts and Mitigation

Using OPR's impact thresholds, the project would need to implement VMT reduction measures to achieve a 15% reduction (18.89 to 16.08) in its VMT per capita for the proposed residential uses to reduce its impact to less than significant levels. The project's VMT per capita could be reduced with the implementation of Travel Demand Management (TDM) strategies. TDM strategies that could be implemented by the project in an effort to reduce its VMT per capita include the following:

- TP01 – School Pool Programs: Organize a program that matches families in carpools for school pick-up and drop-off of all households from the project. Organizing a school pool program helps match parents who transport students to schools without a busing program, including private schools, charter schools, and neighborhood schools where students cannot walk or bike. The school pool program would be open to all families in the development. School pools reduce the total number of vehicle trips traveling to and from schools, thereby reducing VMT. **and**
- TP14 – Transit Service Expansion: Project subsidizes transit service through fees and contributions to the transit provider, thereby improving transit service to the project, resulting in increased use of transit and reduced VMT. There are currently no bus lines serving the project site directly. **and**
- TP18 – Voluntary Travel Behavior Change Programs: Provide a program that targets individual attitudes towards travel and providing tools for individuals to analyze and alter their travel behavior with 100% expected resident participation. These programs include mass communication campaigns and travel feedback programs, such as travel diaries or feedback on calories burned from activities and travel. This strategy encourages the use of shared ride modes, transit, walking, and biking, thereby reducing VMT.

Implementation of the above three TDM strategies, however, would not achieve the 15% reduction in VMT per capita required to mitigate the VMT impact.

OPR's recommended 15% below existing VMT impact threshold encourages developments in transit-rich, highly mixed-use areas to implement design features and trip reduction measures to take advantage of existing multi-model infrastructure and land use mixes in reducing trip making and/or trip lengths. However, many communities such as Gilroy have very limited multi-modal transportation infrastructure and lack a mix of complementary land uses. The lack of employment in these communities along with minimal transit options results in a greater number and longer commute trips. Therefore, it is highly unlikely that developments like the proposed project in these cities can achieve OPR's recommended 15% reduction in VMT. Therefore, absent of the City adopting its own City-specific VMT policies and impact thresholds, the proposed project's VMT impact must be deemed significant and unavoidable.

Table 1
VMT Analysis Results

Santa Clara Countywide VMT Evaluation Tool Report

Valley Transportation Authority
Page 2

Residential Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Residential
VMT Without Project:	Home-based VMT per Capita
VMT Baseline Description 1:	City Average
VMT Baseline Value 1:	18.92
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	19.01	18.89	18.89
Low VMT Screening Analysis	No (Fail)	No (Fail)	No (Fail)